

Supplementary Information

Genomic variations in counterpart normal controls of lung squamous cell carcinomas

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Supplementary Figures and Legends

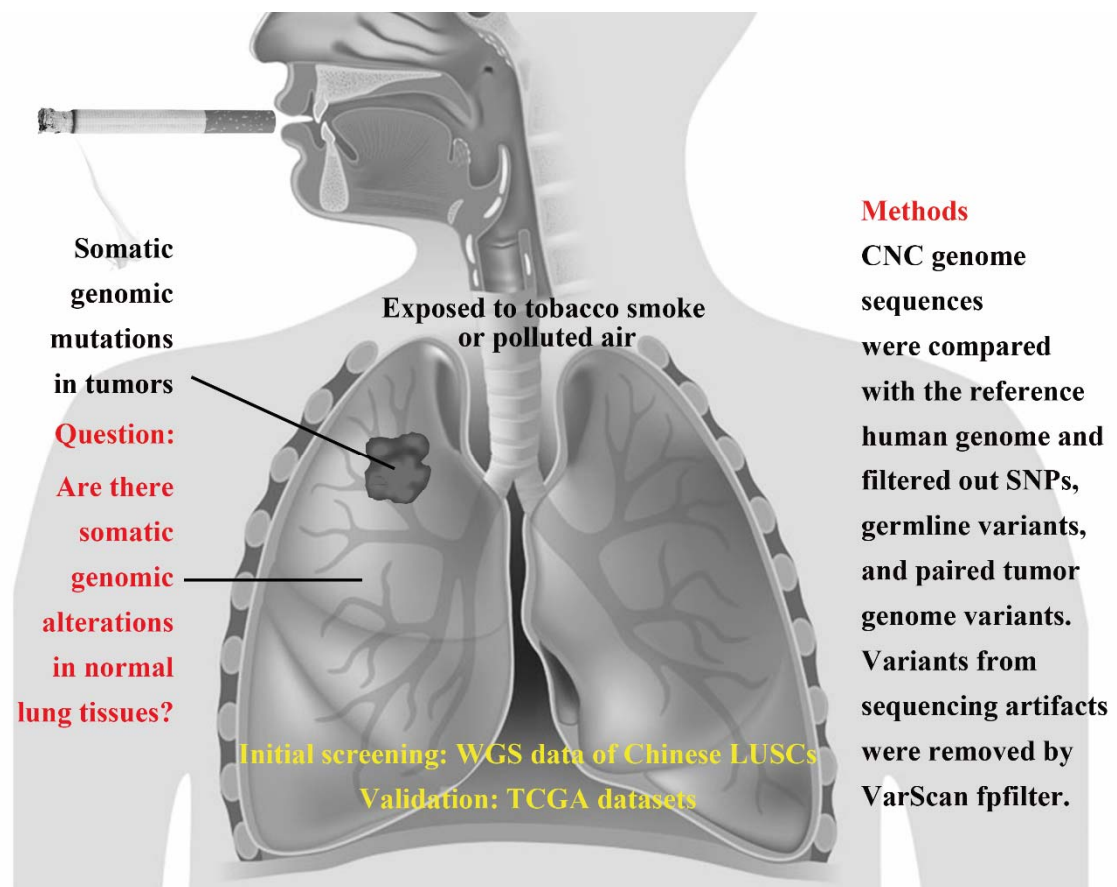


Figure S1. Study design of this study.

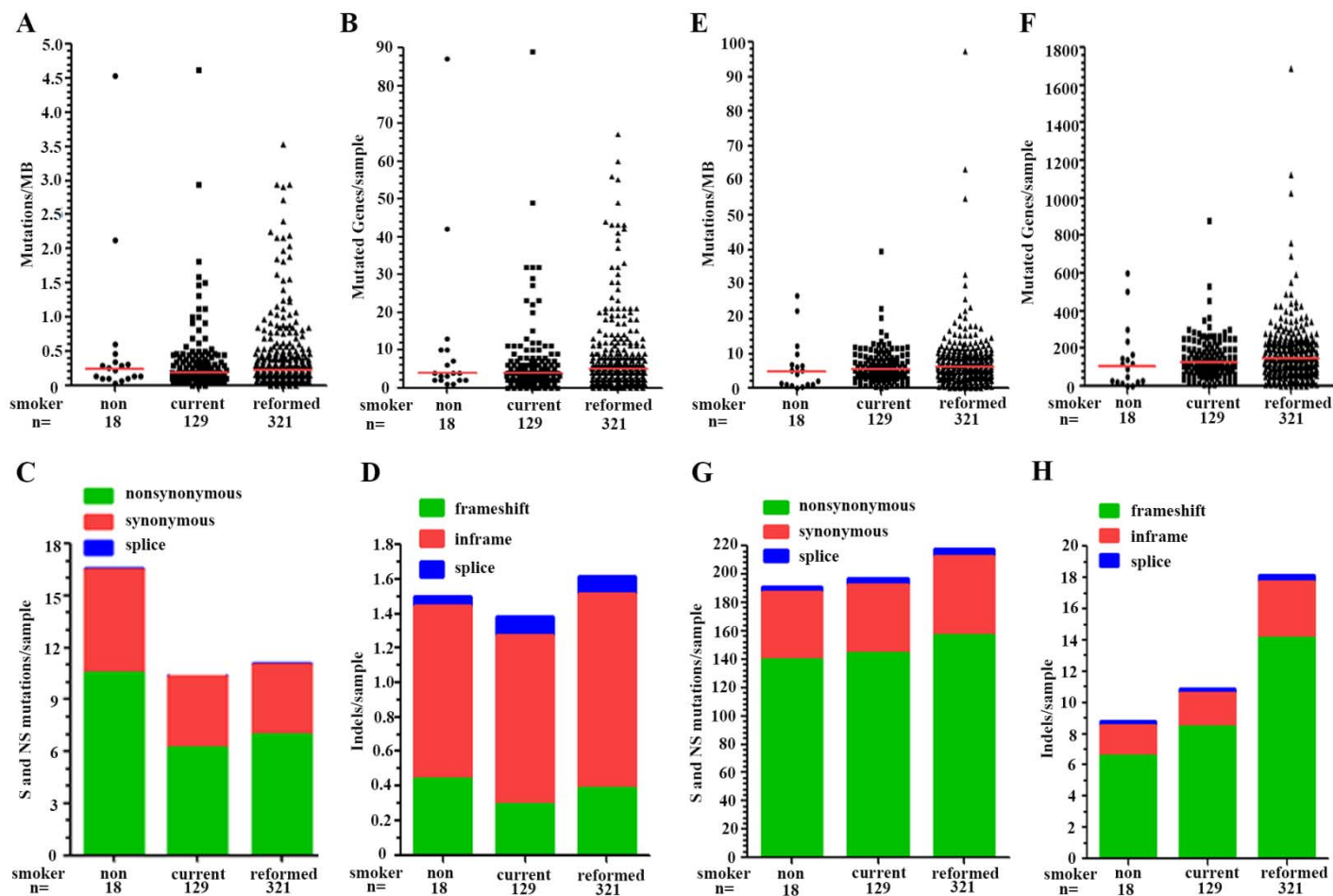


Figure S2. Comparison of genomic variations in CNCs and tumors in smokers and nonsmokers.

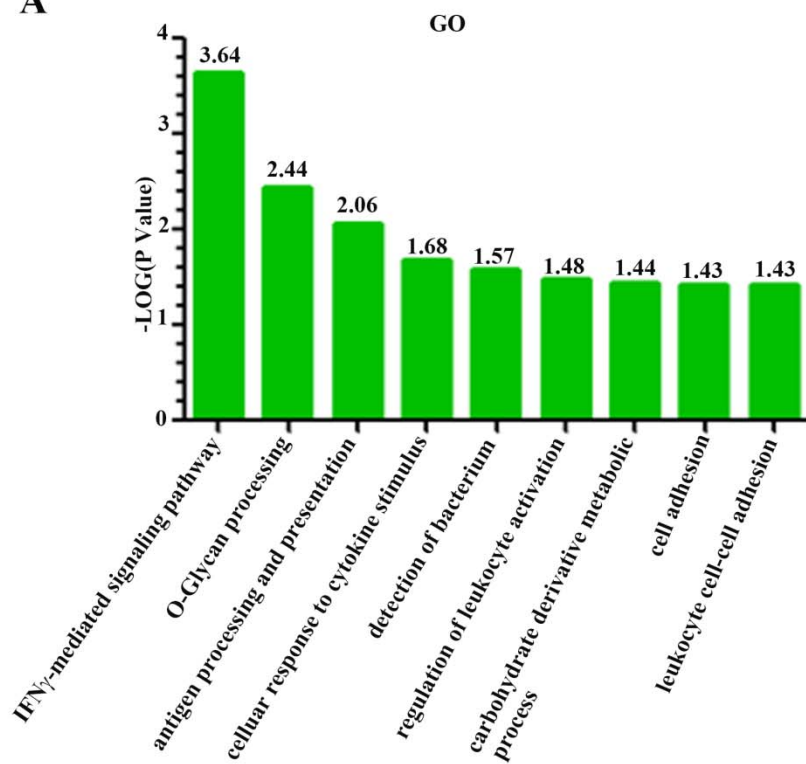
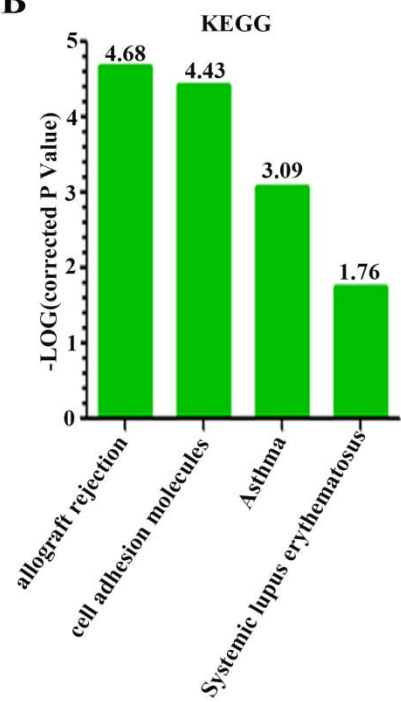
A**B**

Figure S3. The KEGG and GO analyses of the CNC mutations. (A) The GO analysis of pathways altered in CNCs. (B) KEGG analysis.

Supplementary Tables

Table S1. Sequences of primers used to validate genomic variations in normal lung tissues.

| Gene name | Sequence |
|-----------------|----------------------------|
| <i>GLB1L</i> | F1: GTTCACGTTTGCAGAGGGTT |
| | R1: AGGGAGCAGGAAAGAGGG |
| | F2: CATATTTACACTTTCCACCT |
| | R2: CACCACCATTACCAATACCT |
| <i>MACF1</i> | F1: TCGATGGGAGAAGGTTGT |
| | R1: TCTTCGGGAAGCAAAGTC |
| | F2: CACTAGATGATGCCAGGAAG |
| | R2: GCCACAAACAGTATCCCATT |
| <i>NCOR2</i> | F1: TGGGAGAATAGACCAGAGGG |
| | R1: GGCTTTAGACAGGCAAGGAT |
| | F2: ATGGAGGACTGGAAGATGAA |
| | R2: AAGAGTGTTGAGGTCGTTGA |
| <i>DPPA4</i> | F1: TAGCAAGACCATCTCCACA |
| | R1: ACTCACAAAGCAACAGGCAC |
| | F2: CAGGAGGAAGTATGTGAATG |
| | R2: GGTCTTAGGCTAACATCTGC |
| <i>C10orf95</i> | F1: CCAAGGCTGAAGGAGACAAGTG |
| | R1: AGCGACAGTCCCGAGATGCC |
| | F2: CAGGGCATGGAGCGGAGCAA |
| | R2: AGCGACAGTCCCGAGATGCC |
| <i>NCL</i> | F1: GATCTATTCTTGCCATGACTG |
| | R1: ATTTGTGCTGTTTATCTCCC |
| | F2: TCTCCTGGGTTCAAGCAGTT |
| | R2: AAGCCGTAGTCGGTTCTGTG |

Table S2. The characteristics of the 478 patients whose samples were analyzed in this study.

| Characteristics | Total (n=478) | Lung tissue (n=224) | Blood (n=254) |
|-----------------------------|---------------|---------------------|---------------|
| Gender | | | |
| Male | 353 | 159 | 194 |
| Female | 125 | 65 | 60 |
| Age | | | |
| <65 | 161 | 70 | 91 |
| ≥65 | 309 | 154 | 155 |
| n.d. | 8 | 0 | 8 |
| Median (range) | 68 (39 - 90) | 68 (39 – 85) | 68 (45 – 90) |
| Smoking | | | |
| Smoker | 450 | 220 | 230 |
| Non-smoker | 18 | 3 | 15 |
| n.d. | 10 | 1 | 9 |
| Race | | | |
| White | 333 | 150 | 183 |
| Black | 30 | 15 | 15 |
| Asian | 9 | 3 | 6 |
| n.d. | 106 | 56 | 50 |
| Histology | | | |
| Squamous Carcinoma | 478 | 224 | 254 |
| Survival | | | |
| Alive | 266 | 94 | 172 |
| Dead | 212 | 130 | 82 |
| Anatomic Subdivision | | | |
| R-Lower | 104 | 49 | 55 |

| | | | |
|-----------|-----|----|----|
| R-Middle | 17 | 8 | 9 |
| R-Upper | 129 | 64 | 65 |
| L-Lower | 71 | 37 | 34 |
| L-Middle | 0 | 0 | 0 |
| L-Upper | 133 | 59 | 74 |
| Bronchial | 9 | 3 | 6 |
| n.d. | 15 | 4 | 11 |

| TNM stage | | | |
|-----------|-----|----|----|
| I | 2 | 1 | 1 |
| IA | 86 | 35 | 51 |
| IB | 150 | 87 | 63 |
| II | 3 | 1 | 2 |
| IIA | 61 | 17 | 44 |
| IIB | 88 | 40 | 48 |
| III | 2 | 0 | 2 |
| IIIA | 60 | 26 | 34 |
| IIIB | 19 | 14 | 5 |
| IV | 7 | 3 | 4 |

n.d.: not determined

Table S3. Comparison of CNC mutations in normal lung tissues and peripheral blood.

| | Exonic mutations /MB | Mutated genes/sample | Nonsynonymous mutations/sample | Synonymous mutations/sample | Rearrangements/sample | |
|---------|----------------------|----------------------|--------------------------------|-----------------------------|-----------------------|---------|
| | | | | | frameshift | Inframe |
| Lung | 0.5880 | 8.1027 | 7.1830 | 4.1652 | 0.3929 | 1.1205 |
| Blood | 0.5469 | 7.5118 | 6.6850 | 4.1063 | 0.3425 | 1.0394 |
| P value | 0.5212 | 0.5576 | 0.6153 | 0.9225 | 0.4364 | 0.5225 |

Table S4. Comparison of CNC mutations in males and females.

| | Exonic mutations /MB | Mutated genes/sample | Nonsynonymous mutations/sample | Synonymous mutations/sample | Rearrangements/sample | |
|---------|----------------------|----------------------|--------------------------------|-----------------------------|-----------------------|---------|
| | | | | | frameshift | Inframe |
| Males | 0.5981 | 8.2748 | 7.4589 | 4.4051 | 0.3711 | 1.1388 |
| Female | 0.4760 | 6.4160 | 5.3920 | 3.3680 | 0.3520 | 0.9040 |
| P value | 0.0934 | 0.1038 | 0.0658 | 0.1307 | 0.7948 | 0.1029 |

Table S5. Comparison of CNC mutations in patients with different age, race, and TNM stages.

| Age | Exonic mutations/MB | Mutated genes/sample | Nonsynonymous mutations/sample | Synonymous mutations/sample | Rearrangements/sample | |
|---------------|---------------------|----------------------|--------------------------------|-----------------------------|-----------------------|---------|
| | | | | | frameshift | Inframe |
| <65 (n=161) | 0.5512 | 7.6087 | 6.8571 | 3.8261 | 0.3665 | 1.0000 |
| ≥65 (n=309) | 0.5793 | 7.8544 | 6.9223 | 4.2945 | 0.3560 | 1.1165 |
| P value | 0.5257 | 0.3399 | 0.1974 | 0.6593 | 0.2763 | 0.5748 |
| Race | Exonic mutations/MB | Mutated genes/sample | Nonsynonymous mutations/sample | Synonymous mutations/sample | Rearrangements/sample | |
| | | | | | frameshift | Inframe |
| Asian (n=9) | 0.9132 | 13.4444 | 12.6667 | 7.7778 | 0.2222 | 1.6667 |
| Black (n=30) | 0.7917 | 10.2667 | 9.0333 | 6.7667 | 0.4667 | 1.2667 |
| White (n=333) | 0.5362 | 7.4324 | 6.6276 | 3.8289 | 0.3604 | 0.9850 |

| P (Asian vs White) | 0.7884 | 0.8707 | 0.8678 | 0.9986 | 0.7247 | 0.4684 |
|--------------------|---------------------|----------------------|--------------------------------|-----------------------------|-----------------------|---------|
| P (Asian vs Black) | 0.1769 | 0.2225 | 0.3299 | 0.1749 | 0.3965 | 0.9862 |
| P (White vs Black) | 0.0012 | 0.0219 | 0.0428 | 0.0004 | 0.2422 | 0.0966 |
| TNM stage | Exonic mutations/MB | Mutated genes/sample | Nonsynonymous mutations/sample | Synonymous mutations/sample | Rearrangements/sample | |
| | | | | | frameshift | Inframe |
| I, II (n=390) | 0.5440 | 7.5438 | 6.6804 | 3.8582 | 0.3531 | 1.0361 |
| III, IV (n=88) | 0.6680 | 8.9318 | 8.0341 | 5.3523 | 0.4318 | 1.2614 |
| P value | 0.2598 | 0.6953 | 0.4867 | 0.0099 | 0.3231 | 0.8469 |

Table S6. Genomic variations in CNCs of 478 patients with LUSC.

| Patient ID | CNC | Gene | Chr | Start | End | Ref | Alt | Function | Transcriptor | cDNA position | AA position |
|------------|------|------------------|-----|-----------|-----------|-------------------------------|---------------|---------------|--------------|-----------------------------|----------------------|
| 101 | LUNG | <i>CDC14B</i> | 9 | 99329098 | 99329098 | T | A | nonsynonymous | NM_001077181 | c.A1T | p.M1L |
| 101 | LUNG | <i>FAM65A</i> | 16 | 67576991 | 67576991 | C | T | nonsynonymous | NM_001193522 | c.C2314T | p.L772F |
| 101 | LUNG | <i>CHERP</i> | 19 | 16636286 | 16636286 | G | T | nonsynonymous | NM_006387 | c.C1508A | p.P503Q |
| 101 | LUNG | <i>SUPT20HL2</i> | X | 24329890 | 24329890 | G | C | nonsynonymous | NM_001136233 | c.C1543G | p.P515A |
| 102 | LUNG | <i>NISCH</i> | 3 | 52522591 | 52522591 | C | T | nonsynonymous | NM_007184 | c.C3083T | p.A1028V |
| 102 | LUNG | <i>LILRB3</i> | 19 | 54721287 | 54721287 | A | T | nonsynonymous | NM_006864 | c.T1650A | p.S550R |
| 10 | LUNG | <i>RP1L1</i> | 8 | 10466004 | 10466024 | CTGGGCCT CCCCTTCA GCCTC | - | nonframeshift | NM_178857 | c.5584_5604del | p.1862_1868del |
| 10 | LUNG | <i>SMPD1</i> | 11 | 6411931 | 6411942 | CTGGTGCT GGCG | - | nonframeshift | NM_000543 | c.103_114del | p.35_38del |
| 10 | LUNG | <i>RECQL5</i> | 17 | 73626918 | 73626918 | - | TG | splicing | NM_004259 | c.1586-1->CA | |
| 10 | LUNG | <i>BAIAP2L2</i> | 22 | 38483155 | 38483155 | - | TCATGGG TG | nonframeshift | NM_025045 | c.1234_1235insCAC CCATGA | p.N412delinsTPM N |
| 10 | LUNG | <i>CYFIP2</i> | 5 | 156729847 | 156729847 | G | T | nonsynonymous | NM_001291721 | c.G537T | p.Q179H |
| 10 | LUNG | <i>PPP1R18</i> | 6 | 30652266 | 30652266 | C | A | nonsynonymous | NM_133471 | c.G1530T | p.E510D |
| 10 | LUNG | <i>PCSK7</i> | 11 | 117079626 | 117079626 | G | C | nonsynonymous | NM_004716 | c.C1678G | p.R560G |
| 10 | LUNG | <i>CASKIN2</i> | 17 | 73498697 | 73498697 | C | A | nonsynonymous | NM_020753 | c.G2458T | p.G820C |
| 10 | LUNG | <i>CGB1</i> | 19 | 49539560 | 49539560 | T | C | nonsynonymous | NM_033377 | c.A10G | p.R4G |
| 10 | LUNG | <i>SIRPA</i> | 20 | 1895963 | 1895963 | A | G | nonsynonymous | NM_001040023 | c.A298G | p.N100D |
| 10 | LUNG | <i>SIRPA</i> | 20 | 1895965 | 1895965 | C | A | nonsynonymous | NM_001040023 | c.C300A | p.N100K |

| | | | | | | | | | | | |
|-----|------|-----------------|----|-----------|-----------|--|---|---------------|--------------|----------------|---------------|
| 10 | LUNG | <i>ZNF335</i> | 20 | 44588904 | 44588904 | G | A | nonsynonymous | NM_022095 | c.C1963T | p.P655S |
| 10 | LUNG | <i>ARSD</i> | X | 2833638 | 2833638 | C | T | nonsynonymous | NM_001669 | c.G959A | p.G320D |
| 10 | LUNG | <i>ARSD</i> | X | 2833643 | 2833643 | C | A | nonsynonymous | NM_001669 | c.G954T | p.Q318H |
| 10 | LUNG | <i>RLIM</i> | X | 73811739 | 73811739 | A | G | nonsynonymous | NM_016120 | c.T1411C | p.S471P |
| 11 | LUNG | <i>ANKRD36</i> | 2 | 97877478 | 97877478 | G | A | nonsynonymous | NM_001164315 | c.G3469A | p.V1157M |
| 11 | LUNG | <i>GPRIN2</i> | 10 | 47000187 | 47000187 | C | T | nonsynonymous | NM_014696 | c.C1307T | p.P436L |
| 11 | LUNG | <i>TAS2R43</i> | 12 | 11244149 | 11244149 | G | A | nonsynonymous | NM_176884 | c.C680T | p.A227V |
| 11 | LUNG | <i>TCEB3CL</i> | 18 | 44555312 | 44555312 | G | C | nonsynonymous | NM_145653 | c.C902G | p.S301C |
| 121 | LUNG | <i>DENND4B</i> | 1 | 153907304 | 153907306 | TGT | - | nonframeshift | NM_014856 | c.2703_2705del | p.901_902del |
| 121 | LUNG | <i>ADAMTS14</i> | 10 | 72513763 | 72513763 | G | T | nonsynonymous | NM_080722 | c.G2937T | p.Q979H |
| 121 | LUNG | <i>ARSD</i> | X | 2836041 | 2836041 | A | T | nonsynonymous | NM_001669 | c.T667A | p.F223I |
| 121 | LUNG | <i>ARSD</i> | X | 2836047 | 2836047 | C | T | nonsynonymous | NM_001669 | c.G661A | p.G221S |
| 122 | LUNG | <i>KRTAP2-4</i> | 17 | 39221823 | 39221823 | C | G | nonsynonymous | NM_033184 | c.G275C | p.C92S |
| 123 | LUNG | <i>RPTN</i> | 1 | 152129066 | 152129101 | TGGTGGGA ATCTCTGT CTTGTTTCT CAGACTGA CCA | - | nonframeshift | NM_001122965 | c.474_509del | p.158_170del |
| 123 | LUNG | <i>ZFP36</i> | 19 | 39898567 | 39898567 | T | G | nonsynonymous | NM_003407 | c.T227G | p.V76G |
| 124 | LUNG | <i>BCOR</i> | X | 39911528 | 39911528 | A | C | nonsynonymous | NM_001123385 | c.T5102G | p.V1701G |
| 125 | LUNG | <i>PTPN18</i> | 2 | 131129929 | 131129934 | GACGGG | - | nonframeshift | NM_014369 | c.1113_1118del | p.371_373del |
| 126 | LUNG | <i>CTBS</i> | 1 | 85039999 | 85040007 | GCAGCGCC A | - | nonframeshift | NM_004388 | c.92_100del | p.31_34del |
| 126 | LUNG | <i>ZRANB1</i> | 10 | 126673560 | 126673560 | - | A | frameshift | NM_017580 | c.2127dupA | p.X709delinsX |
| 126 | LUNG | <i>KDM6B</i> | 17 | 7751859 | 7751864 | CACCAC | - | nonframeshift | NM_001080424 | c.2253_2258del | p.751_753del |

| | | | | | | | | | | | |
|-----|------|-----------------|----|-----------|-----------|--|---|---------------|--------------|----------------|----------------|
| 126 | LUNG | <i>STOX2</i> | 4 | 184931973 | 184931973 | C | T | nonsynonymous | NM_020225 | c.C1982T | p.P661L |
| 126 | LUNG | <i>HR</i> | 8 | 21982847 | 21982847 | G | A | nonsynonymous | NM_005144 | c.C1727T | p.A576V |
| 126 | LUNG | <i>ARSD</i> | X | 2836041 | 2836041 | A | T | nonsynonymous | NM_001669 | c.T667A | p.F223I |
| 126 | LUNG | <i>ARSD</i> | X | 2836047 | 2836047 | C | T | nonsynonymous | NM_001669 | c.G661A | p.G221S |
| 126 | LUNG | <i>ARSD</i> | X | 2836184 | 2836184 | C | T | nonsynonymous | NM_001669 | c.G524A | p.G175D |
| 126 | LUNG | <i>ARSD</i> | X | 2836211 | 2836211 | A | T | nonsynonymous | NM_001669 | c.T497A | p.L166Q |
| 126 | LUNG | <i>ARSD</i> | X | 2836238 | 2836238 | G | A | nonsynonymous | NM_001669 | c.C470T | p.S157F |
| 127 | LUNG | <i>RPTN</i> | 1 | 152129066 | 152129101 | TGGTGGGA ATCTCTGT CTTGTTTCT CAGACTGA CCA | - | nonframeshift | NM_001122965 | c.474_509del | p.158_170del |
| 127 | LUNG | <i>CRIPAK</i> | 4 | 1388946 | 1388976 | GGAGTGTT CGCCTGCT CACACGTG CCGATGC | - | frameshift | NM_175918 | c.647_677del | p.W216fs |
| 127 | LUNG | <i>ATXN3</i> | 14 | 92537354 | 92537356 | CCT | - | nonframeshift | NM_001164782 | c.66_68del | p.22_23del |
| 127 | LUNG | <i>NCOA3</i> | 20 | 46279815 | 46279823 | GCAGCAGC A | - | nonframeshift | NM_001174087 | c.3738_3746del | p.1246_1249del |
| 127 | LUNG | <i>KRTAP4-7</i> | 17 | 39240795 | 39240795 | A | T | nonsynonymous | NM_033061 | c.A337T | p.S113C |
| 127 | LUNG | <i>JUNB</i> | 19 | 12903211 | 12903211 | C | A | nonsynonymous | NM_002229 | c.C626A | p.P209Q |
| 128 | LUNG | <i>LITDI</i> | 1 | 62675645 | 62675674 | CCTCAGGG CTGGAGGA GGAGGAGG AAGAGC | - | nonframeshift | NM_019079 | c.1199_1228del | p.400_410del |

| | | | | | | | | | | | |
|-----|------|-----------------|----|-----------|-----------|---|---------------|---------------|--------------|-----------------------------|----------------------|
| 128 | LUNG | <i>BAIAP2L2</i> | 22 | 38483155 | 38483155 | - | TCATGGG TG | nonframeshift | NM_025045 | c.1234_1235insCAC CCATGA | p.N412delinsTPM N |
| 128 | LUNG | <i>HLA-B</i> | 6 | 31323115 | 31323115 | T | C | nonsynonymous | NM_005514 | c.A874G | p.K292E |
| 128 | LUNG | <i>TCP11</i> | 6 | 35086272 | 35086272 | C | T | nonsynonymous | NM_001093728 | c.G1325A | p.R442Q |
| 128 | LUNG | <i>TCP11</i> | 6 | 35086275 | 35086275 | T | C | nonsynonymous | NM_001093728 | c.A1322G | p.Q441R |
| 128 | LUNG | <i>GOLGA6L2</i> | 15 | 23690572 | 23690572 | C | T | nonsynonymous | NM_001304388 | c.G98A | p.R33H |
| 128 | LUNG | <i>FCGBP</i> | 19 | 40389657 | 40389657 | T | G | nonsynonymous | NM_003890 | c.A8525C | p.N2842T |
| 129 | LUNG | <i>ESRRA</i> | 11 | 64083328 | 64083328 | C | T | nonsynonymous | NM_001282450 | c.C1162T | p.L388F |
| 129 | LUNG | <i>ESRRA</i> | 11 | 64083331 | 64083331 | C | T | nonsynonymous | NM_001282450 | c.C1165T | p.R389C |
| 12 | LUNG | <i>KTI12</i> | 1 | 52499071 | 52499097 | GCCCGCCA CCTGAGGT CCCGCGAT CGG | - | nonframeshift | NM_138417 | c.337_363del | p.113_121del |
| 12 | LUNG | <i>DOCK4</i> | 7 | 111368429 | 111368429 | - | T | frameshift | NM_014705 | c.5801dupA | p.K1934fs |
| 12 | LUNG | <i>HOMEZ</i> | 14 | 23744827 | 23744829 | TCC | - | nonframeshift | NM_020834 | c.1608_1610del | p.536_537del |
| 12 | LUNG | <i>MAGEC1</i> | X | 140993904 | 140993906 | CCC | - | nonframeshift | NM_005462 | c.714_716del | p.238_239del |
| 12 | LUNG | <i>C5orf47</i> | 5 | 173425201 | 173425201 | C | A | nonsynonymous | NM_001144954 | c.C371A | p.P124Q |
| 12 | LUNG | <i>C7orf50</i> | 7 | 1049749 | 1049749 | C | A | nonsynonymous | NM_001134395 | c.G160T | p.A54S |
| 12 | LUNG | <i>MUC5B</i> | 11 | 1258240 | 1258240 | C | T | nonsynonymous | NM_002458 | c.C3143T | p.A1048V |
| 12 | LUNG | <i>COL2A1</i> | 12 | 48377197 | 48377197 | G | T | nonsynonymous | NM_001844 | c.C2020A | p.P674T |
| 12 | LUNG | <i>RALY</i> | 20 | 32664866 | 32664866 | G | A | nonsynonymous | NM_016732 | c.G691A | p.G231S |
| 12 | LUNG | <i>ARSD</i> | X | 2835989 | 2835989 | A | C | nonsynonymous | NM_001669 | c.T719G | p.F240C |
| 12 | LUNG | <i>ARSD</i> | X | 2835995 | 2835995 | C | A | nonsynonymous | NM_001669 | c.G713T | p.C238F |
| 12 | LUNG | <i>PPP1R3F</i> | X | 49142644 | 49142644 | C | A | nonsynonymous | NM_033215 | c.C1492A | p.R498S |

| | | | | | | | | | | | |
|-----|------|-----------------|----|-----------|-----------|---|-------------------------|---------------|--------------|---------------------------------|-----------------------|
| 130 | LUNG | <i>KRTAP5-1</i> | 11 | 1606121 | 1606150 | CCACAGCC ACCCTTGG ATCCCCCA CAAGAG | - | nonframeshift | NM_001005922 | c.330_359del | p.110_120del |
| 131 | LUNG | <i>KRTAP4-5</i> | 17 | 39305775 | 39305775 | - | GGCAGCA GCTGGGG C | nonframeshift | NM_033188 | c.244_245insGCCCC AGCTGCTGCC | p.Q82delinsRPSC CQ |
| 131 | LUNG | <i>LRRC47</i> | 1 | 3703535 | 3703535 | C | T | nonsynonymous | NM_020710 | c.G955A | p.V319I |
| 131 | LUNG | <i>RNF207</i> | 1 | 6272019 | 6272019 | C | T | nonsynonymous | NM_207396 | c.C1202T | p.T401M |
| 131 | LUNG | <i>MUC4</i> | 3 | 195505836 | 195505836 | G | C | nonsynonymous | NM_018406 | c.C12615G | p.H4205Q |
| 131 | LUNG | <i>SIRPA</i> | 20 | 1895963 | 1895963 | A | G | nonsynonymous | NM_001040023 | c.A298G | p.N100D |
| 131 | LUNG | <i>SIRPA</i> | 20 | 1895965 | 1895965 | C | A | nonsynonymous | NM_001040023 | c.C300A | p.N100K |
| 132 | LUNG | <i>FMN2</i> | 1 | 240371443 | 240371475 | CCCCCTCT ACCCGGAG CGGGCATA CCCCCTCC T | - | nonframeshift | NM_020066 | c.3331_3363del | p.1111_1121del |
| 132 | LUNG | <i>NUTM2F</i> | 9 | 97080945 | 97080947 | AGA | - | nonframeshift | NM_017561 | c.2071_2073del | p.691_691del |
| 132 | LUNG | <i>KRTAP5-1</i> | 11 | 1606121 | 1606150 | CCACAGCC ACCCTTGG ATCCCCCA CAAGAG | - | nonframeshift | NM_001005922 | c.330_359del | p.110_120del |
| 132 | LUNG | <i>KRTAP5-5</i> | 11 | 1651191 | 1651199 | GGCTGTGG A | - | nonframeshift | NM_001001480 | c.121_129del | p.41_43del |
| 132 | LUNG | <i>FADS6</i> | 17 | 72889693 | 72889701 | TGGACTCT G | - | frameshift | NM_178128 | | |

| | | | | | | | | | | | |
|-----|------|-----------------|----|-----------|-----------|---|---|---------------|--------------|----------------|----------------|
| 133 | LUNG | <i>FMN2</i> | 1 | 240371443 | 240371475 | CCCCCTCT ACCCGGAG CGGGCATA CCCCCTCC T | - | nonframeshift | NM_020066 | c.3331_3363del | p.1111_1121del |
| 133 | LUNG | <i>KRTAP5-5</i> | 11 | 1651191 | 1651199 | GGCTGTGG A | - | nonframeshift | NM_001001480 | c.121_129del | p.41_43del |
| 133 | LUNG | <i>HDGFRP2</i> | 19 | 4499633 | 4499647 | AGCTGGCC GGGGAGG | - | frameshift | NM_001001520 | c.1721_1722del | p.K574fs |
| 133 | LUNG | <i>ZNF283</i> | 19 | 44351167 | 44351172 | GGAGAT | - | frameshift | NM_001297752 | | |
| 133 | LUNG | <i>MAGEC1</i> | X | 140993904 | 140993906 | CCC | - | nonframeshift | NM_005462 | c.714_716del | p.238_239del |
| 133 | LUNG | <i>PRR21</i> | 2 | 240982219 | 240982219 | A | G | nonsynonymous | NM_001080835 | c.T181C | p.S61P |
| 133 | LUNG | <i>HERC2</i> | 15 | 28518046 | 28518046 | G | A | nonsynonymous | NM_004667 | c.C905T | p.T302M |
| 133 | LUNG | <i>TPSB2</i> | 16 | 1279438 | 1279438 | C | T | nonsynonymous | NM_024164 | c.G253A | p.A85T |
| 134 | LUNG | <i>KRTAP5-1</i> | 11 | 1606121 | 1606150 | CCACAGCC ACCCTTGG ATCCCCCA CAAGAG | - | nonframeshift | NM_001005922 | c.330_359del | p.110_120del |
| 134 | LUNG | <i>CACNA1B</i> | 9 | 140852110 | 140852110 | A | G | nonsynonymous | NM_000718 | c.A1304G | p.E435G |
| 134 | LUNG | <i>PLEKHG6</i> | 12 | 6436849 | 6436849 | T | G | nonsynonymous | NM_001144856 | c.T2100G | p.H700Q |
| 136 | LUNG | <i>FMN2</i> | 1 | 240370914 | 240370946 | GCCCCCTC TACCCGGA GCGGGAAT ACCTCCTC C | - | nonframeshift | NM_020066 | c.2802_2834del | p.934_945del |

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|-----|------|------------------|----|-----------|-----------|----------------------------|------------------------------------|---------------|--------------|--|-----------------------|
| 136 | LUNG | <i>KRTAP4-7</i> | 17 | 39240795 | 39240795 | - | GCTGCTG CATCTCC AGCTGCT G | frameshift | NM_033061 | c.337_338insGCTGC TGCATCTCCAGCT GCTG | p.S113fs |
| 136 | LUNG | <i>HLA-A</i> | 6 | 29910716 | 29910716 | C | G | nonsynonymous | NM_002116 | c.C256G | p.Q86E |
| 136 | LUNG | <i>GCNT1</i> | 9 | 79118400 | 79118400 | C | T | nonsynonymous | NM_001490 | c.C1103T | p.P368L |
| 136 | LUNG | <i>ZNF219</i> | 14 | 21560086 | 21560086 | C | A | nonsynonymous | NM_016423 | c.G1370T | p.G457V |
| 136 | LUNG | <i>KIAA1024</i> | 15 | 79760682 | 79760682 | G | A | nonsynonymous | NM_015206 | c.G2707A | p.V903I |
| 137 | LUNG | <i>LRWD1</i> | 7 | 102113189 | 102113189 | G | A | nonsynonymous | NM_152892 | c.G1741A | p.D581N |
| 137 | LUNG | <i>OSBPL5</i> | 11 | 3141734 | 3141734 | C | T | nonsynonymous | NM_020896 | c.G523A | p.E175K |
| 137 | LUNG | <i>DPPA3</i> | 12 | 7864243 | 7864243 | A | G | nonsynonymous | NM_199286 | c.A77G | p.D26G |
| 137 | LUNG | <i>CLUH</i> | 17 | 2594931 | 2594931 | T | G | nonsynonymous | NM_015229 | c.A3718C | p.I1240L |
| 138 | LUNG | <i>CAMK2B</i> | 7 | 44266158 | 44266158 | - | G | frameshift | NM_001220 | c.1553dupC | p.P518fs |
| 138 | LUNG | <i>FAM90A1</i> | 12 | 8374781 | 8374781 | - | ACG | nonframeshift | NM_018088 | c.1031_1032insCGT | p.T344delinsTV |
| 138 | LUNG | <i>WDR66</i> | 12 | 122359397 | 122359397 | - | GAGGAGG AGGAGAA A | nonframeshift | NM_144668 | c.186_187insGAGGA GGAGGAGAAA | p.G62delinsGEEE EK |
| 138 | LUNG | <i>KRTAP4-5</i> | 17 | 39305775 | 39305775 | - | GGCAGCA GCTGGGG C | nonframeshift | NM_033188 | c.244_245insGCCCC AGCTGCTGCC | p.Q82delinsRPSC CQ |
| 138 | LUNG | <i>ADM2</i> | 22 | 50921149 | 50921166 | ACACTCGG GCCCCCGA AG | - | nonframeshift | NM_001253845 | c.264_281del | p.88_94del |
| 138 | LUNG | <i>UBE2D3</i> | 4 | 103730849 | 103730849 | G | T | nonsynonymous | NM_181891 | c.C100A | p.Q34K |
| 138 | LUNG | <i>GSDMD</i> | 8 | 144644833 | 144644833 | T | G | nonsynonymous | NM_001166237 | c.T1214G | p.V405G |
| 138 | LUNG | <i>GOLGA6L10</i> | 15 | 82635194 | 82635194 | T | C | nonsynonymous | NM_001164465 | c.A1505G | p.E502G |

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|-----|------|------------------|----|-----------|-----------|--|-----|---------------|--------------|-----------------|---------------|
| 139 | LUNG | <i>CHN2</i> | 7 | 29519752 | 29519752 | A | G | nonsynonymous | NM_001039936 | c.A26G | p.E9G |
| 139 | LUNG | <i>KRTAP4-6</i> | 17 | 39296361 | 39296361 | A | G | nonsynonymous | NM_030976 | c.T379C | p.S127P |
| 139 | LUNG | <i>PRODH</i> | 22 | 18905934 | 18905934 | A | G | nonsynonymous | NM_016335 | c.T1322C | p.L441P |
| 13 | LUNG | <i>FAM171B</i> | 2 | 187559029 | 187559029 | - | CAG | nonframeshift | NM_177454 | c.129_130insCAG | p.Q43delinsQQ |
| 13 | LUNG | <i>PRR21</i> | 2 | 240982117 | 240982144 | GTGGGTGA AGAGGCAT GGATGAAG GACT | - | frameshift | NM_001080835 | c.256_283del | p.S86fs |
| 13 | LUNG | <i>CIQTNF9B</i> | 13 | 24465703 | 24465711 | ACGTGAAT T | - | nonframeshift | NM_001007537 | c.719_727del | p.240_243del |
| 13 | LUNG | <i>PDE4DIP</i> | 1 | 144852379 | 144852379 | G | T | nonsynonymous | NM_001198834 | c.C7064A | p.P2355H |
| 13 | LUNG | <i>BIRC6</i> | 2 | 32617136 | 32617136 | G | T | nonsynonymous | NM_016252 | c.G869T | p.R290L |
| 13 | LUNG | <i>NCR2</i> | 6 | 41310655 | 41310655 | G | T | splicing | NM_001199509 | c.681-1G>T | |
| 13 | LUNG | <i>ODF3</i> | 11 | 199474 | 199474 | C | A | nonsynonymous | NM_053280 | c.C640A | p.L214I |
| 13 | LUNG | <i>CD24</i> | Y | 21154426 | 21154426 | G | A | nonsynonymous | NM_001291737 | c.C170T | p.A57V |
| 142 | LUNG | <i>ARSD</i> | X | 2833605 | 2833605 | C | T | stopgain | NM_001669 | c.G992A | p.W331X |
| 143 | LUNG | <i>KRTAP17-1</i> | 17 | 39471753 | 39471767 | GCCCCGC AGCCAGA | - | nonframeshift | NM_031964 | c.136_150del | p.46_50del |
| 143 | LUNG | <i>CNTNAP3B</i> | 9 | 43915893 | 43915893 | G | C | nonsynonymous | NM_001201380 | c.G3741C | p.M1247I |
| 143 | LUNG | <i>CDC27</i> | 17 | 45249335 | 45249335 | T | G | nonsynonymous | NM_001256 | c.A199C | p.T67P |
| 143 | LUNG | <i>OGFR</i> | 20 | 61444637 | 61444637 | G | C | nonsynonymous | NM_007346 | c.G1670C | p.S557T |
| 143 | LUNG | <i>ARSD</i> | X | 2833605 | 2833605 | C | T | stopgain | NM_001669 | c.G992A | p.W331X |
| 143 | LUNG | <i>ARSD</i> | X | 2833638 | 2833638 | C | T | nonsynonymous | NM_001669 | c.G959A | p.G320D |
| 143 | LUNG | <i>ARSD</i> | X | 2833643 | 2833643 | C | A | nonsynonymous | NM_001669 | c.G954T | p.Q318H |
| 143 | LUNG | <i>RBMX</i> | X | 135961560 | 135961560 | C | G | nonsynonymous | NM_002139 | c.G27C | p.K9N |

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|-----|------|----------------|----|-----------|-----------|-------|-------|---------------|--------------|-------------------|----------------|
| 144 | LUNG | <i>SCN9A</i> | 2 | 167138320 | 167138320 | - | A | splicing | NM_002977 | c.1942-2->T | |
| 144 | LUNG | <i>OR13C2</i> | 9 | 107367393 | 107367396 | GTTA | - | frameshift | NM_001004481 | c.513_516del | p.N171fs |
| 144 | LUNG | <i>OR13C2</i> | 9 | 107367665 | 107367666 | GC | - | frameshift | NM_001004481 | c.243_244del | p.T81fs |
| 144 | LUNG | <i>PNPLA7</i> | 9 | 140444627 | 140444627 | - | T | frameshift | NM_152286 | c.22dupA | p.S8fs |
| 144 | LUNG | <i>DCP1B</i> | 12 | 2062323 | 2062323 | - | TGC | nonframeshift | NM_152640 | c.782_783insGCA | p.Q261delinsQQ |
| 144 | LUNG | <i>A2M</i> | 12 | 9246177 | 9246181 | TATGG | - | splicing | | | |
| 144 | LUNG | <i>OR7G3</i> | 19 | 9236698 | 9236698 | - | ATGGT | frameshift | NM_001001958 | c.928_929insACCAT | p.S310fs |
| 144 | LUNG | <i>ACOXL</i> | 2 | 111551725 | 111551725 | G | A | nonsynonymous | NM_001142807 | c.G319A | p.E107K |
| 144 | LUNG | <i>SMPD4</i> | 2 | 130921990 | 130921990 | T | C | nonsynonymous | NM_017951 | c.A938G | p.Y313C |
| 144 | LUNG | <i>METTL5</i> | 2 | 170676144 | 170676144 | A | G | nonsynonymous | NM_014168 | c.T416C | p.M139T |
| 144 | LUNG | <i>TTN</i> | 2 | 179472223 | 179472223 | A | G | nonsynonymous | NM_001267550 | c.T53192C | p.I17731T |
| 144 | LUNG | <i>FSIP2</i> | 2 | 186673830 | 186673830 | G | C | nonsynonymous | NM_173651 | c.G20064C | p.K6688N |
| 144 | LUNG | <i>SDPR</i> | 2 | 192701301 | 192701301 | G | T | nonsynonymous | NM_004657 | c.C626A | p.P209H |
| 144 | LUNG | <i>FZD7</i> | 2 | 202899657 | 202899657 | C | T | nonsynonymous | NM_003507 | c.C287T | p.P96L |
| 144 | LUNG | <i>ABCA12</i> | 2 | 215882749 | 215882749 | G | T | nonsynonymous | NM_173076 | c.C1765A | p.P589T |
| 144 | LUNG | <i>ECEL1</i> | 2 | 233350938 | 233350938 | G | T | nonsynonymous | NM_004826 | c.C426A | p.D142E |
| 144 | LUNG | <i>FARP2</i> | 2 | 242430501 | 242430501 | A | T | nonsynonymous | NM_014808 | c.A2530T | p.M844L |
| 144 | LUNG | <i>VILL</i> | 3 | 38047428 | 38047428 | T | C | nonsynonymous | NM_015873 | c.T2096C | p.I699T |
| 144 | LUNG | <i>WDR48</i> | 3 | 39108050 | 39108050 | T | G | nonsynonymous | NM_020839 | c.T280G | p.S94A |
| 144 | LUNG | <i>SORCS2</i> | 4 | 7698969 | 7698969 | A | G | nonsynonymous | NM_020777 | c.A1636G | p.I546V |
| 144 | LUNG | <i>DSP</i> | 6 | 7580259 | 7580259 | C | T | nonsynonymous | NM_004415 | c.C3836T | p.A1279V |
| 144 | LUNG | <i>NOL7</i> | 6 | 13616710 | 13616710 | C | T | nonsynonymous | NM_016167 | c.C343T | p.P115S |
| 144 | LUNG | <i>SLC26A5</i> | 7 | 103014869 | 103014869 | T | G | nonsynonymous | NM_198999 | c.A2212C | p.T738P |
| 144 | LUNG | <i>LYPLA1</i> | 8 | 55014316 | 55014316 | G | T | nonsynonymous | NM_001279358 | c.C68A | p.A23E |
| 144 | LUNG | <i>CYLC2</i> | 9 | 105767091 | 105767091 | C | A | nonsynonymous | NM_001340 | c.C295A | p.L99I |

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|-----|------|-----------------|----|-----------|-----------|---|---|---------------|--------------|-----------|----------|
| 144 | LUNG | <i>OR13C3</i> | 9 | 107298926 | 107298926 | A | G | nonsynonymous | NM_001001961 | c.T169C | p.Y57H |
| 144 | LUNG | <i>SVEP1</i> | 9 | 113170289 | 113170289 | C | T | nonsynonymous | NM_153366 | c.G7591A | p.E2531K |
| 144 | LUNG | <i>CDK5RAP2</i> | 9 | 123290164 | 123290164 | C | A | nonsynonymous | NM_018249 | c.G919T | p.A307S |
| 144 | LUNG | <i>ZBTB43</i> | 9 | 129595401 | 129595401 | C | T | nonsynonymous | NM_014007 | c.C613T | p.R205C |
| 144 | LUNG | <i>FAM73B</i> | 9 | 131804745 | 131804745 | G | C | nonsynonymous | NM_032809 | c.G259C | p.V87L |
| 144 | LUNG | <i>C9orf139</i> | 9 | 139927565 | 139927565 | C | T | nonsynonymous | NM_207511 | c.C50T | p.S17L |
| 144 | LUNG | <i>MUC5B</i> | 11 | 1271321 | 1271321 | C | G | nonsynonymous | NM_002458 | c.C13211G | p.A4404G |
| 144 | LUNG | <i>ARFGAP2</i> | 11 | 47187044 | 47187044 | C | T | nonsynonymous | NM_032389 | c.G1555A | p.G519S |
| 144 | LUNG | <i>SLC2A3</i> | 12 | 8074055 | 8074055 | T | C | nonsynonymous | NM_006931 | c.A1445G | p.E482G |
| 144 | LUNG | <i>PLCZ1</i> | 12 | 18865792 | 18865792 | T | A | nonsynonymous | NM_033123 | c.A698T | p.H233L |
| 144 | LUNG | <i>SCAF11</i> | 12 | 46320876 | 46320876 | C | A | nonsynonymous | NM_004719 | c.G2608T | p.D870Y |
| 144 | LUNG | <i>KRT2</i> | 12 | 53045869 | 53045869 | G | A | nonsynonymous | NM_000423 | c.C58T | p.R20W |
| 144 | LUNG | <i>GAS2L3</i> | 12 | 101017839 | 101017839 | C | T | nonsynonymous | NM_174942 | c.C1256T | p.P419L |
| 144 | LUNG | <i>ACACB</i> | 12 | 109673448 | 109673448 | A | T | nonsynonymous | NM_001093 | c.A4442T | p.D1481V |
| 144 | LUNG | <i>SFSWAP</i> | 12 | 132204043 | 132204043 | G | A | nonsynonymous | NM_004592 | c.G565A | p.V189I |
| 144 | LUNG | <i>POLE</i> | 12 | 133253180 | 133253180 | A | T | nonsynonymous | NM_006231 | c.T861A | p.D287E |
| 144 | LUNG | <i>GPALPP1</i> | 13 | 45589633 | 45589633 | G | T | nonsynonymous | NM_018559 | c.G607T | p.G203C |
| 144 | LUNG | <i>OR1A1</i> | 17 | 3119722 | 3119722 | G | A | nonsynonymous | NM_014565 | c.G808A | p.A270T |
| 144 | LUNG | <i>MADCAM1</i> | 19 | 501786 | 501786 | C | A | nonsynonymous | NM_130760 | c.C785A | p.P262Q |
| 144 | LUNG | <i>APC2</i> | 19 | 1466344 | 1466344 | C | T | nonsynonymous | NM_005883 | c.C3044T | p.P1015L |
| 144 | LUNG | <i>PLIN4</i> | 19 | 4511746 | 4511746 | A | T | nonsynonymous | NM_001080400 | c.T2184A | p.N728K |
| 144 | LUNG | <i>PLIN3</i> | 19 | 4859631 | 4859631 | G | T | nonsynonymous | NM_005817 | c.C319A | p.L107I |
| 144 | LUNG | <i>NDUFA7</i> | 19 | 8381489 | 8381489 | T | G | nonsynonymous | NM_005001 | c.A142C | p.K48Q |
| 144 | LUNG | <i>ANGPTL6</i> | 19 | 10204175 | 10204175 | G | A | nonsynonymous | NM_031917 | c.C1072T | p.R358C |
| 144 | LUNG | <i>SDCBP2</i> | 20 | 1293019 | 1293019 | C | T | nonsynonymous | NM_080489 | c.G694A | p.V232M |

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|-----|------|-----------------|----|-----------|-----------|---|---------------|---------------|--------------|-----------------------------|-----------------------|
| 145 | LUNG | <i>PNKP</i> | 19 | 50370425 | 50370425 | C | G | nonsynonymous | NM_007254 | c.G37C | p.E13Q |
| 146 | LUNG | <i>PCDH12</i> | 5 | 141324955 | 141324955 | - | CTGCTGC TG | nonframeshift | NM_016580 | c.3545_3546insCAG CAGCAG | p.R1182delinsSS SR |
| 146 | LUNG | <i>NCOR2</i> | 12 | 124887058 | 124887058 | - | GCTGCT | nonframeshift | NM_006312 | c.1531_1532insAGC AGC | p.P511delinsQQP |
| 146 | LUNG | <i>AIM1L</i> | 1 | 26664131 | 26664131 | C | T | nonsynonymous | NM_001039775 | c.G3542A | p.R1181H |
| 146 | LUNG | <i>MUC20</i> | 3 | 195447886 | 195447886 | G | C | nonsynonymous | NM_001282506 | c.G8C | p.C3S |
| 146 | LUNG | <i>VAR5</i> | 6 | 31759712 | 31759712 | C | T | nonsynonymous | NM_006295 | c.G908A | p.R303Q |
| 146 | LUNG | <i>TAP2</i> | 6 | 32798457 | 32798457 | C | T | nonsynonymous | NM_001290043 | c.G1399A | p.V467I |
| 146 | LUNG | <i>CTBP2</i> | 10 | 126715119 | 126715119 | G | A | nonsynonymous | NM_022802 | c.C1210T | p.R404C |
| 146 | LUNG | <i>MADCAM1</i> | 19 | 501762 | 501762 | A | C | nonsynonymous | NM_130760 | c.A761C | p.Q254P |
| 146 | LUNG | <i>ZNF728</i> | 19 | 23158638 | 23158638 | T | C | nonsynonymous | NM_001267716 | c.A1501G | p.I501V |
| 146 | LUNG | <i>PNKP</i> | 19 | 50370425 | 50370425 | C | G | nonsynonymous | NM_007254 | c.G37C | p.E13Q |
| 147 | LUNG | <i>LRP1B</i> | 2 | 142888294 | 142888294 | G | T | nonsynonymous | NM_018557 | c.C5A | p.S2Y |
| 147 | LUNG | <i>RIOK1</i> | 6 | 7395350 | 7395350 | G | A | nonsynonymous | NM_031480 | c.G341A | p.R114Q |
| 147 | LUNG | <i>KRTAP4-9</i> | 17 | 39261693 | 39261693 | A | T | nonsynonymous | NM_001146041 | c.A53T | p.D18V |
| 147 | LUNG | <i>ZNF729</i> | 19 | 22497201 | 22497201 | A | G | nonsynonymous | NM_001242680 | c.A982G | p.T328A |
| 148 | LUNG | <i>EEF1A1</i> | 6 | 74227973 | 74227973 | G | T | nonsynonymous | NM_001402 | c.C1044A | p.N348K |
| 148 | LUNG | <i>MZT1</i> | 13 | 73301676 | 73301676 | C | A | nonsynonymous | NM_001071775 | c.G65T | p.R22L |
| 148 | LUNG | <i>GOLGA8M</i> | 15 | 28948511 | 28948511 | T | C | nonsynonymous | NM_001282468 | c.A1322G | p.Q441R |
| 148 | LUNG | <i>TMPRSS9</i> | 19 | 2425415 | 2425415 | G | A | nonsynonymous | NM_182973 | c.G2942A | p.R981H |
| 148 | LUNG | <i>DMKN</i> | 19 | 36002386 | 36002386 | C | T | nonsynonymous | NM_033317 | c.G845A | p.S282N |
| 148 | LUNG | <i>ARSD</i> | X | 2836181 | 2836181 | A | T | nonsynonymous | NM_001669 | c.T527A | p.M176K |
| 148 | LUNG | <i>ARSD</i> | X | 2836184 | 2836184 | C | T | nonsynonymous | NM_001669 | c.G524A | p.G175D |
| 148 | LUNG | <i>ARSD</i> | X | 2836211 | 2836211 | A | T | nonsynonymous | NM_001669 | c.T497A | p.L166Q |

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|-----|------|----------------|----|-----------|-----------|---|-----|---------------|--------------|-----------------|----------------|
| 149 | LUNG | <i>ITPKB</i> | 1 | 226924876 | 226924884 | CTGCCGCT G | - | nonframeshift | NM_002221 | c.276_284del | p.92_95del |
| 149 | LUNG | <i>TUBGCP3</i> | 13 | 113201853 | 113201867 | TGGGAAAG TCGCGCG | - | nonframeshift | NM_001286279 | c.1235_1249del | p.412_417del |
| 149 | LUNG | <i>SALL1</i> | 16 | 51175655 | 51175655 | - | GCT | nonframeshift | NM_002968 | c.477_478insAGC | p.G160delinsSG |
| 149 | LUNG | <i>DMKN</i> | 19 | 36002362 | 36002412 | CTGCTGCC ACCACTGC TGCCGCCA CTGCTGCC GCCACTGC TGCTGCCA CTG | - | nonframeshift | NM_033317 | c.819_869del | p.273_290del |
| 149 | LUNG | <i>ZNF806</i> | 2 | 133076035 | 133076035 | C | G | nonsynonymous | NM_001304449 | c.C1496G | p.T499S |
| 149 | LUNG | <i>CEL</i> | 9 | 135947032 | 135947032 | C | A | nonsynonymous | NM_001807 | c.C2152A | p.P718T |
| 149 | LUNG | <i>PIWILA</i> | 11 | 94300752 | 94300752 | G | A | nonsynonymous | NM_152431 | c.G68A | p.R23H |
| 149 | LUNG | <i>ATXN3</i> | 14 | 92537379 | 92537379 | T | C | nonsynonymous | NM_001164782 | c.A43G | p.T15A |
| 149 | LUNG | <i>CPXM1</i> | 20 | 2777921 | 2777921 | C | T | nonsynonymous | NM_001184699 | c.G749A | p.R250H |
| 14 | LUNG | <i>NEB</i> | 2 | 152584316 | 152584330 | TGCTGGCT GTGCCAG | - | nonframeshift | NM_004543 | c.169_183del | p.57_61del |
| 14 | LUNG | <i>FAM171B</i> | 2 | 187559029 | 187559029 | - | CAG | nonframeshift | NM_177454 | c.129_130insCAG | p.Q43delinsQQ |

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|-----|------|-----------------|----|-----------|-----------|---|--------|---------------|--------------|--------------------------|-----------------|
| 14 | LUNG | <i>KRTAP4-1</i> | 17 | 39340796 | 39340852 | CGGCAGCA GCTGGACA TACCACAG CTGGGGTG GCAGGTGG TCTGACAG CAGAGTGG G | - | nonframeshift | NM_033060 | c.246_254del | p.82_85del |
| 14 | LUNG | <i>ALS2</i> | 2 | 202611327 | 202611327 | T | G | nonsynonymous | NM_020919 | c.A1960C | p.S654R |
| 14 | LUNG | <i>AQP12A</i> | 2 | 241631798 | 241631798 | G | C | nonsynonymous | NM_198998 | c.G431C | p.R144P |
| 14 | LUNG | <i>ARSD</i> | X | 2836181 | 2836181 | A | T | nonsynonymous | NM_001669 | c.T527A | p.M176K |
| 14 | LUNG | <i>ARSD</i> | X | 2836184 | 2836184 | C | T | nonsynonymous | NM_001669 | c.G524A | p.G175D |
| 14 | LUNG | <i>ARSD</i> | X | 2836211 | 2836211 | A | T | nonsynonymous | NM_001669 | c.T497A | p.L166Q |
| 150 | LUNG | <i>FAM90A1</i> | 12 | 8374781 | 8374781 | - | ACG | nonframeshift | NM_018088 | c.1031_1032insCGT | p.T344delinsTV |
| 150 | LUNG | <i>AMN</i> | 14 | 103396993 | 103396993 | - | GCCGGG | nonframeshift | NM_030943 | c.1338_1339insGCC GGG | p.F446delinsFAG |
| 150 | LUNG | <i>ANKRD36</i> | 2 | 97877478 | 97877478 | G | A | nonsynonymous | NM_001164315 | c.G3469A | p.V1157M |
| 151 | LUNG | <i>KCNN2</i> | 5 | 113698631 | 113698631 | - | GCC | nonframeshift | NM_021614 | c.159_160insGCC | p.A53delinsAA |
| 151 | LUNG | <i>IRF5</i> | 7 | 128587352 | 128587381 | ACTCTGCA GCCGCCCA CTCTGCGG CCGCCT | - | nonframeshift | NM_001098630 | c.502_531del | p.168_177del |
| 151 | LUNG | <i>ADM2</i> | 22 | 50921149 | 50921166 | ACACTCGG GCCCCCGA AG | - | nonframeshift | NM_001253845 | c.264_281del | p.88_94del |
| 151 | LUNG | <i>SNX7</i> | 1 | 99150610 | 99150610 | G | A | nonsynonymous | NM_015976 | c.G350A | p.R117K |

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|-----|------|-----------------|----|-----------|-----------|------|-------------------------|---------------|--------------|---------------------------------|-----------------------|
| 151 | LUNG | <i>HLA-A</i> | 6 | 29910716 | 29910716 | C | G | nonsynonymous | NM_002116 | c.C256G | p.Q86E |
| 151 | LUNG | <i>SYBU</i> | 8 | 110587914 | 110587914 | G | A | nonsynonymous | NM_001099744 | c.C1213T | p.P405S |
| 151 | LUNG | <i>PLEC</i> | 8 | 144992269 | 144992269 | G | A | nonsynonymous | NM_201380 | c.C12131T | p.T4044M |
| 151 | LUNG | <i>CBWD6</i> | 9 | 69247582 | 69247582 | G | C | splicing | NM_001085457 | c.431-1C>G | |
| 151 | LUNG | <i>ZNF22</i> | 10 | 45498838 | 45498838 | G | C | nonsynonymous | NM_006963 | c.G22C | p.A8P |
| 151 | LUNG | <i>G2E3</i> | 14 | 31061628 | 31061628 | A | G | nonsynonymous | NM_017769 | c.A337G | p.I113V |
| 151 | LUNG | <i>MIDN</i> | 19 | 1254436 | 1254436 | G | A | nonsynonymous | NM_177401 | c.G655A | p.G219S |
| 151 | LUNG | <i>ZNF814</i> | 19 | 58385546 | 58385546 | G | T | nonsynonymous | NM_001144989 | c.C1212A | p.D404E |
| 151 | LUNG | <i>PPP2R3B</i> | X | 299360 | 299360 | G | A | nonsynonymous | NM_013239 | c.C1556T | p.A519V |
| 15 | LUNG | <i>ATAD3B</i> | 1 | 1431081 | 1431081 | T | - | frameshift | NM_031921 | c.1831delT | p.C611fs |
| 15 | LUNG | <i>CTAGE5</i> | 14 | 39784005 | 39784006 | TA | - | splicing | NM_005930.3 | c.1356+2TA>- | |
| 15 | LUNG | <i>FBXO6</i> | 1 | 11728866 | 11728866 | A | G | nonsynonymous | NM_018438 | c.A151G | p.M51V |
| 15 | LUNG | <i>RPS18</i> | 6 | 33243782 | 33243782 | A | G | nonsynonymous | NM_022551 | c.A230G | p.Y77C |
| 15 | LUNG | <i>PTPN11</i> | 12 | 112892407 | 112892407 | T | G | nonsynonymous | NM_002834 | c.T565G | p.S189A |
| 15 | LUNG | <i>PTPN11</i> | 12 | 112892433 | 112892433 | T | G | stopgain | NM_002834 | c.T591G | p.Y197X |
| 15 | LUNG | <i>WDR66</i> | 12 | 122359408 | 122359408 | G | A | nonsynonymous | NM_144668 | c.G197A | p.G66E |
| 15 | LUNG | <i>NCOR1</i> | 17 | 16097870 | 16097870 | C | A | nonsynonymous | NM_006311 | c.G14T | p.G5V |
| 166 | LUNG | <i>VILI</i> | 2 | 219296649 | 219296652 | AGAT | - | frameshift | NM_007127 | c.1172_1175del | p.K391fs |
| 166 | LUNG | <i>WDR66</i> | 12 | 122359397 | 122359397 | - | GAGGAGG AGGAGAA A | nonframeshift | NM_144668 | c.186_187insGAGGA GGAGGAGAAA | p.G62delinsGEEE EK |
| 166 | LUNG | <i>SLC22A17</i> | 14 | 23816039 | 23816039 | G | T | nonsynonymous | NM_020372 | c.C1435A | p.L479M |
| 166 | LUNG | <i>MEGF8</i> | 19 | 42873856 | 42873856 | T | C | nonsynonymous | NM_001271938 | c.T6815C | p.L2272P |
| 166 | LUNG | <i>HCFC1</i> | X | 153220360 | 153220360 | A | G | nonsynonymous | NM_005334 | c.T3490C | p.S1164P |
| 167 | LUNG | <i>CELSR2</i> | 1 | 109792735 | 109792735 | - | CGC | nonframeshift | NM_001408 | c.34_35insCGC | p.T12delinsTP |

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|-----|------|-----------------|---|-----------|-----------|----------------------------------|-----|---------------|--------------|-----------------|----------------|
| 167 | LUNG | <i>MAGEF1</i> | 3 | 184429133 | 184429133 | - | TCC | nonframeshift | NM_022149 | c.476_477insGGA | p.D159delinsED |
| 167 | LUNG | <i>MAP3K13</i> | 3 | 185198303 | 185198305 | GAA | - | nonframeshift | NM_004721 | c.2785_2787del | p.929_929del |
| 167 | LUNG | <i>MSH3</i> | 5 | 79950728 | 79950736 | CAGCGCCC C | - | nonframeshift | NM_002439 | c.182_190del | p.61_64del |
| 167 | LUNG | <i>CCDC27</i> | 1 | 3677983 | 3677983 | C | T | nonsynonymous | NM_152492 | c.C850T | p.P284S |
| 167 | LUNG | <i>NPHP4</i> | 1 | 5947442 | 5947442 | C | T | nonsynonymous | NM_015102 | c.G2389A | p.V797M |
| 167 | LUNG | <i>RHD</i> | 1 | 25627470 | 25627470 | G | A | nonsynonymous | NM_016124 | c.G520A | p.V174M |
| 167 | LUNG | <i>PTPRU</i> | 1 | 29602227 | 29602227 | G | T | nonsynonymous | NM_005704 | c.G1412T | p.R471L |
| 167 | LUNG | <i>LRRC41</i> | 1 | 46751448 | 46751448 | G | A | nonsynonymous | NM_006369 | c.C1081T | p.P361S |
| 167 | LUNG | <i>DNASE2B</i> | 1 | 84867741 | 84867741 | T | C | nonsynonymous | NM_021233 | c.T283C | p.Y95H |
| 167 | LUNG | <i>ARHGAP29</i> | 1 | 94668734 | 94668734 | A | C | nonsynonymous | NM_004815 | c.T795G | p.N265K |
| 167 | LUNG | <i>FRRS1</i> | 1 | 100214287 | 100214287 | A | C | nonsynonymous | NM_001013660 | c.T38G | p.L13R |
| 167 | LUNG | <i>TTF2</i> | 1 | 117603131 | 117603131 | G | A | nonsynonymous | NM_003594 | c.G83A | p.S28N |
| 167 | LUNG | <i>FCGR1B</i> | 1 | 120930122 | 120930122 | A | C | nonsynonymous | NM_001017986 | c.T479G | p.I160R |
| 167 | LUNG | <i>FCGR1B</i> | 1 | 120934449 | 120934449 | C | T | nonsynonymous | NM_001017986 | c.G239A | p.S80N |
| 167 | LUNG | <i>ZMYND10</i> | 3 | 50379257 | 50379257 | G | A | nonsynonymous | NM_015896 | c.C1105T | p.R369W |
| 167 | LUNG | <i>DNAH1</i> | 3 | 52409413 | 52409413 | C | G | nonsynonymous | NM_015512 | c.C7143G | p.I2381M |
| 167 | LUNG | <i>ECE2</i> | 3 | 183975266 | 183975266 | G | A | nonsynonymous | NM_014693 | c.G202A | p.G68R |
| 167 | LUNG | <i>CLCN2</i> | 3 | 184076780 | 184076780 | C | T | nonsynonymous | NM_004366 | c.G203A | p.R68H |
| 167 | LUNG | <i>THPO</i> | 3 | 184090333 | 184090333 | T | C | nonsynonymous | NM_000460 | c.A1030G | p.T344A |
| 167 | LUNG | <i>MB21D2</i> | 3 | 192516317 | 192516317 | C | T | nonsynonymous | NM_178496 | c.G1334A | p.G445E |
| 167 | LUNG | <i>ARHGEF28</i> | 5 | 73091203 | 73091203 | C | G | nonsynonymous | NM_001177693 | c.C1011G | p.H337Q |
| 168 | LUNG | <i>ODF1</i> | 8 | 103573011 | 103573037 | TGCAACCC CTGCAGCC CCTGCAAC | - | nonframeshift | NM_024410 | c.652_678del | p.218_226del |

| | | | | | | CCG | | | | | |
|-----|------|-----------------|----|-----------|-----------|--|---|---------------|--------------|----------------|--------------|
| 168 | LUNG | <i>PCDHGA2</i> | 5 | 140720474 | 140720474 | A | G | nonsynonymous | NM_018915 | c.A1936G | p.I646V |
| 168 | LUNG | <i>PPP2R3B</i> | X | 299360 | 299360 | G | A | nonsynonymous | NM_013239 | c.C1556T | p.A519V |
| 168 | LUNG | <i>RBMX</i> | X | 135958704 | 135958704 | G | C | nonsynonymous | NM_002139 | c.C499G | p.P167A |
| 168 | LUNG | <i>RBMX</i> | X | 135958730 | 135958730 | C | A | nonsynonymous | NM_002139 | c.G473T | p.G158V |
| 169 | LUNG | <i>HAVCRI</i> | 5 | 156479558 | 156479572 | TTGGAACA GTCGTCA | - | nonframeshift | NM_012206 | c.473_487del | p.158_163del |
| 169 | LUNG | <i>DCAKD</i> | 17 | 43112232 | 43112233 | CT | - | frameshift | NM_001288654 | c.21_22del | p.T7fs |
| 169 | LUNG | <i>PTPN13</i> | 4 | 87732228 | 87732228 | G | T | nonsynonymous | NM_080683 | c.G7329T | p.M2443I |
| 169 | LUNG | <i>GTF2H2C</i> | 5 | 68862442 | 68862442 | G | A | nonsynonymous | NM_001098728 | c.G161A | p.R54Q |
| 169 | LUNG | <i>OR1D5</i> | 17 | 2966273 | 2966273 | G | A | nonsynonymous | NM_014566 | c.C629T | p.P210L |
| 169 | LUNG | <i>ANKRD30B</i> | 18 | 14779986 | 14779986 | G | A | nonsynonymous | NM_001145029 | c.G1448A | p.R483Q |
| 169 | LUNG | <i>ANKRD30B</i> | 18 | 14780019 | 14780019 | G | T | nonsynonymous | NM_001145029 | c.G1481T | p.G494V |
| 169 | LUNG | <i>SHROOM2</i> | X | 9914947 | 9914947 | G | C | nonsynonymous | NM_001649 | c.G4821C | p.L1607F |
| 169 | LUNG | <i>SLC7A3</i> | X | 70146475 | 70146475 | G | C | nonsynonymous | NM_001048164 | c.C1522G | p.L508V |
| 16 | LUNG | <i>RPTN</i> | 1 | 152129066 | 152129101 | TGGTGGGA ATCTCTGT CTTGTTTCT CAGACTGA CCA | - | nonframeshift | NM_001122965 | c.474_509del | p.158_170del |
| 16 | LUNG | <i>QRICH2</i> | 17 | 74288239 | 74288268 | CTGCACCA GGTTGGAC CAAACCAT GCTGAA | - | nonframeshift | NM_032134 | c.2042_2071del | p.681_691del |

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|-----|------|-----------------|----|-----------|-----------|-----|---|---------------|--------------|--------------|--------------|
| 175 | LUNG | <i>ANKMY2</i> | 7 | 16676082 | 16676082 | - | A | splicing | NM_020319 | c.68-2->T | |
| 175 | LUNG | <i>ADORA2B</i> | 17 | 15878110 | 15878112 | CAA | - | nonframeshift | NM_000676 | c.453_455del | p.151_152del |
| 175 | LUNG | <i>PLAC4</i> | 21 | 42551272 | 42551272 | C | - | frameshift | NM_182832 | c.284delG | p.G95fs |
| 175 | LUNG | <i>TATDN2</i> | 3 | 10320692 | 10320692 | C | T | nonsynonymous | NM_014760 | c.C2269T | p.R757C |
| 175 | LUNG | <i>GORASP1</i> | 3 | 39142562 | 39142562 | G | A | nonsynonymous | NM_031899 | c.C380T | p.A127V |
| 175 | LUNG | <i>OR5H2</i> | 3 | 98002527 | 98002527 | C | T | nonsynonymous | NM_001005482 | c.C796T | p.R266C |
| 175 | LUNG | <i>IQCB1</i> | 3 | 121500697 | 121500697 | G | A | nonsynonymous | NM_001023570 | c.C1303T | p.R435C |
| 175 | LUNG | <i>LXN</i> | 3 | 158384463 | 158384463 | C | T | nonsynonymous | NM_020169 | c.G641A | p.R214H |
| 175 | LUNG | <i>MFI2</i> | 3 | 196754781 | 196754781 | A | G | nonsynonymous | NM_033316 | c.T50C | p.V17A |
| 175 | LUNG | <i>PCDHB10</i> | 5 | 140573461 | 140573461 | G | A | nonsynonymous | NM_018930 | c.G1336A | p.D446N |
| 175 | LUNG | <i>PCDHGB3</i> | 5 | 140751144 | 140751144 | G | A | nonsynonymous | NM_032097 | c.G1183A | p.V395I |
| 175 | LUNG | <i>ZNF716</i> | 7 | 57528450 | 57528450 | C | A | nonsynonymous | NM_001159279 | c.C283A | p.Q95K |
| 175 | LUNG | <i>SLC26A3</i> | 7 | 107432300 | 107432300 | G | T | nonsynonymous | NM_000111 | c.C357A | p.F119L |
| 175 | LUNG | <i>AASS</i> | 7 | 121773744 | 121773744 | C | G | nonsynonymous | NM_005763 | c.G37C | p.G13R |
| 175 | LUNG | <i>TMEM176A</i> | 7 | 150500527 | 150500527 | C | T | nonsynonymous | NM_018487 | c.C325T | p.R109W |
| 175 | LUNG | <i>ABCB8</i> | 7 | 150730966 | 150730966 | C | G | nonsynonymous | NM_001282291 | c.C421G | p.L141V |
| 175 | LUNG | <i>RP1L1</i> | 8 | 10467605 | 10467605 | C | T | nonsynonymous | NM_178857 | c.G4003A | p.G1335R |
| 175 | LUNG | <i>RP1L1</i> | 8 | 10467637 | 10467637 | T | C | nonsynonymous | NM_178857 | c.A3971G | p.E1324G |
| 175 | LUNG | <i>SLC35G5</i> | 8 | 11189591 | 11189591 | C | T | nonsynonymous | NM_054028 | c.C976T | p.R326W |
| 175 | LUNG | <i>NUDCD1</i> | 8 | 110255414 | 110255414 | T | G | nonsynonymous | NM_032869 | c.A1576C | p.M526L |
| 175 | LUNG | <i>DMRT2</i> | 9 | 1056569 | 1056569 | G | A | nonsynonymous | NM_181872 | c.G982A | p.V328M |
| 175 | LUNG | <i>WNK2</i> | 9 | 96021375 | 96021375 | C | G | nonsynonymous | NM_001282394 | c.C2545G | p.P849A |
| 175 | LUNG | <i>WDR38</i> | 9 | 127618752 | 127618752 | C | T | nonsynonymous | NM_001045476 | c.C491T | p.T164I |
| 175 | LUNG | <i>COL5A1</i> | 9 | 137688701 | 137688701 | A | G | nonsynonymous | NM_000093 | c.A2852G | p.N951S |
| 175 | LUNG | <i>DPP7</i> | 9 | 140008443 | 140008443 | G | A | nonsynonymous | NM_013379 | c.C359T | p.S120F |

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|-----|------|-----------------|----|-----------|-----------|------|---|---------------|--------------|--------------|----------|
| 175 | LUNG | <i>CALHM2</i> | 10 | 105207301 | 105207301 | C | T | nonsynonymous | NM_015916 | c.G580A | p.V194M |
| 175 | LUNG | <i>ADGRA1</i> | 10 | 134942698 | 134942698 | C | A | nonsynonymous | NM_001083909 | c.C1366A | p.P456T |
| 175 | LUNG | <i>KRT80</i> | 12 | 52565198 | 52565198 | G | A | nonsynonymous | NM_182507 | c.C1343T | p.S448L |
| 175 | LUNG | <i>ORMDL2</i> | 12 | 56212832 | 56212832 | A | T | nonsynonymous | NM_014182 | c.A49T | p.M17L |
| 175 | LUNG | <i>KIAA1033</i> | 12 | 105520097 | 105520097 | T | C | nonsynonymous | NM_015275 | c.T995C | p.I332T |
| 175 | LUNG | <i>POSTN</i> | 13 | 38143472 | 38143472 | A | G | nonsynonymous | NM_006475 | c.T2396C | p.F799S |
| 175 | LUNG | <i>CYB5D1</i> | 17 | 7762859 | 7762859 | C | T | nonsynonymous | NM_144607 | c.C616T | p.L206F |
| 175 | LUNG | <i>SLC35G4</i> | 18 | 11610349 | 11610349 | G | A | nonsynonymous | NM_001282300 | c.G755A | p.S252N |
| 175 | LUNG | <i>PLAC4</i> | 21 | 42551222 | 42551222 | T | G | nonsynonymous | NM_182832 | c.A334C | p.I112L |
| 175 | LUNG | <i>PLAC4</i> | 21 | 42551270 | 42551270 | A | G | nonsynonymous | NM_182832 | c.T286C | p.Y96H |
| 17 | LUNG | <i>C5orf42</i> | 5 | 37139474 | 37139474 | - | A | splicing | NM_023073 | c.8471-2->T | |
| 17 | LUNG | <i>ZNF3</i> | 7 | 99662512 | 99662515 | TAGT | - | frameshift | NM_017715 | c.292_295del | p.T98fs |
| 17 | LUNG | <i>VCX2</i> | X | 8138165 | 8138168 | CCTC | - | frameshift | NM_016378 | c.325_328del | p.E109fs |
| 17 | LUNG | <i>SLC6A18</i> | 5 | 1225719 | 1225719 | C | G | nonsynonymous | NM_182632 | c.C127G | p.R43G |
| 17 | LUNG | <i>TCOF1</i> | 5 | 149776067 | 149776067 | A | G | nonsynonymous | NM_001135243 | c.A4004G | p.K1335R |
| 17 | LUNG | <i>TTYH3</i> | 7 | 2671862 | 2671862 | T | G | nonsynonymous | NM_025250 | c.T73G | p.W25G |
| 17 | LUNG | <i>DNAH11</i> | 7 | 21805202 | 21805202 | A | G | nonsynonymous | NM_001277115 | c.A9097G | p.I3033V |
| 17 | LUNG | <i>NUPL2</i> | 7 | 23224796 | 23224796 | A | G | nonsynonymous | NM_007342 | c.A229G | p.K77E |
| 17 | LUNG | <i>UPK3B</i> | 7 | 76144456 | 76144456 | G | A | nonsynonymous | NM_030570 | c.G851A | p.R284K |
| 17 | LUNG | <i>SIRT3</i> | 11 | 236094 | 236094 | A | G | nonsynonymous | NM_012239 | c.T235C | p.F79L |
| 17 | LUNG | <i>CACNA1H</i> | 16 | 1254361 | 1254361 | A | T | nonsynonymous | NM_021098 | c.A2354T | p.K785M |
| 17 | LUNG | <i>DNASE1L2</i> | 16 | 2286876 | 2286876 | C | A | nonsynonymous | NM_001374 | c.C59A | p.A20D |
| 17 | LUNG | <i>ALOX12</i> | 17 | 6913336 | 6913336 | C | A | nonsynonymous | NM_000697 | c.C1703A | p.T568N |
| 17 | LUNG | <i>ARSD</i> | X | 2836041 | 2836041 | A | T | nonsynonymous | NM_001669 | c.T667A | p.F223I |
| 17 | LUNG | <i>ARSD</i> | X | 2836181 | 2836181 | A | T | nonsynonymous | NM_001669 | c.T527A | p.M176K |

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|-----|------|------------------|----|-----------|-----------|---|-------------------------|---------------|--------------|---------------------------------|-----------------------|
| 17 | LUNG | <i>ARSD</i> | X | 2836184 | 2836184 | C | T | nonsynonymous | NM_001669 | c.G524A | p.G175D |
| 181 | LUNG | <i>KRTAP4-5</i> | 17 | 39305775 | 39305775 | - | GGCAGCA GCTGGGG C | nonframeshift | NM_033188 | c.244_245insGCCCC AGCTGCTGCC | p.Q82delinsRPSC CQ |
| 181 | LUNG | <i>GIGYF1</i> | 7 | 100282686 | 100282686 | T | G | nonsynonymous | NM_022574 | c.A1276C | p.K426Q |
| 181 | LUNG | <i>MCF2L</i> | 13 | 113732707 | 113732707 | C | T | nonsynonymous | NM_024979 | c.C1685T | p.S562F |
| 181 | LUNG | <i>RCOR1</i> | 14 | 103059504 | 103059504 | C | T | nonsynonymous | NM_015156 | c.C281T | p.S94L |
| 181 | LUNG | <i>GEMIN4</i> | 17 | 648842 | 648842 | C | T | nonsynonymous | NM_015721 | c.G2441A | p.G814E |
| 181 | LUNG | <i>FMNL1</i> | 17 | 43308023 | 43308023 | A | G | nonsynonymous | NM_005892 | c.A182G | p.N61S |
| 181 | LUNG | <i>ARSD</i> | X | 2836047 | 2836047 | C | T | nonsynonymous | NM_001669 | c.G661A | p.G221S |
| 183 | LUNG | <i>NEU4</i> | 2 | 242756317 | 242756317 | G | A | nonsynonymous | NM_001167602 | c.G430A | p.E144K |
| 183 | LUNG | <i>HLA-DPB1</i> | 6 | 33048691 | 33048691 | C | G | nonsynonymous | NM_002121 | c.C343G | p.P115A |
| 183 | LUNG | <i>HLA-DPB1</i> | 6 | 33048694 | 33048694 | A | G | nonsynonymous | NM_002121 | c.A346G | p.M116V |
| 183 | LUNG | <i>OR52B2</i> | 11 | 6190994 | 6190994 | C | G | nonsynonymous | NM_001004052 | c.G563C | p.R188P |
| 183 | LUNG | <i>USP6</i> | 17 | 5036274 | 5036274 | C | A | nonsynonymous | NM_001304284 | c.C265A | p.H89N |
| 183 | LUNG | <i>USP43</i> | 17 | 9615329 | 9615329 | G | C | nonsynonymous | NM_153210 | c.G2215C | p.G739R |
| 183 | LUNG | <i>NBR1</i> | 17 | 41345635 | 41345635 | G | T | nonsynonymous | NM_031862 | c.G1504T | p.D502Y |
| 183 | LUNG | <i>MADCAM1</i> | 19 | 501786 | 501786 | C | A | nonsynonymous | NM_130760 | c.C785A | p.P262Q |
| 183 | LUNG | <i>KRTAP10-6</i> | 21 | 46012181 | 46012181 | C | T | nonsynonymous | NM_198688 | c.G185A | p.R62H |
| 184 | LUNG | <i>TMEM254</i> | 10 | 81841421 | 81841421 | - | A | frameshift | NM_001270371 | c.114dupA | p.S38fs |
| 184 | LUNG | <i>TMEM183A</i> | 1 | 202976622 | 202976622 | G | T | nonsynonymous | NM_138391 | c.G29T | p.R10M |
| 184 | LUNG | <i>LRIG3</i> | 12 | 59268353 | 59268353 | T | G | nonsynonymous | NM_153377 | c.A2698C | p.T900P |
| 184 | LUNG | <i>CDC27</i> | 17 | 45234303 | 45234303 | G | C | nonsynonymous | NM_001256 | c.C818G | p.A273G |
| 184 | LUNG | <i>ARSD</i> | X | 2836041 | 2836041 | A | T | nonsynonymous | NM_001669 | c.T667A | p.F223I |
| 185 | LUNG | <i>SAALI</i> | 11 | 18127558 | 18127558 | - | CGG | nonframeshift | NM_138421 | c.30_31insCCG | p.G11delinsPG |

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|-----|------|----------------|----|-----------|-----------|---|-----|---------------|--------------|---------------|---------------|
| 185 | LUNG | <i>NPHP4</i> | 1 | 5926503 | 5926503 | G | A | nonsynonymous | NM_015102 | c.C3574T | p.R1192W |
| 185 | LUNG | <i>TMEM131</i> | 2 | 98449839 | 98449839 | C | A | nonsynonymous | NM_015348 | c.G1063T | p.V355L |
| 185 | LUNG | <i>SKIV2L2</i> | 5 | 54674967 | 54674967 | G | A | nonsynonymous | NM_015360 | c.G1996A | p.G666R |
| 185 | LUNG | <i>HLA-C</i> | 6 | 31238909 | 31238909 | G | A | nonsynonymous | NM_002117 | c.C560T | p.T187M |
| 185 | LUNG | <i>TCP10L2</i> | 6 | 167595300 | 167595300 | C | T | stopgain | NM_001145121 | c.C958T | p.R320X |
| 185 | LUNG | <i>ELN</i> | 7 | 73471717 | 73471717 | G | A | nonsynonymous | NM_001278939 | c.G1363A | p.A455T |
| 185 | LUNG | <i>CLCN1</i> | 7 | 143039510 | 143039510 | G | C | nonsynonymous | NM_000083 | c.G1842C | p.K614N |
| 185 | LUNG | <i>LRRC56</i> | 11 | 553971 | 553971 | G | A | nonsynonymous | NM_198075 | c.G1324A | p.G442R |
| 185 | LUNG | <i>SAA2</i> | 11 | 18267463 | 18267463 | A | G | nonsynonymous | NM_001127380 | c.T224C | p.V75A |
| 185 | LUNG | <i>SAA2</i> | 11 | 18267478 | 18267478 | G | A | nonsynonymous | NM_001127380 | c.C209T | p.A70V |
| 185 | LUNG | <i>BCL9L</i> | 11 | 118771838 | 118771838 | G | A | nonsynonymous | NM_182557 | c.C2614T | p.P872S |
| 185 | LUNG | <i>CYB5D1</i> | 17 | 7762859 | 7762859 | C | T | nonsynonymous | NM_144607 | c.C616T | p.L206F |
| 185 | LUNG | <i>ROCK1</i> | 18 | 18534948 | 18534948 | G | C | nonsynonymous | NM_005406 | c.C3649G | p.Q1217E |
| 186 | LUNG | <i>LTF</i> | 3 | 46501284 | 46501284 | - | CTT | nonframeshift | NM_002343 | c.68_69insAAG | p.R23delinsRR |
| 186 | LUNG | <i>ZRANB1</i> | 10 | 126673560 | 126673560 | - | A | frameshift | NM_017580 | c.2127dupA | p.X709delinsX |
| 186 | LUNG | <i>AZIN2</i> | 1 | 33562384 | 33562384 | G | A | nonsynonymous | NM_052998 | c.G830A | p.G277E |
| 186 | LUNG | <i>SLFN1</i> | 1 | 41483578 | 41483578 | C | G | nonsynonymous | NM_144990 | c.G686C | p.R229P |
| 186 | LUNG | <i>ADGRL2</i> | 1 | 82434902 | 82434902 | C | A | nonsynonymous | NM_012302 | c.C2513A | p.T838N |
| 186 | LUNG | <i>XIRP1</i> | 3 | 39229196 | 39229196 | G | T | nonsynonymous | NM_194293 | c.C1741A | p.P581T |
| 186 | LUNG | <i>GNAI2</i> | 3 | 50289947 | 50289947 | G | A | nonsynonymous | NM_002070 | c.G280A | p.D94N |
| 186 | LUNG | <i>FAM53A</i> | 4 | 1656850 | 1656850 | G | A | nonsynonymous | NM_001174070 | c.C737T | p.T246M |
| 186 | LUNG | <i>TBC1D1</i> | 4 | 37904014 | 37904014 | C | T | nonsynonymous | NM_015173 | c.C298T | p.R100C |
| 186 | LUNG | <i>SPARC</i> | 5 | 151052711 | 151052711 | C | T | nonsynonymous | NM_003118 | c.G187A | p.E63K |
| 186 | LUNG | <i>PLEKHG1</i> | 6 | 151152250 | 151152250 | A | G | nonsynonymous | NM_001029884 | c.A2003G | p.D668G |
| 186 | LUNG | <i>SLC22A1</i> | 6 | 160564616 | 160564616 | G | A | nonsynonymous | NM_003057 | c.G1320A | p.M440I |

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|-----|------|-----------------|----|-----------|-----------|--|---|---------------|--------------|--------------|------------|
| 186 | LUNG | <i>PPP1R42</i> | 8 | 67922949 | 67922949 | C | T | splicing | NM_001013626 | c.552+1G>A | |
| 186 | LUNG | <i>NCOA2</i> | 8 | 71068718 | 71068718 | C | T | nonsynonymous | NM_006540 | c.G1882A | p.G628R |
| 186 | LUNG | <i>SLC24A2</i> | 9 | 19786015 | 19786015 | C | T | nonsynonymous | NM_020344 | c.G850A | p.V284I |
| 186 | LUNG | <i>KIF27</i> | 9 | 86474252 | 86474252 | C | T | nonsynonymous | NM_017576 | c.G2969A | p.R990H |
| 186 | LUNG | <i>CDH23</i> | 10 | 73492073 | 73492073 | C | T | nonsynonymous | NM_022124 | c.C4045T | p.R1349C |
| 186 | LUNG | <i>NRAP</i> | 10 | 115389517 | 115389517 | T | C | nonsynonymous | NM_198060 | c.A1870G | p.S624G |
| 186 | LUNG | <i>DZIP1</i> | 13 | 96242564 | 96242564 | A | C | nonsynonymous | NM_198968 | c.T1812G | p.C604W |
| 186 | LUNG | <i>ITGB2</i> | 21 | 46308800 | 46308800 | C | T | nonsynonymous | NM_000211 | c.G1888A | p.E630K |
| 187 | LUNG | <i>CAPN13</i> | 2 | 31000462 | 31000462 | C | A | nonsynonymous | NM_144575 | c.G242T | p.S81I |
| 187 | LUNG | <i>OBSL1</i> | 2 | 220419340 | 220419340 | G | A | stopgain | NM_015311 | c.C4732T | p.Q1578X |
| 188 | LUNG | <i>EXO1</i> | 1 | 242020734 | 242020734 | C | A | nonsynonymous | NM_130398 | c.C493A | p.Q165K |
| 188 | LUNG | <i>AUP1</i> | 2 | 74756514 | 74756514 | C | T | nonsynonymous | NM_181575 | c.G163A | p.A55T |
| 188 | LUNG | <i>ZNF706</i> | 8 | 102213962 | 102213962 | C | G | nonsynonymous | NM_016096 | c.G8C | p.R3P |
| 188 | LUNG | <i>MUC5B</i> | 11 | 1253976 | 1253976 | A | G | nonsynonymous | NM_002458 | c.A2041G | p.S681G |
| 188 | LUNG | <i>PARP4</i> | 13 | 25021323 | 25021323 | A | G | nonsynonymous | NM_006437 | c.T3116C | p.I1039T |
| 188 | LUNG | <i>CCNA1</i> | 13 | 37012866 | 37012866 | T | G | nonsynonymous | NM_003914 | c.T755G | p.V252G |
| 188 | LUNG | <i>L2HGDH</i> | 14 | 50750699 | 50750699 | A | C | nonsynonymous | NM_024884 | c.T593G | p.V198G |
| 188 | LUNG | <i>IGDCC4</i> | 15 | 65678318 | 65678318 | T | G | nonsynonymous | NM_020962 | c.A3031C | p.S1011R |
| 188 | LUNG | <i>MYLK3</i> | 16 | 46744689 | 46744689 | C | A | nonsynonymous | NM_182493 | c.G2127T | p.L709F |
| 188 | LUNG | <i>PNKP</i> | 19 | 50370425 | 50370425 | C | G | nonsynonymous | NM_007254 | c.G37C | p.E13Q |
| 188 | LUNG | <i>NCF4</i> | 22 | 37260160 | 37260160 | A | C | nonsynonymous | NM_000631 | c.A106C | p.T36P |
| 18 | LUNG | <i>KRTAP5-5</i> | 11 | 1651199 | 1651228 | AGGCTGTG GGGGCTGT GGCTCCGG CTGTGC | - | nonframeshift | NM_001001480 | c.129_158del | p.43_53del |

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|-----|------|-----------------|----|-----------|-----------|---------------|-------------------------|---------------|--------------|---------------------------------|-----------------------|
| 18 | LUNG | <i>WDR66</i> | 12 | 122359397 | 122359397 | - | GAGGAGG AGGAGAA A | nonframeshift | NM_144668 | c.186_187insGAGGA GGAGGAGAAA | p.G62delinsGEEE EK |
| 18 | LUNG | <i>ARHGEF10</i> | 8 | 1846672 | 1846672 | A | T | nonsynonymous | NM_014629 | c.A1631T | p.Q544L |
| 18 | LUNG | <i>ANKRD30B</i> | 18 | 14779986 | 14779986 | G | A | nonsynonymous | NM_001145029 | c.G1448A | p.R483Q |
| 18 | LUNG | <i>ANKRD30B</i> | 18 | 14780019 | 14780019 | G | T | nonsynonymous | NM_001145029 | c.G1481T | p.G494V |
| 19 | LUNG | <i>KIFC3</i> | 16 | 57828999 | 57829007 | GCACTTCG G | - | nonframeshift | NM_005550 | c.219_227del | p.73_76del |
| 19 | LUNG | <i>ZNF683</i> | 1 | 26688146 | 26688146 | T | G | nonsynonymous | NM_001114759 | c.A1511C | p.N504T |
| 19 | LUNG | <i>FBLN2</i> | 3 | 13660506 | 13660506 | A | G | nonsynonymous | NM_001998 | c.A2042G | p.N681S |
| 19 | LUNG | <i>REV3L</i> | 6 | 111804066 | 111804066 | G | A | nonsynonymous | NM_002912 | c.C26T | p.A9V |
| 19 | LUNG | <i>RASA4</i> | 7 | 102246410 | 102246410 | G | A | nonsynonymous | NM_006989 | c.C323T | p.T108M |
| 19 | LUNG | <i>LDLRAD3</i> | 11 | 36248640 | 36248640 | G | A | nonsynonymous | NM_174902 | c.G460A | p.G154S |
| 19 | LUNG | <i>FAM177A1</i> | 14 | 35515746 | 35515746 | A | G | nonsynonymous | NM_001289022 | c.A8G | p.Q3R |
| 19 | LUNG | <i>PLCB1</i> | 20 | 8665719 | 8665719 | C | T | nonsynonymous | NM_015192 | c.C1003T | p.L335F |
| 19 | LUNG | <i>URB1</i> | 21 | 33694866 | 33694866 | G | T | nonsynonymous | NM_014825 | c.C5262A | p.N1754K |
| 19 | LUNG | <i>PI4KA</i> | 22 | 21083653 | 21083653 | C | T | nonsynonymous | NM_058004 | c.G4630A | p.V1544M |
| 194 | LUNG | <i>ADAMTS14</i> | 10 | 72513648 | 72513648 | A | G | nonsynonymous | NM_080722 | c.A2822G | p.N941S |
| 194 | LUNG | <i>MYO1F</i> | 19 | 8587708 | 8587708 | C | A | nonsynonymous | NM_012335 | c.G2860T | p.D954Y |
| 199 | LUNG | <i>HDGFL1</i> | 6 | 22570122 | 22570127 | GCCGGA | - | nonframeshift | NM_138574 | c.318_323del | p.106_108del |
| 199 | LUNG | <i>TTC39A</i> | 1 | 51756292 | 51756292 | C | A | nonsynonymous | NM_001297665 | c.G1380T | p.M460I |
| 199 | LUNG | <i>TAS2R43</i> | 12 | 11244687 | 11244687 | G | C | nonsynonymous | NM_176884 | c.C142G | p.L48V |
| 1 | LUNG | <i>RALY</i> | 20 | 32664864 | 32664864 | - | CAG | nonframeshift | NM_016732 | c.689_690insCAG | p.A230delinsAS |
| 1 | LUNG | <i>ATAD3A</i> | 1 | 1469429 | 1469429 | G | T | nonsynonymous | NM_018188 | c.G1882T | p.G628W |
| 1 | LUNG | <i>ALS2CR11</i> | 2 | 202358162 | 202358162 | C | A | stopgain | NM_001168221 | c.G2902T | p.G968X |

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|-----|------|-----------------|----|-----------|-----------|-------------------------------|---|---------------|--------------|----------------|----------------|
| 1 | LUNG | <i>ARL13B</i> | 3 | 93769674 | 93769674 | G | T | nonsynonymous | NM_001174150 | c.G1148T | p.W383L |
| 1 | LUNG | <i>MUC4</i> | 3 | 195508500 | 195508500 | G | C | nonsynonymous | NM_018406 | c.C9951G | p.D3317E |
| 1 | LUNG | <i>FGFR4</i> | 5 | 176519325 | 176519325 | G | T | nonsynonymous | NM_002011 | c.G731T | p.R244L |
| 1 | LUNG | <i>HLA-C</i> | 6 | 31238909 | 31238909 | G | A | nonsynonymous | NM_002117 | c.C560T | p.T187M |
| 1 | LUNG | <i>HLA-DRB1</i> | 6 | 32549611 | 32549611 | T | A | nonsynonymous | NM_002124 | c.A375T | p.Q125H |
| 1 | LUNG | <i>HLA-DRB1</i> | 6 | 32557506 | 32557506 | T | C | nonsynonymous | NM_002124 | c.A14G | p.K5R |
| 1 | LUNG | <i>HLA-DQB1</i> | 6 | 32629935 | 32629935 | C | G | nonsynonymous | NM_001243961 | c.G470C | p.G157A |
| 1 | LUNG | <i>TECPRI</i> | 7 | 97860378 | 97860378 | G | T | nonsynonymous | NM_015395 | c.C2177A | p.P726Q |
| 1 | LUNG | <i>HR</i> | 8 | 21980022 | 21980022 | C | A | nonsynonymous | NM_005144 | c.G2105T | p.G702V |
| 1 | LUNG | <i>PLEC</i> | 8 | 144992676 | 144992676 | G | T | stopgain | NM_201380 | c.C11724A | p.Y3908X |
| 1 | LUNG | <i>SVEP1</i> | 9 | 113191472 | 113191472 | C | A | nonsynonymous | NM_153366 | c.G5758T | p.G1920W |
| 1 | LUNG | <i>ZNF629</i> | 16 | 30793721 | 30793721 | G | T | nonsynonymous | NM_001080417 | c.C1928A | p.P643Q |
| 1 | LUNG | <i>C16orf58</i> | 16 | 31508173 | 31508173 | G | T | nonsynonymous | NM_022744 | c.C699A | p.S233R |
| 200 | LUNG | <i>CHD3</i> | 17 | 7796803 | 7796803 | T | C | nonsynonymous | NM_001005273 | c.T709C | p.S237P |
| 200 | LUNG | <i>ARSD</i> | X | 2836041 | 2836041 | A | T | nonsynonymous | NM_001669 | c.T667A | p.F223I |
| 201 | LUNG | <i>CNTD2</i> | 19 | 40730639 | 40730639 | A | C | nonsynonymous | NM_024877 | c.T347G | p.V116G |
| 203 | LUNG | <i>POLR3F</i> | 20 | 18464194 | 18464194 | G | C | nonsynonymous | NM_006466 | c.G943C | p.E315Q |
| 205 | LUNG | <i>CDH23</i> | 10 | 73437370 | 73437370 | G | A | nonsynonymous | NM_022124 | c.G1672A | p.V558M |
| 206 | LUNG | <i>SLC34A1</i> | 5 | 176813233 | 176813253 | GTCCCCAA GCTGCGCC AGGCT | - | nonframeshift | NM_003052 | c.271_291del | p.91_97del |
| 206 | LUNG | <i>CUL9</i> | 6 | 43174057 | 43174065 | AGGAGGAA G | - | frameshift | NM_015089 | c.5023_5029del | p.E1675fs |
| 206 | LUNG | <i>KAT6B</i> | 10 | 76788660 | 76788668 | GAAGAGGA A | - | nonframeshift | NM_012330 | c.4078_4086del | p.1360_1362del |

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|-----|------|-----------------|----|-----------|-----------|---|---|---------------|--------------|----------------|--------------|
| 206 | LUNG | <i>MFS D7</i> | 4 | 676617 | 676617 | G | A | nonsynonymous | NM_001294341 | c.C1217T | p.P406L |
| 206 | LUNG | <i>TAP1</i> | 6 | 32813531 | 32813531 | C | G | nonsynonymous | NM_000593 | c.G2252C | p.R751P |
| 206 | LUNG | <i>KMT2C</i> | 7 | 151945007 | 151945007 | C | T | nonsynonymous | NM_170606 | c.G2512A | p.G838S |
| 206 | LUNG | <i>P4HA1</i> | 10 | 74790090 | 74790090 | C | T | nonsynonymous | NM_000917 | c.G1187A | p.R396Q |
| 206 | LUNG | <i>ARSD</i> | X | 2836211 | 2836211 | A | T | nonsynonymous | NM_001669 | c.T497A | p.L166Q |
| 20 | LUNG | <i>IRF5</i> | 7 | 128587352 | 128587381 | ACTCTGCA GCCGCCA CTCTGCGG CCGCCT | - | nonframeshift | NM_001098630 | c.502_531del | p.168_177del |
| 20 | LUNG | <i>KRTAP5-5</i> | 11 | 1651191 | 1651199 | GGCTGTGG A | - | nonframeshift | NM_001001480 | c.121_129del | p.41_43del |
| 20 | LUNG | <i>ITM2C</i> | 2 | 231729802 | 231729802 | C | T | nonsynonymous | NM_001287241 | c.C62T | p.A21V |
| 20 | LUNG | <i>LRRC43</i> | 12 | 122685163 | 122685163 | A | G | nonsynonymous | NM_001098519 | c.A1576G | p.K526E |
| 20 | LUNG | <i>LRRC43</i> | 12 | 122685164 | 122685164 | A | G | nonsynonymous | NM_001098519 | c.A1577G | p.K526R |
| 21 | LUNG | <i>MAP3K1</i> | 5 | 56177849 | 56177851 | CAA | - | nonframeshift | NM_005921 | c.2822_2824del | p.941_942del |
| 21 | LUNG | <i>RFPL1</i> | 22 | 29837567 | 29837569 | TCC | - | nonframeshift | NM_021026 | c.410_412del | p.137_138del |
| 21 | LUNG | <i>MAST2</i> | 1 | 46500579 | 46500579 | C | G | nonsynonymous | NM_015112 | c.C4238G | p.A1413G |
| 21 | LUNG | <i>WNT10A</i> | 2 | 219754822 | 219754822 | G | A | nonsynonymous | NM_025216 | c.G493A | p.G165R |
| 21 | LUNG | <i>SPEG</i> | 2 | 220337690 | 220337690 | G | A | nonsynonymous | NM_005876 | c.G4019A | p.R1340Q |
| 21 | LUNG | <i>SEC13</i> | 3 | 10353520 | 10353520 | C | G | nonsynonymous | NM_001278946 | c.G579C | p.Q193H |
| 21 | LUNG | <i>MCF2L2</i> | 3 | 182910859 | 182910859 | G | A | nonsynonymous | NM_015078 | c.C2944T | p.P982S |
| 21 | LUNG | <i>SHROOM3</i> | 4 | 77691999 | 77691999 | G | A | nonsynonymous | NM_020859 | c.G5570A | p.R1857H |
| 21 | LUNG | <i>DDIT4L</i> | 4 | 101108934 | 101108934 | G | A | nonsynonymous | NM_145244 | c.C482T | p.S161F |
| 21 | LUNG | <i>TENM3</i> | 4 | 183675845 | 183675845 | C | T | nonsynonymous | NM_001080477 | c.C4325T | p.A1442V |
| 21 | LUNG | <i>HMMR</i> | 5 | 162909667 | 162909667 | A | G | nonsynonymous | NM_012484 | c.A1402G | p.S468G |

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|----|------|----------------|----|-----------|-----------|---|---|---------------|--------------|------------|----------|
| 21 | LUNG | <i>NRG1</i> | 8 | 32617888 | 32617888 | C | G | nonsynonymous | NM_013964 | c.C1232G | p.T411S |
| 21 | LUNG | <i>PTCH1</i> | 9 | 98209631 | 98209631 | G | A | nonsynonymous | NM_000264 | c.C3907T | p.R1303C |
| 21 | LUNG | <i>CNTRL</i> | 9 | 123850687 | 123850687 | C | G | nonsynonymous | NM_007018 | c.C83G | p.S28C |
| 21 | LUNG | <i>TACC2</i> | 10 | 123976242 | 123976242 | C | T | nonsynonymous | NM_206862 | c.C7445T | p.T2482M |
| 21 | LUNG | <i>PTPMT1</i> | 11 | 47591376 | 47591376 | G | A | nonsynonymous | NM_175732 | c.G380A | p.C127Y |
| 21 | LUNG | <i>CYSLTR2</i> | 13 | 49281785 | 49281785 | T | A | nonsynonymous | NM_020377 | c.T832A | p.L278I |
| 21 | LUNG | <i>PLD2</i> | 17 | 4717717 | 4717717 | G | T | nonsynonymous | NM_002663 | c.G1015T | p.V339L |
| 21 | LUNG | <i>CTC1</i> | 17 | 8141449 | 8141449 | C | T | nonsynonymous | NM_025099 | c.G547A | p.D183N |
| 21 | LUNG | <i>ELAC2</i> | 17 | 12896254 | 12896254 | G | A | nonsynonymous | NM_018127 | c.C2362T | p.R788W |
| 21 | LUNG | <i>FBXW10</i> | 17 | 18647663 | 18647663 | T | C | nonsynonymous | NM_001267585 | c.T106C | p.W36R |
| 21 | LUNG | <i>CYP2A13</i> | 19 | 41595958 | 41595958 | C | T | nonsynonymous | NM_000766 | c.C350T | p.A117V |
| 21 | LUNG | <i>NDUFV3</i> | 21 | 44317156 | 44317156 | A | C | nonsynonymous | NM_001001503 | c.A168C | p.K56N |
| 21 | LUNG | <i>MCM5</i> | 22 | 35802567 | 35802567 | G | C | nonsynonymous | NM_006739 | c.G445C | p.V149L |
| 21 | LUNG | <i>GTPBP1</i> | 22 | 39125549 | 39125549 | C | T | nonsynonymous | NM_004286 | c.C1799T | p.T600M |
| 21 | LUNG | <i>CYB5R3</i> | 22 | 43023381 | 43023381 | G | C | nonsynonymous | NM_000398 | c.C562G | p.L188V |
| 21 | LUNG | <i>SAMM50</i> | 22 | 44360335 | 44360335 | G | A | nonsynonymous | NM_015380 | c.G136A | p.V46I |
| 21 | LUNG | <i>ARSD</i> | X | 2836184 | 2836184 | C | T | nonsynonymous | NM_001669 | c.G524A | p.G175D |
| 21 | LUNG | <i>ARSD</i> | X | 2836238 | 2836238 | G | A | nonsynonymous | NM_001669 | c.C470T | p.S157F |
| 21 | LUNG | <i>SHROOM2</i> | X | 9907245 | 9907245 | C | A | nonsynonymous | NM_001649 | c.C4150A | p.P1384T |
| 22 | LUNG | <i>ZNF717</i> | 3 | 75786895 | 75786895 | T | - | frameshift | NM_001128223 | c.1879delA | p.T627fs |
| 22 | LUNG | <i>PRKCZ</i> | 1 | 2066742 | 2066742 | T | G | nonsynonymous | NM_001242874 | c.T64G | p.Y22D |
| 22 | LUNG | <i>ATXN7L2</i> | 1 | 110031500 | 110031500 | A | T | nonsynonymous | NM_153340 | c.A815T | p.Q272L |
| 22 | LUNG | <i>LEFTY2</i> | 1 | 226125341 | 226125341 | G | A | nonsynonymous | NM_003240 | c.C901T | p.P301S |
| 22 | LUNG | <i>THADA</i> | 2 | 43458338 | 43458338 | G | A | nonsynonymous | NM_001083953 | c.C5611T | p.L1871F |
| 22 | LUNG | <i>ZNF80</i> | 3 | 113955593 | 113955593 | C | T | nonsynonymous | NM_007136 | c.G329A | p.C110Y |

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|-----|------|-----------------|----|-----------|-----------|---|---|---------------|--------------|-----------|----------|
| 22 | LUNG | <i>ADGRL3</i> | 4 | 62800630 | 62800630 | G | A | nonsynonymous | NM_015236 | c.G1981A | p.D661N |
| 22 | LUNG | <i>NME5</i> | 5 | 137474402 | 137474402 | A | C | nonsynonymous | NM_003551 | c.T68G | p.I23S |
| 22 | LUNG | <i>HLA-DQB2</i> | 6 | 32725559 | 32725559 | C | T | nonsynonymous | NM_001300790 | c.G748A | p.G250S |
| 22 | LUNG | <i>EPHA1</i> | 7 | 143088803 | 143088803 | C | T | stopgain | NM_005232 | c.G2762A | p.W921X |
| 22 | LUNG | <i>MUC5B</i> | 11 | 1264736 | 1264736 | C | T | nonsynonymous | NM_002458 | c.C6626T | p.T2209M |
| 22 | LUNG | <i>RCOR2</i> | 11 | 63681631 | 63681631 | G | A | nonsynonymous | NM_173587 | c.C686T | p.S229F |
| 22 | LUNG | <i>TNFRSF19</i> | 13 | 24200877 | 24200877 | C | T | stopgain | NM_018647 | c.C391T | p.Q131X |
| 22 | LUNG | <i>VSX2</i> | 14 | 74726438 | 74726438 | A | T | nonsynonymous | NM_182894 | c.A713T | p.K238M |
| 22 | LUNG | <i>ALDH3A1</i> | 17 | 19643690 | 19643690 | A | C | nonsynonymous | NM_001135168 | c.T908G | p.V303G |
| 22 | LUNG | <i>ACSSI</i> | 20 | 24995843 | 24995843 | C | A | nonsynonymous | NM_001252675 | c.G1270T | p.A424S |
| 22 | LUNG | <i>DRP2</i> | X | 100509451 | 100509451 | C | T | nonsynonymous | NM_001939 | c.C2015T | p.T672I |
| 22 | LUNG | <i>PNCK</i> | X | 152936552 | 152936552 | C | T | stopgain | NM_001039582 | c.G957A | p.W319X |
| 227 | LUNG | <i>ANKRD36</i> | 2 | 97823845 | 97823845 | A | C | nonsynonymous | NM_001164315 | c.A1262C | p.N421T |
| 227 | LUNG | <i>KLHL40</i> | 3 | 42727198 | 42727198 | G | A | nonsynonymous | NM_152393 | c.G88A | p.G30S |
| 227 | LUNG | <i>IL6ST</i> | 5 | 55237432 | 55237432 | A | C | nonsynonymous | NM_002184 | c.T2235G | p.D745E |
| 227 | LUNG | <i>ADGRV1</i> | 5 | 90119376 | 90119376 | C | A | nonsynonymous | NM_032119 | c.C16331A | p.T5444K |
| 227 | LUNG | <i>TMEM232</i> | 5 | 109904158 | 109904158 | T | C | nonsynonymous | NM_001039763 | c.A1445G | p.N482S |
| 227 | LUNG | <i>SLC25A2</i> | 5 | 140683377 | 140683377 | C | T | nonsynonymous | NM_031947 | c.G56A | p.G19E |
| 227 | LUNG | <i>ZNF705G</i> | 8 | 7218632 | 7218632 | C | T | nonsynonymous | NM_001164457 | c.G139A | p.G47R |
| 227 | LUNG | <i>DCAF13</i> | 8 | 104427354 | 104427354 | C | T | nonsynonymous | NM_015420 | c.C136T | p.H46Y |
| 227 | LUNG | <i>C9orf173</i> | 9 | 140146560 | 140146560 | A | G | nonsynonymous | NM_001004353 | c.A376G | p.S126G |
| 227 | LUNG | <i>GRM5</i> | 11 | 88300512 | 88300512 | G | A | nonsynonymous | NM_001143831 | c.C2339T | p.T780M |
| 227 | LUNG | <i>SLC27A2</i> | 15 | 50521200 | 50521200 | T | A | nonsynonymous | NM_003645 | c.T1516A | p.F506I |
| 227 | LUNG | <i>PLD2</i> | 17 | 4726143 | 4726143 | T | G | nonsynonymous | NM_002663 | c.T2786G | p.L929R |
| 227 | LUNG | <i>KCNJ18</i> | 17 | 21319079 | 21319079 | C | A | nonsynonymous | NM_021012 | c.C425A | p.T142N |

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|-----|------|-----------------|----|-----------|-----------|-----|---|---------------|--------------|----------------|--------------|
| 227 | LUNG | <i>WNK4</i> | 17 | 40948543 | 40948543 | C | A | nonsynonymous | NM_032387 | c.C3676A | p.Q1226K |
| 227 | LUNG | <i>ITGA2B</i> | 17 | 42453538 | 42453538 | G | T | nonsynonymous | NM_000419 | c.C2363A | p.A788D |
| 227 | LUNG | <i>COG1</i> | 17 | 71196139 | 71196139 | C | T | nonsynonymous | NM_018714 | c.C1049T | p.T350M |
| 227 | LUNG | <i>POTEC</i> | 18 | 14543027 | 14543027 | T | G | nonsynonymous | NM_001137671 | c.A119C | p.K40T |
| 227 | LUNG | <i>FBN3</i> | 19 | 8188389 | 8188389 | G | A | nonsynonymous | NM_032447 | c.C3041T | p.A1014V |
| 227 | LUNG | <i>MRII</i> | 19 | 13883092 | 13883092 | G | T | nonsynonymous | NM_001031727 | c.G1107T | p.M369I |
| 227 | LUNG | <i>PMM1</i> | 22 | 41973390 | 41973390 | C | T | nonsynonymous | NM_002676 | c.G721A | p.V241M |
| 228 | LUNG | <i>NADK</i> | 1 | 1684348 | 1684350 | CCT | - | nonframeshift | NM_023018 | c.1334_1336del | p.445_446del |
| 228 | LUNG | <i>ADAMTSL1</i> | 9 | 18680349 | 18680349 | - | G | frameshift | NM_001040272 | c.1177dupG | p.C392fs |
| 228 | LUNG | <i>PLIN1</i> | 15 | 90210867 | 90210869 | TCC | - | nonframeshift | NM_002666 | c.927_929del | p.309_310del |
| 228 | LUNG | <i>GNAZ</i> | 22 | 23438487 | 23438487 | - | G | frameshift | NM_002073 | c.606dupG | p.V202fs |
| 228 | LUNG | <i>SPECCIL</i> | 22 | 24724821 | 24724821 | - | A | frameshift | NM_015330 | c.2155dupA | p.V718fs |
| 228 | LUNG | <i>AHDC1</i> | 1 | 27874771 | 27874771 | G | A | nonsynonymous | NM_001029882 | c.C3856T | p.R1286W |
| 228 | LUNG | <i>AHDC1</i> | 1 | 27876685 | 27876685 | G | A | stopgain | NM_001029882 | c.C1942T | p.Q648X |
| 228 | LUNG | <i>SHCBP1L</i> | 1 | 182873332 | 182873332 | C | T | nonsynonymous | NM_030933 | c.G1570A | p.E524K |
| 228 | LUNG | <i>PLXNA2</i> | 1 | 208211807 | 208211807 | C | T | nonsynonymous | NM_025179 | c.G4673A | p.G1558D |
| 228 | LUNG | <i>TRIM17</i> | 1 | 228601548 | 228601548 | T | A | nonsynonymous | NM_016102 | c.A475T | p.R159W |
| 228 | LUNG | <i>URB2</i> | 1 | 229771521 | 229771521 | C | A | nonsynonymous | NM_014777 | c.C1161A | p.F387L |
| 228 | LUNG | <i>ZNF513</i> | 2 | 27600767 | 27600767 | G | T | nonsynonymous | NM_144631 | c.C1271A | p.A424D |
| 228 | LUNG | <i>CREG2</i> | 2 | 102000122 | 102000122 | C | T | nonsynonymous | NM_153836 | c.G484A | p.G162S |
| 228 | LUNG | <i>OLA1</i> | 2 | 174943775 | 174943775 | T | A | nonsynonymous | NM_013341 | c.A1010T | p.D337V |
| 228 | LUNG | <i>PDZRN3</i> | 3 | 73433943 | 73433943 | C | G | nonsynonymous | NM_015009 | c.G1774C | p.D592H |
| 228 | LUNG | <i>FBXL7</i> | 5 | 15936927 | 15936927 | T | C | nonsynonymous | NM_012304 | c.T1108C | p.Y370H |
| 228 | LUNG | <i>GCNT2</i> | 6 | 10626772 | 10626772 | G | C | nonsynonymous | NM_145649 | c.G1141C | p.E381Q |
| 228 | LUNG | <i>ZNF76</i> | 6 | 35260699 | 35260699 | C | T | nonsynonymous | NM_003427 | c.C1207T | p.R403W |

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|-----|------|-----------------|----|-----------|-----------|---|---|---------------|--------------|------------|----------|
| 228 | LUNG | <i>CSMD1</i> | 8 | 2836269 | 2836269 | G | A | stopgain | NM_033225 | c.C8431T | p.Q281IX |
| 228 | LUNG | <i>SLC35G5</i> | 8 | 11189132 | 11189132 | C | G | nonsynonymous | NM_054028 | c.C517G | p.L173V |
| 228 | LUNG | <i>COLEC10</i> | 8 | 120079617 | 120079617 | C | T | nonsynonymous | NM_006438 | c.C97T | p.R33C |
| 228 | LUNG | <i>HK1</i> | 10 | 71124563 | 71124563 | C | A | nonsynonymous | NM_000188 | c.C400A | p.L134M |
| 228 | LUNG | <i>SORBS1</i> | 10 | 97181950 | 97181950 | C | A | nonsynonymous | NM_001034954 | c.G325T | p.A109S |
| 228 | LUNG | <i>NLRP6</i> | 11 | 280963 | 280963 | G | A | nonsynonymous | NM_138329 | c.G1229A | p.R410H |
| 228 | LUNG | <i>DCHS1</i> | 11 | 6651077 | 6651077 | C | T | nonsynonymous | NM_003737 | c.G4861A | p.A1621T |
| 228 | LUNG | <i>MRVII</i> | 11 | 10651252 | 10651252 | G | A | nonsynonymous | NM_001098579 | c.C380T | p.A127V |
| 228 | LUNG | <i>FADS2</i> | 11 | 61583806 | 61583806 | G | A | nonsynonymous | NM_001281501 | c.G49A | p.A17T |
| 228 | LUNG | <i>KIAA1551</i> | 12 | 32136150 | 32136150 | A | G | nonsynonymous | NM_018169 | c.A2261G | p.K754R |
| 228 | LUNG | <i>CS</i> | 12 | 56676232 | 56676232 | T | C | nonsynonymous | NM_004077 | c.A560G | p.Q187R |
| 228 | LUNG | <i>CS</i> | 12 | 56676244 | 56676244 | C | T | nonsynonymous | NM_004077 | c.G548A | p.R183Q |
| 228 | LUNG | <i>ATP2A3</i> | 17 | 3828697 | 3828697 | T | C | nonsynonymous | NM_174955 | c.A3107G | p.E1036G |
| 228 | LUNG | <i>BRCA1</i> | 17 | 41251791 | 41251791 | C | A | splicing | NM_007300 | c.547+1G>T | |
| 228 | LUNG | <i>SP2</i> | 17 | 46000475 | 46000475 | G | C | nonsynonymous | NM_003110 | c.G1207C | p.A403P |
| 228 | LUNG | <i>DOT1L</i> | 19 | 2210687 | 2210687 | G | A | nonsynonymous | NM_032482 | c.G1184A | p.R395H |
| 228 | LUNG | <i>CAPS</i> | 19 | 5914990 | 5914990 | G | A | nonsynonymous | NM_004058 | c.G301A | p.A101T |
| 228 | LUNG | <i>XAB2</i> | 19 | 7689210 | 7689210 | G | A | nonsynonymous | NM_020196 | c.C944T | p.S315L |
| 228 | LUNG | <i>SNRPA</i> | 19 | 41268820 | 41268820 | G | A | nonsynonymous | NM_004596 | c.G441A | p.M147I |
| 228 | LUNG | <i>PCBP3</i> | 21 | 47360048 | 47360048 | G | T | nonsynonymous | NM_020528 | c.G1014T | p.E338D |
| 228 | LUNG | <i>LZTR1</i> | 22 | 21349261 | 21349261 | C | T | nonsynonymous | NM_006767 | c.C1888T | p.R630W |
| 228 | LUNG | <i>GGT5</i> | 22 | 24640597 | 24640597 | G | A | stopgain | NM_004121 | c.C97T | p.Q33X |
| 228 | LUNG | <i>KDEL3</i> | 22 | 38875650 | 38875650 | T | C | nonsynonymous | NM_006855 | c.T245C | p.F82S |
| 228 | LUNG | <i>FBLN1</i> | 22 | 45944619 | 45944619 | G | A | nonsynonymous | NM_006486 | c.G1568A | p.C523Y |
| 228 | LUNG | <i>LRCH2</i> | X | 114347870 | 114347870 | A | G | nonsynonymous | NM_020871 | c.T2207C | p.L736S |

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|-----|------|-----------------|----|-----------|-----------|---------------|-----|---------------|--------------|----------------|---------------|
| 229 | LUNG | <i>MCC</i> | 5 | 112824048 | 112824048 | - | GCC | nonframeshift | NM_001085377 | c.63_64insGGC | p.S22delinsGS |
| 230 | LUNG | <i>VCX2</i> | X | 8138159 | 8138164 | CTTCCA | - | nonframeshift | NM_016378 | c.329_334del | p.110_112del |
| 230 | LUNG | <i>PTK7</i> | 6 | 43100365 | 43100365 | A | C | nonsynonymous | NM_002821 | c.A1168C | p.T390P |
| 230 | LUNG | <i>EDRF1</i> | 10 | 127422293 | 127422293 | G | T | nonsynonymous | NM_001202438 | c.G1366T | p.V456L |
| 230 | LUNG | <i>PNPLA2</i> | 11 | 823586 | 823586 | C | G | nonsynonymous | NM_020376 | c.C756G | p.N252K |
| 230 | LUNG | <i>KIF26A</i> | 14 | 104644142 | 104644142 | G | A | nonsynonymous | NM_015656 | c.G5017A | p.A1673T |
| 231 | LUNG | <i>OR52M1</i> | 11 | 4567360 | 4567368 | ATGAAGAT T | - | nonframeshift | NM_001004137 | c.940_948del | p.314_316del |
| 231 | LUNG | <i>ZNF717</i> | 3 | 75790860 | 75790860 | C | T | nonsynonymous | NM_001128223 | c.G85A | p.V29M |
| 231 | LUNG | <i>ZNF717</i> | 3 | 75790880 | 75790880 | A | G | nonsynonymous | NM_001128223 | c.T65C | p.V22A |
| 231 | LUNG | <i>PABPC1</i> | 8 | 101719004 | 101719004 | G | A | nonsynonymous | NM_002568 | c.C1477T | p.R493C |
| 231 | LUNG | <i>PPP1R13L</i> | 19 | 45899069 | 45899069 | C | A | nonsynonymous | NM_001142502 | c.G979T | p.G327C |
| 23 | LUNG | <i>NRL</i> | 14 | 24551834 | 24551834 | - | G | frameshift | NM_006177 | c.223dupC | p.L75fs |
| 232 | LUNG | <i>FGFRL1</i> | 4 | 1019055 | 1019056 | CA | - | frameshift | NM_001004358 | c.1435_1436del | p.H479fs |
| 23 | LUNG | <i>RASGRP3</i> | 2 | 33784006 | 33784006 | C | A | nonsynonymous | NM_001139488 | c.C1973A | p.P658H |
| 23 | LUNG | <i>ANKRD36</i> | 2 | 97818261 | 97818261 | G | T | nonsynonymous | NM_001164315 | c.G1183T | p.A395S |
| 23 | LUNG | <i>ANKRD36</i> | 2 | 97818262 | 97818262 | C | G | nonsynonymous | NM_001164315 | c.C1184G | p.A395G |
| 23 | LUNG | <i>TTN</i> | 2 | 179432826 | 179432826 | C | T | stopgain | NM_001267550 | c.G78033A | p.W26011X |
| 23 | LUNG | <i>NUP210</i> | 3 | 13421144 | 13421144 | G | A | nonsynonymous | NM_024923 | c.C895T | p.P299S |
| 23 | LUNG | <i>RADIL</i> | 7 | 4917535 | 4917535 | T | C | nonsynonymous | NM_018059 | c.A236G | p.K79R |
| 23 | LUNG | <i>ZNF12</i> | 7 | 6731332 | 6731332 | C | T | nonsynonymous | NM_016265 | c.G1241A | p.C414Y |
| 23 | LUNG | <i>VWA2</i> | 10 | 116045802 | 116045802 | C | T | nonsynonymous | NM_001272046 | c.C1102T | p.R368W |
| 23 | LUNG | <i>CUEDC1</i> | 17 | 55948674 | 55948674 | C | T | nonsynonymous | NM_001271875 | c.G841A | p.D281N |
| 233 | LUNG | <i>HRNR</i> | 1 | 152193390 | 152193390 | C | G | nonsynonymous | NM_001009931 | c.G715C | p.G239R |
| 233 | LUNG | <i>SP100</i> | 2 | 231311570 | 231311570 | A | G | nonsynonymous | NM_003113 | c.A476G | p.E159G |

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|-----|------|-----------------|----|-----------|-----------|--|----|---------------|--------------|--------------|----------|
| 233 | LUNG | <i>MCCC2</i> | 5 | 70900256 | 70900256 | C | G | nonsynonymous | NM_022132 | c.C585G | p.F195L |
| 233 | LUNG | <i>TRIM31</i> | 6 | 30078265 | 30078265 | A | G | nonsynonymous | NM_007028 | c.T704C | p.L235P |
| 233 | LUNG | <i>BCLAF1</i> | 6 | 136582417 | 136582417 | G | A | nonsynonymous | NM_014739 | c.C2743T | p.R915C |
| 233 | LUNG | <i>FRG2B</i> | 10 | 135438967 | 135438967 | C | T | nonsynonymous | NM_001080998 | c.G473A | p.R158Q |
| 233 | LUNG | <i>FRG2B</i> | 10 | 135440214 | 135440214 | G | C | nonsynonymous | NM_001080998 | c.C33G | p.H11Q |
| 233 | LUNG | <i>FRG2B</i> | 10 | 135440216 | 135440216 | G | A | nonsynonymous | NM_001080998 | c.C31T | p.H11Y |
| 233 | LUNG | <i>MUC6</i> | 11 | 1017381 | 1017381 | G | C | nonsynonymous | NM_005961 | c.C5420G | p.T1807S |
| 233 | LUNG | <i>KANSL1</i> | 17 | 44248837 | 44248837 | T | C | nonsynonymous | NM_001193466 | c.A673G | p.N225D |
| 233 | LUNG | <i>LRRC37A2</i> | 17 | 44626347 | 44626347 | T | C | nonsynonymous | NM_001006607 | c.T3842C | p.I1281T |
| 233 | LUNG | <i>ICT1</i> | 17 | 73017043 | 73017043 | G | A | nonsynonymous | NM_001303265 | c.G559A | p.E187K |
| 233 | LUNG | <i>SLC25A5</i> | X | 118603729 | 118603729 | G | A | nonsynonymous | NM_001152 | c.G217A | p.G73S |
| 234 | LUNG | <i>ZNF83</i> | 19 | 53116939 | 53116943 | CTCAT | - | frameshift | NM_001277946 | c.875_879del | p.N292fs |
| 235 | LUNG | <i>DAB2IP</i> | 9 | 124535526 | 124535526 | C | T | nonsynonymous | NM_138709 | c.C2347T | p.R783W |
| 235 | LUNG | <i>MIA2</i> | 14 | 39716830 | 39716830 | C | G | nonsynonymous | NM_054024 | c.C1052G | p.A351G |
| 236 | LUNG | <i>ANKRD36</i> | 2 | 97877478 | 97877478 | G | A | nonsynonymous | NM_001164315 | c.G3469A | p.V1157M |
| 237 | LUNG | <i>PRR21</i> | 2 | 240982117 | 240982144 | GTGGGTGA AGAGGCAT GGATGAAG GACT | - | frameshift | NM_001080835 | c.256_283del | p.S86fs |
| 237 | LUNG | <i>RECQL5</i> | 17 | 73626918 | 73626918 | - | TG | splicing | NM_004259 | c.1586-1->CA | |
| 237 | LUNG | <i>VCX2</i> | X | 8138165 | 8138168 | CCTC | - | frameshift | NM_016378 | c.325_328del | p.E109fs |
| 237 | LUNG | <i>MST1</i> | 3 | 49726070 | 49726070 | G | A | nonsynonymous | NM_020998 | c.C55T | p.P19S |
| 237 | LUNG | <i>GPSM1</i> | 9 | 139235370 | 139235370 | C | T | nonsynonymous | NM_001145638 | c.C1127T | p.A376V |
| 238 | LUNG | <i>WNK2</i> | 9 | 96051100 | 96051100 | C | T | nonsynonymous | NM_001282394 | c.C4175T | p.S1392L |
| 238 | LUNG | <i>PDPR</i> | 16 | 70182390 | 70182390 | T | G | nonsynonymous | NM_017990 | c.T1986G | p.N662K |

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|-----|------|-----------------|----|-----------|-----------|---|-------------------------------|---------------|--------------|---|------------------------|
| 239 | LUNG | <i>FAM90A1</i> | 12 | 8374781 | 8374781 | - | ACG | nonframeshift | NM_018088 | c.1031_1032insCGT | p.T344delinsTV |
| 240 | LUNG | <i>TRAK1</i> | 3 | 42251577 | 42251577 | - | GGA | nonframeshift | NM_014965 | c.1889_1890insGGA | p.T630delinsTE |
| 240 | LUNG | <i>TRAK1</i> | 3 | 42251577 | 42251577 | - | GGAGGA | nonframeshift | NM_014965 | c.1889_1890insGGA GGA | p.T630delinsTEE |
| 240 | LUNG | <i>KRTAP4-5</i> | 17 | 39305775 | 39305775 | - | GGCAGCA GCTGGGG C | nonframeshift | NM_033188 | c.244_245insGCCCC AGCTGCTGCC | p.Q82delinsRPSC CQ |
| 240 | LUNG | <i>KRTAP4-1</i> | 17 | 39340796 | 39340852 | CGGCAGCA GCTGGACA TACCACAG CTGGGGTG GCAGGTGG TCTGACAG CAGAGTGG G | - | nonframeshift | NM_033060 | c.246_254del | p.82_85del |
| 240 | LUNG | <i>CCDC40</i> | 17 | 78055455 | 78055455 | C | G | nonsynonymous | NM_017950 | c.C1673G | p.T558R |
| 240 | LUNG | <i>FASN</i> | 17 | 80049118 | 80049118 | G | A | nonsynonymous | NM_004104 | c.C1472T | p.P491L |
| 241 | LUNG | <i>KRTAP5-8</i> | 11 | 71249125 | 71249125 | - | GGCTGTG GCTCCGG CTGTGGG | nonframeshift | NM_021046 | c.24_25insGGCTGT GGCTCCGGCTGTG GG | p.G8delinsGGCG SGCG |
| 241 | LUNG | <i>OLFML2A</i> | 9 | 127561738 | 127561738 | A | C | nonsynonymous | NM_182487 | c.A637C | p.T213P |
| 241 | LUNG | <i>WDR37</i> | 10 | 1151170 | 1151170 | T | C | nonsynonymous | NM_014023 | c.T1066C | p.S356P |
| 241 | LUNG | <i>USP35</i> | 11 | 77920964 | 77920964 | C | T | nonsynonymous | NM_020798 | c.C2063T | p.T688M |
| 241 | LUNG | <i>GOLGA8M</i> | 15 | 28948511 | 28948511 | T | C | nonsynonymous | NM_001282468 | c.A1322G | p.Q441R |
| 242 | LUNG | <i>TFDP3</i> | X | 132351227 | 132351227 | - | C | frameshift | NM_016521 | c.1060_1061insG | p.S354fs |
| 242 | LUNG | <i>MST1L</i> | 1 | 17084968 | 17084968 | G | C | nonsynonymous | NM_001271733 | c.C1507G | p.R503G |

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|-----|------|-----------------|----|-----------|-----------|---|---|---------------|--------------|------------|----------|
| 242 | LUNG | <i>HSPD1</i> | 2 | 198363406 | 198363406 | C | T | nonsynonymous | NM_002156 | c.G167A | p.G56E |
| 242 | LUNG | <i>ZNF662</i> | 3 | 42956790 | 42956790 | C | T | nonsynonymous | NM_001134656 | c.C1303T | p.R435C |
| 242 | LUNG | <i>CNTNAP3B</i> | 9 | 43822686 | 43822686 | C | A | nonsynonymous | NM_001201380 | c.C1240A | p.R414S |
| 242 | LUNG | <i>PKD2LI</i> | 10 | 102056751 | 102056751 | G | C | nonsynonymous | NM_016112 | c.C1171G | p.L391V |
| 242 | LUNG | <i>EML3</i> | 11 | 62375744 | 62375744 | C | A | nonsynonymous | NM_153265 | c.G1135T | p.V379L |
| 242 | LUNG | <i>APAF1</i> | 12 | 99097265 | 99097265 | G | C | nonsynonymous | NM_181861 | c.G2583C | p.Q861H |
| 242 | LUNG | <i>LMO7</i> | 13 | 76382119 | 76382119 | C | T | nonsynonymous | NM_015842 | c.C1001T | p.S334F |
| 242 | LUNG | <i>CCNF</i> | 16 | 2487214 | 2487214 | G | T | nonsynonymous | NM_001761 | c.G431T | p.G144V |
| 242 | LUNG | <i>CDC27</i> | 17 | 45234303 | 45234303 | G | C | nonsynonymous | NM_001256 | c.C818G | p.A273G |
| 242 | LUNG | <i>CDC27</i> | 17 | 45249328 | 45249328 | G | A | nonsynonymous | NM_001256 | c.C206T | p.P69L |
| 242 | LUNG | <i>CDC27</i> | 17 | 45249335 | 45249335 | T | G | nonsynonymous | NM_001256 | c.A199C | p.T67P |
| 242 | LUNG | <i>PTGIS</i> | 20 | 48156133 | 48156133 | T | C | nonsynonymous | NM_000961 | c.A647G | p.K216R |
| 242 | LUNG | <i>PTGIS</i> | 20 | 48156140 | 48156140 | G | A | nonsynonymous | NM_000961 | c.C640T | p.L214F |
| 242 | LUNG | <i>ARSD</i> | X | 2835863 | 2835863 | G | T | nonsynonymous | NM_001669 | c.C845A | p.A282D |
| 242 | LUNG | <i>NLGN4X</i> | X | 5821239 | 5821239 | G | T | nonsynonymous | NM_001282145 | c.C1480A | p.P494T |
| 24 | LUNG | <i>PPP6R1</i> | 19 | 55748087 | 55748087 | - | C | frameshift | NM_014931 | c.1911dupG | p.S638fs |
| 24 | LUNG | <i>FRG1</i> | 4 | 190864371 | 190864371 | G | A | nonsynonymous | NM_004477 | c.G77A | p.S26N |
| 24 | LUNG | <i>PTPRN2</i> | 7 | 157926724 | 157926724 | C | T | nonsynonymous | NM_002847 | c.G1201A | p.G401S |
| 24 | LUNG | <i>CDC37LI</i> | 9 | 4679846 | 4679846 | G | C | nonsynonymous | NM_017913 | c.G79C | p.D27H |
| 24 | LUNG | <i>KDM4C</i> | 9 | 6986395 | 6986395 | A | G | nonsynonymous | NM_001304339 | c.A1406G | p.D469G |
| 24 | LUNG | <i>UQCC3</i> | 11 | 62439231 | 62439231 | G | A | nonsynonymous | NM_001085372 | c.G14A | p.R5Q |
| 24 | LUNG | <i>PRPF40B</i> | 12 | 50036031 | 50036031 | C | T | nonsynonymous | NM_001031698 | c.C1898T | p.A633V |
| 24 | LUNG | <i>TPT1</i> | 13 | 45913668 | 45913668 | T | A | nonsynonymous | NM_003295 | c.A363T | p.Q121H |
| 24 | LUNG | <i>ULK3</i> | 15 | 75134497 | 75134497 | C | T | nonsynonymous | NM_001099436 | c.G283A | p.A95T |
| 24 | LUNG | <i>USP6</i> | 17 | 5038569 | 5038569 | T | A | nonsynonymous | NM_001304284 | c.T535A | p.Y179N |

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|-----|------|----------------|----|-----------|-----------|--|-----|---------------|--------------|-------------------|----------------|
| 24 | LUNG | <i>ACTG1</i> | 17 | 79478570 | 79478570 | G | C | nonsynonymous | NM_001199954 | c.C446G | p.T149S |
| 24 | LUNG | <i>FBXL12</i> | 19 | 9922242 | 9922242 | A | G | nonsynonymous | NM_017703 | c.T311C | p.L104P |
| 24 | LUNG | <i>TMC2</i> | 20 | 2597716 | 2597716 | A | T | splicing | NM_080751 | c.1941-2A>T | |
| 243 | LUNG | <i>EPHB1</i> | 3 | 134644685 | 134644685 | C | A | nonsynonymous | NM_004441 | c.C86A | p.T29N |
| 243 | LUNG | <i>GAMT</i> | 19 | 1397413 | 1397413 | T | G | nonsynonymous | NM_000156 | c.A656C | p.D219A |
| 244 | LUNG | <i>SMPD1</i> | 11 | 6411931 | 6411942 | CTGGTGCT GGCG | - | nonframeshift | NM_000543 | c.103_114del | p.35_38del |
| 244 | LUNG | <i>MUC4</i> | 3 | 195505836 | 195505836 | G | C | nonsynonymous | NM_018406 | c.C12615G | p.H4205Q |
| 244 | LUNG | <i>PCDHGA8</i> | 5 | 140774131 | 140774131 | G | C | nonsynonymous | NM_032088 | c.G1751C | p.R584P |
| 244 | LUNG | <i>ZNF286A</i> | 17 | 15611546 | 15611546 | A | C | nonsynonymous | NM_001130842 | c.A319C | p.K107Q |
| 244 | LUNG | <i>ALDH3A2</i> | 17 | 19552312 | 19552312 | C | G | nonsynonymous | NM_001031806 | c.C28G | p.Q10E |
| 244 | LUNG | <i>ZNF814</i> | 19 | 58385748 | 58385748 | G | A | nonsynonymous | NM_001144989 | c.C1010T | p.A337V |
| 244 | LUNG | <i>ZNF544</i> | 19 | 58772262 | 58772262 | A | T | nonsynonymous | NM_014480 | c.A290T | p.D97V |
| 245 | LUNG | <i>PRR21</i> | 2 | 240982117 | 240982144 | GTGGGTGA AGAGGCAT GGATGAAG GACT | - | frameshift | NM_001080835 | c.256_283del | p.S86fs |
| 245 | LUNG | <i>EPN3</i> | 17 | 48618360 | 48618373 | CACAAACT CCCCAG | - | frameshift | NM_017957 | c.1186_1199del | p.H396fs |
| 246 | LUNG | <i>TUBGCP3</i> | 13 | 113201853 | 113201867 | TGGGAAAG TCGCGCG | - | nonframeshift | NM_001286279 | c.1235_1249del | p.412_417del |
| 246 | LUNG | <i>ZNF598</i> | 16 | 2049882 | 2049882 | - | TCC | nonframeshift | NM_178167 | c.1667_1668insGGA | p.D556delinsED |
| 246 | LUNG | <i>PLAC4</i> | 21 | 42551272 | 42551272 | C | - | frameshift | NM_182832 | c.284delG | p.G95fs |
| 246 | LUNG | <i>FLT4</i> | 5 | 180045911 | 180045911 | G | A | nonsynonymous | NM_182925 | c.C2860T | p.P954S |
| 246 | LUNG | <i>PLAC4</i> | 21 | 42551245 | 42551245 | A | G | nonsynonymous | NM_182832 | c.T311C | p.L104P |

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|-----|------|-----------------|----|-----------|-----------|-----|---|---------------|--------------|----------------|--------------|
| 247 | LUNG | <i>TRAK1</i> | 3 | 42251578 | 42251580 | GGA | - | nonframeshift | NM_014965 | c.1890_1892del | p.630_631del |
| 247 | LUNG | <i>GOLGA2</i> | 9 | 131020796 | 131020798 | CCT | - | nonframeshift | NM_004486 | c.2144_2146del | p.715_716del |
| 247 | LUNG | <i>OR4X1</i> | 11 | 48285982 | 48285984 | CTT | - | nonframeshift | NM_001004726 | c.570_572del | p.190_191del |
| 247 | LUNG | <i>CD3EAP</i> | 19 | 45912490 | 45912492 | AAG | - | nonframeshift | NM_012099 | c.1264_1266del | p.422_422del |
| 247 | LUNG | <i>ASMTL</i> | X | 1522164 | 1522164 | A | - | stoploss | NM_004192 | c.1864delT | p.X622E |
| 247 | LUNG | <i>SLC45A3</i> | 1 | 205628616 | 205628616 | C | T | nonsynonymous | NM_033102 | c.G1408A | p.V470I |
| 247 | LUNG | <i>HHAT</i> | 1 | 210761310 | 210761310 | C | T | nonsynonymous | NM_001170580 | c.C1112T | p.T371I |
| 247 | LUNG | <i>C1orf35</i> | 1 | 228290033 | 228290033 | T | C | nonsynonymous | NM_024319 | c.A425G | p.K142R |
| 247 | LUNG | <i>TFB2M</i> | 1 | 246729298 | 246729298 | G | A | nonsynonymous | NM_022366 | c.C143T | p.S48F |
| 247 | LUNG | <i>SULT6B1</i> | 2 | 37395103 | 37395103 | T | C | nonsynonymous | NM_001032377 | c.A773G | p.K258R |
| 247 | LUNG | <i>FCHO2</i> | 5 | 72302350 | 72302350 | G | A | nonsynonymous | NM_138782 | c.G574A | p.E192K |
| 247 | LUNG | <i>PCDHGB4</i> | 5 | 140767503 | 140767503 | T | G | nonsynonymous | NM_003736 | c.T52G | p.F18V |
| 247 | LUNG | <i>SOX30</i> | 5 | 157065343 | 157065343 | T | C | nonsynonymous | NM_178424 | c.A1775G | p.Y592C |
| 247 | LUNG | <i>SOX4</i> | 6 | 21595712 | 21595712 | C | T | nonsynonymous | NM_003107 | c.C947T | p.A316V |
| 247 | LUNG | <i>HLA-A</i> | 6 | 29911260 | 29911260 | A | C | nonsynonymous | NM_002116 | c.A559C | p.T187P |
| 247 | LUNG | <i>CDSN</i> | 6 | 31088145 | 31088145 | T | A | nonsynonymous | NM_001264 | c.A52T | p.M18L |
| 247 | LUNG | <i>HLA-DRB5</i> | 6 | 32497901 | 32497901 | C | T | splicing | NM_002125 | c.100+1G>A | |
| 247 | LUNG | <i>PNRC1</i> | 6 | 89790728 | 89790728 | C | T | nonsynonymous | NM_006813 | c.C115T | p.P39S |
| 247 | LUNG | <i>GLIS3</i> | 9 | 4118504 | 4118504 | G | T | nonsynonymous | NM_152629 | c.C509A | p.T170K |
| 247 | LUNG | <i>INSL6</i> | 9 | 5185335 | 5185335 | G | A | nonsynonymous | NM_007179 | c.C268T | p.R90W |
| 247 | LUNG | <i>AIF1L</i> | 9 | 133995650 | 133995650 | G | A | nonsynonymous | NM_031426 | c.G394A | p.E132K |
| 247 | LUNG | <i>SETX</i> | 9 | 135224757 | 135224757 | C | T | nonsynonymous | NM_015046 | c.G59A | p.R20H |
| 247 | LUNG | <i>LCN1</i> | 9 | 138415731 | 138415731 | G | C | nonsynonymous | NM_001252617 | c.G298C | p.G100R |
| 247 | LUNG | <i>TPRN</i> | 9 | 140093908 | 140093908 | G | A | nonsynonymous | NM_001128228 | c.C1256T | p.P419L |
| 247 | LUNG | <i>EXD3</i> | 9 | 140289766 | 140289766 | C | T | nonsynonymous | NM_017820 | c.G44A | p.R15H |

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|-----|------|-----------------|----|-----------|-----------|---|---|---------------|--------------|----------|----------|
| 247 | LUNG | <i>ARRDC1</i> | 9 | 140508536 | 140508536 | C | T | nonsynonymous | NM_152285 | c.C488T | p.T163M |
| 247 | LUNG | <i>RPS3</i> | 11 | 75115875 | 75115875 | C | A | nonsynonymous | NM_001005 | c.C698A | p.P233Q |
| 247 | LUNG | <i>POLR3B</i> | 12 | 106820975 | 106820975 | C | T | nonsynonymous | NM_001160708 | c.C928T | p.L310F |
| 247 | LUNG | <i>EML5</i> | 14 | 89258753 | 89258753 | G | A | nonsynonymous | NM_183387 | c.C95T | p.A32V |
| 247 | LUNG | <i>NCOR1</i> | 17 | 15942948 | 15942948 | G | A | nonsynonymous | NM_006311 | c.C6754T | p.H2252Y |
| 247 | LUNG | <i>NCOR1</i> | 17 | 15950400 | 15950400 | C | T | nonsynonymous | NM_006311 | c.G6544A | p.A2182T |
| 247 | LUNG | <i>SPAG5</i> | 17 | 26913151 | 26913151 | G | T | nonsynonymous | NM_006461 | c.C1562A | p.S521Y |
| 247 | LUNG | <i>GPR142</i> | 17 | 72368384 | 72368384 | G | A | nonsynonymous | NM_181790 | c.G1034A | p.R345Q |
| 247 | LUNG | <i>C17orf62</i> | 17 | 80404516 | 80404516 | T | C | nonsynonymous | NM_001193653 | c.A184G | p.N62D |
| 247 | LUNG | <i>XAB2</i> | 19 | 7692308 | 7692308 | C | T | nonsynonymous | NM_020196 | c.G343A | p.D115N |
| 247 | LUNG | <i>MYPOP</i> | 19 | 46404923 | 46404923 | G | A | nonsynonymous | NM_001012643 | c.C109T | p.P37S |
| 247 | LUNG | <i>SLCIA5</i> | 19 | 47287386 | 47287386 | C | T | nonsynonymous | NM_005628 | c.G625A | p.E209K |
| 247 | LUNG | <i>FUT2</i> | 19 | 49206625 | 49206625 | C | T | nonsynonymous | NM_000511 | c.C412T | p.R138C |
| 247 | LUNG | <i>HRC</i> | 19 | 49657791 | 49657791 | C | T | nonsynonymous | NM_002152 | c.G704A | p.G235D |
| 247 | LUNG | <i>HRC</i> | 19 | 49657794 | 49657794 | T | C | nonsynonymous | NM_002152 | c.A701G | p.H234R |
| 247 | LUNG | <i>KLK7</i> | 19 | 51483102 | 51483102 | A | G | nonsynonymous | NM_139277 | c.T548C | p.L183S |
| 247 | LUNG | <i>NLRP11</i> | 19 | 56297164 | 56297164 | T | G | nonsynonymous | NM_145007 | c.A2929C | p.I977L |
| 247 | LUNG | <i>ZNF544</i> | 19 | 58757770 | 58757770 | C | T | nonsynonymous | NM_014480 | c.C137T | p.T46I |
| 247 | LUNG | <i>AKAP17A</i> | X | 1719897 | 1719897 | C | G | nonsynonymous | NM_005088 | c.C1498G | p.P500A |
| 247 | LUNG | <i>ARSD</i> | X | 2836041 | 2836041 | A | T | nonsynonymous | NM_001669 | c.T667A | p.F223I |
| 247 | LUNG | <i>ARSD</i> | X | 2836047 | 2836047 | C | T | nonsynonymous | NM_001669 | c.G661A | p.G221S |
| 247 | LUNG | <i>ARSD</i> | X | 2836181 | 2836181 | A | T | nonsynonymous | NM_001669 | c.T527A | p.M176K |
| 247 | LUNG | <i>ARSD</i> | X | 2836184 | 2836184 | C | T | nonsynonymous | NM_001669 | c.G524A | p.G175D |
| 247 | LUNG | <i>ARSD</i> | X | 2836211 | 2836211 | A | T | nonsynonymous | NM_001669 | c.T497A | p.L166Q |
| 247 | LUNG | <i>RBMX</i> | X | 135956408 | 135956408 | A | G | nonsynonymous | NM_002139 | c.T1069C | p.Y357H |

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|-----|------|------------------|----|-----------|-----------|-------------------------------|---|---------------|--------------|---|----------------------------|
| 247 | LUNG | <i>RBMX</i> | X | 135956462 | 135956462 | G | C | nonsynonymous | NM_002139 | c.C1015G | p.R339G |
| 247 | LUNG | <i>RBMX</i> | X | 135956467 | 135956467 | C | T | nonsynonymous | NM_002139 | c.G1010A | p.S337N |
| 247 | LUNG | <i>RBMX</i> | X | 135956506 | 135956506 | C | G | nonsynonymous | NM_002139 | c.G971C | p.R324P |
| 247 | LUNG | <i>RBMX</i> | X | 135960119 | 135960119 | C | T | nonsynonymous | NM_002139 | c.G343A | p.G115R |
| 248 | LUNG | <i>LOC554223</i> | 6 | 29760353 | 29760373 | GCGGGCGC CGTGGATG GAGCA | - | nonframeshift | NM_001207043 | c.438_458del | p.146_153del |
| 248 | LUNG | <i>HDGFRP2</i> | 19 | 4499633 | 4499647 | AGCTGGCC GGGGAGG | - | frameshift | NM_001001520 | c.1721_1722del | p.K574fs |
| 248 | LUNG | <i>HCN3</i> | 1 | 155257913 | 155257913 | G | T | nonsynonymous | NM_020897 | c.G1984T | p.A662S |
| 248 | LUNG | <i>NOL10</i> | 2 | 10784467 | 10784467 | C | G | nonsynonymous | NM_024894 | c.G1005C | p.K335N |
| 248 | LUNG | <i>TTN</i> | 2 | 179473091 | 179473091 | C | A | stopgain | NM_001267550 | c.G52519T | p.E17507X |
| 249 | LUNG | <i>VCX2</i> | X | 8138165 | 8138168 | CCTC | - | frameshift | NM_016378 | c.325_328del | p.E109fs |
| 249 | LUNG | <i>GNPAT</i> | 1 | 231413267 | 231413267 | A | C | nonsynonymous | NM_014236 | c.A2022C | p.K674N |
| 249 | LUNG | <i>ANKRD36</i> | 2 | 97877478 | 97877478 | G | A | nonsynonymous | NM_001164315 | c.G3469A | p.V1157M |
| 249 | LUNG | <i>SPATA4</i> | 4 | 177116706 | 177116706 | G | C | nonsynonymous | NM_144644 | c.C8G | p.A3G |
| 250 | LUNG | <i>TPM2</i> | 9 | 35683240 | 35683240 | - | G | splicing | NM_003289 | c.773-2->C | |
| 250 | LUNG | <i>MUC4</i> | 3 | 195507173 | 195507173 | G | A | nonsynonymous | NM_018406 | c.C11278T | p.P3760S |
| 250 | LUNG | <i>ZSWIM8</i> | 10 | 75559013 | 75559013 | C | G | nonsynonymous | NM_001242487 | c.C4415G | p.A1472G |
| 250 | LUNG | <i>MADCAM1</i> | 19 | 501786 | 501786 | C | A | nonsynonymous | NM_130760 | c.C785A | p.P262Q |
| 250 | LUNG | <i>NKAIN4</i> | 20 | 61881402 | 61881402 | A | C | nonsynonymous | NM_152864 | c.T77G | p.V26G |
| 251 | LUNG | <i>KRTAP9-1</i> | 17 | 39346595 | 39346595 | - | GCTGTGG GTCCAGC TGCTGCC AGCCTA | nonframeshift | NM_001190460 | c.457_458insGCTGT GGGTCCAGCTGCT GCCAGCCTA | p.C153delinsCCG SSCCQPS |

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|-----|------|---------------|----|-----------|-----------|--------|---|---------------|--------------|----------------|--------------|
| 251 | LUNG | <i>WNT2B</i> | 1 | 113010181 | 113010181 | G | T | nonsynonymous | NM_004185 | c.G22T | p.V8L |
| 251 | LUNG | <i>PLEC</i> | 8 | 144998359 | 144998359 | A | C | nonsynonymous | NM_201380 | c.T6149G | p.V2050G |
| 251 | LUNG | <i>CEL</i> | 9 | 135947032 | 135947032 | C | A | nonsynonymous | NM_001807 | c.C2152A | p.P718T |
| 25 | LUNG | <i>TMEM44</i> | 3 | 194337911 | 194337911 | C | T | nonsynonymous | NM_001166305 | c.G841A | p.A281T |
| 25 | LUNG | <i>CRIPAK</i> | 4 | 1389156 | 1389156 | T | C | nonsynonymous | NM_175918 | c.T857C | p.M286T |
| 25 | LUNG | <i>CRIPAK</i> | 4 | 1389161 | 1389161 | A | G | nonsynonymous | NM_175918 | c.A862G | p.S288G |
| 25 | LUNG | <i>FTMT</i> | 5 | 121188329 | 121188329 | G | A | nonsynonymous | NM_177478 | c.G671A | p.G224D |
| 25 | LUNG | <i>DAB2IP</i> | 9 | 124535203 | 124535203 | C | T | nonsynonymous | NM_138709 | c.C2024T | p.T675M |
| 25 | LUNG | <i>FOXN4</i> | 12 | 109719404 | 109719404 | G | A | stopgain | NM_213596 | c.C1102T | p.Q368X |
| 25 | LUNG | <i>CECR1</i> | 22 | 17690555 | 17690555 | C | T | nonsynonymous | NM_001282226 | c.G13A | p.G5S |
| 26 | LUNG | <i>ADGRB1</i> | 8 | 143558834 | 143558834 | - | C | frameshift | NM_001702 | c.1312dupC | p.R437fs |
| 26 | LUNG | <i>PDE3A</i> | 12 | 20522722 | 20522722 | - | G | frameshift | NM_000921 | c.505dupG | p.C168fs |
| 26 | LUNG | <i>LRRC49</i> | 15 | 71276481 | 71276483 | CAA | - | nonframeshift | NM_017691 | c.1054_1056del | p.352_352del |
| 26 | LUNG | <i>ZNF283</i> | 19 | 44351167 | 44351172 | GGAGAT | - | frameshift | NM_001297752 | | |
| 26 | LUNG | <i>FAM83E</i> | 19 | 49107037 | 49107037 | - | G | frameshift | NM_017708 | c.889dupC | p.Q297fs |
| 26 | LUNG | <i>CAPG</i> | 2 | 85629266 | 85629266 | C | T | nonsynonymous | NM_001256140 | c.G3A | p.M1I |
| 26 | LUNG | <i>DNAH1</i> | 3 | 52420315 | 52420315 | C | T | nonsynonymous | NM_015512 | c.C8765T | p.A2922V |
| 26 | LUNG | <i>CRIPAK</i> | 4 | 1389005 | 1389005 | T | C | nonsynonymous | NM_175918 | c.T706C | p.C236R |
| 26 | LUNG | <i>CRIPAK</i> | 4 | 1389156 | 1389156 | T | C | nonsynonymous | NM_175918 | c.T857C | p.M286T |
| 26 | LUNG | <i>CRIPAK</i> | 4 | 1389161 | 1389161 | A | G | nonsynonymous | NM_175918 | c.A862G | p.S288G |
| 26 | LUNG | <i>RPL37</i> | 5 | 40834582 | 40834582 | T | G | nonsynonymous | NM_000997 | c.A130C | p.K44Q |
| 26 | LUNG | <i>OCLN</i> | 5 | 68804987 | 68804987 | C | G | nonsynonymous | NM_002538 | c.C70G | p.P24A |
| 26 | LUNG | <i>DNAH11</i> | 7 | 21675651 | 21675651 | G | A | nonsynonymous | NM_001277115 | c.G4663A | p.D1555N |
| 26 | LUNG | <i>SEC16A</i> | 9 | 139370018 | 139370018 | C | T | nonsynonymous | NM_014866 | c.G2050A | p.E684K |
| 26 | LUNG | <i>ERCC6</i> | 10 | 50669560 | 50669560 | C | T | nonsynonymous | NM_000124 | c.G3821A | p.G1274E |

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|-----|------|------------------|----|-----------|-----------|--|--------|---------------|--------------|------------------------|-----------------|
| 26 | LUNG | <i>POLE</i> | 12 | 133220454 | 133220454 | G | A | nonsynonymous | NM_006231 | c.C4259T | p.A1420V |
| 26 | LUNG | <i>FARPI</i> | 13 | 98896944 | 98896944 | A | G | nonsynonymous | NM_001001715 | c.A371G | p.E124G |
| 26 | LUNG | <i>C15orf39</i> | 15 | 75498615 | 75498615 | G | A | nonsynonymous | NM_015492 | c.G226A | p.G76S |
| 26 | LUNG | <i>CCDC144NL</i> | 17 | 20769896 | 20769896 | G | T | nonsynonymous | NM_001004306 | c.C536A | p.T179N |
| 26 | LUNG | <i>CCDC144NL</i> | 17 | 20769899 | 20769899 | G | T | stopgain | NM_001004306 | c.C533A | p.S178X |
| 26 | LUNG | <i>PRODH2</i> | 19 | 36304134 | 36304134 | A | G | nonsynonymous | NM_021232 | c.T50C | p.V17A |
| 26 | LUNG | <i>ALDH16A1</i> | 19 | 49971744 | 49971744 | C | T | nonsynonymous | NM_153329 | c.C2045T | p.A682V |
| 26 | LUNG | <i>RUNX1</i> | 21 | 36259324 | 36259324 | A | G | nonsynonymous | NM_001001890 | c.T86C | p.L29S |
| 26 | LUNG | <i>PPARA</i> | 22 | 46594477 | 46594477 | C | T | nonsynonymous | NM_001001928 | c.C197T | p.S66L |
| 273 | LUNG | <i>MRPS30</i> | 5 | 44809433 | 44809433 | - | GAGCCC | nonframeshift | NM_016640 | c.369_370insGAGCC C | p.A123delinsAEP |
| 273 | LUNG | <i>MICA</i> | 6 | 31380161 | 31380161 | - | CT | frameshift | NM_001177519 | c.952_953insCT | p.G318fs |
| 273 | LUNG | <i>RALY</i> | 20 | 32664864 | 32664864 | - | CAG | nonframeshift | NM_016732 | c.689_690insCAG | p.A230delinsAS |
| 273 | LUNG | <i>PTGSI</i> | 9 | 125134096 | 125134096 | T | C | nonsynonymous | NM_001271368 | c.T2C | p.M1T |
| 273 | LUNG | <i>HEATR5A</i> | 14 | 31819172 | 31819172 | G | T | nonsynonymous | NM_015473 | c.C2531A | p.S844Y |
| 273 | LUNG | <i>CACNA1G</i> | 17 | 48653240 | 48653240 | C | A | nonsynonymous | NM_018896 | c.C1477A | p.H493N |
| 273 | LUNG | <i>RASAL3</i> | 19 | 15564025 | 15564025 | G | A | nonsynonymous | NM_022904 | c.C2563T | p.R855W |
| 274 | LUNG | <i>IRF5</i> | 7 | 128587352 | 128587381 | ACTCTGCA GCCGCCCA CTCTGCGG CCGCCT | - | nonframeshift | NM_001098630 | c.502_531del | p.168_177del |
| 274 | LUNG | <i>FAM90A1</i> | 12 | 8374781 | 8374781 | - | ACG | nonframeshift | NM_018088 | c.1031_1032insCGT | p.T344delinsTV |
| 274 | LUNG | <i>ARHGAP39</i> | 8 | 145806632 | 145806632 | C | A | nonsynonymous | NM_025251 | c.G110T | p.R37L |
| 274 | LUNG | <i>OTOGL</i> | 12 | 80661098 | 80661098 | C | T | nonsynonymous | NM_173591 | c.C2429T | p.S810L |
| 274 | LUNG | <i>DCLK1</i> | 13 | 36348736 | 36348736 | G | A | nonsynonymous | NM_001195416 | c.C1238T | p.S413L |

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|-----|------|-----------------|----|-----------|-----------|--|-----|---------------|--------------|-------------------|-----------------|
| 274 | LUNG | <i>GOLGA6L2</i> | 15 | 23685895 | 23685895 | C | T | nonsynonymous | NM_001304388 | c.G1727A | p.G576E |
| 274 | LUNG | <i>GOLGA6L2</i> | 15 | 23685943 | 23685943 | C | T | nonsynonymous | NM_001304388 | c.G1679A | p.G560E |
| 274 | LUNG | <i>GOLGA6L2</i> | 15 | 23685946 | 23685946 | A | G | nonsynonymous | NM_001304388 | c.T1676C | p.V559A |
| 274 | LUNG | <i>SHROOM4</i> | X | 50350728 | 50350728 | - | TCC | nonframeshift | NM_020717 | c.3413_3414insGGA | p.E1138delinsEE |
| 275 | LUNG | <i>NUTM2F</i> | 9 | 97080945 | 97080947 | AGA | - | nonframeshift | NM_017561 | c.2071_2073del | p.691_691del |
| 275 | LUNG | <i>HCN2</i> | 19 | 615947 | 615955 | CCGCCGCC G | - | nonframeshift | NM_001194 | c.2143_2151del | p.715_717del |
| 275 | LUNG | <i>GABRR2</i> | 6 | 89967489 | 89967489 | C | T | nonsynonymous | NM_002043 | c.G1298A | p.R433H |
| 275 | LUNG | <i>PC</i> | 11 | 66638540 | 66638540 | C | A | nonsynonymous | NM_000920 | c.G616T | p.V206L |
| 275 | LUNG | <i>GOLGA6L2</i> | 15 | 23685943 | 23685943 | C | T | nonsynonymous | NM_001304388 | c.G1679A | p.G560E |
| 275 | LUNG | <i>TPSD1</i> | 16 | 1306971 | 1306971 | A | G | nonsynonymous | NM_012217 | c.A428G | p.H143R |
| 275 | LUNG | <i>SLC38A7</i> | 16 | 58705014 | 58705014 | G | T | nonsynonymous | NM_018231 | c.C1166A | p.P389H |
| 275 | LUNG | <i>SOST</i> | 17 | 41832896 | 41832896 | C | A | nonsynonymous | NM_025237 | c.G456T | p.E152D |
| 276 | LUNG | <i>PCDHGA10</i> | 5 | 140795208 | 140795208 | - | A | frameshift | NM_032090 | c.2467dupA | p.V822fs |
| 276 | LUNG | <i>IRF5</i> | 7 | 128587352 | 128587381 | ACTCTGCA GCCGCCCA CTCTGCGG CCGCCT | - | nonframeshift | NM_001098630 | c.502_531del | p.168_177del |
| 276 | LUNG | <i>RP1L1</i> | 8 | 10466004 | 10466024 | CTGGGCCT CCCCTTCA GCCTC | - | nonframeshift | NM_178857 | c.5584_5604del | p.1862_1868del |
| 276 | LUNG | <i>MICALCL</i> | 11 | 12316387 | 12316389 | CTA | - | nonframeshift | NM_032867 | c.1409_1411del | p.470_471del |
| 276 | LUNG | <i>SALL1</i> | 16 | 51175656 | 51175664 | GCTGCTGC T | - | nonframeshift | NM_002968 | c.469_477del | p.157_159del |
| 276 | LUNG | <i>PRKCSH</i> | 19 | 11558341 | 11558343 | GAG | - | nonframeshift | NM_002743 | c.937_939del | p.313_313del |

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|-----|------|-----------------|----|-----------|-----------|------|---|---------------|--------------|----------------|--------------|
| 276 | LUNG | <i>HLA-DPBI</i> | 6 | 33048689 | 33048689 | G | A | nonsynonymous | NM_002121 | c.G341A | p.G114E |
| 276 | LUNG | <i>HLA-DPBI</i> | 6 | 33048694 | 33048694 | A | G | nonsynonymous | NM_002121 | c.A346G | p.M116V |
| 276 | LUNG | <i>SRSF9</i> | 12 | 120899912 | 120899912 | G | T | stopgain | NM_003769 | c.C576A | p.Y192X |
| 276 | LUNG | <i>PKD1</i> | 16 | 2159477 | 2159477 | C | A | nonsynonymous | NM_001009944 | c.G5691T | p.K1897N |
| 276 | LUNG | <i>KLHL36</i> | 16 | 84695470 | 84695470 | C | A | nonsynonymous | NM_024731 | c.C1582A | p.R528S |
| 276 | LUNG | <i>CGB7</i> | 19 | 49558216 | 49558216 | C | T | nonsynonymous | NM_033142 | c.G65A | p.R22K |
| 277 | LUNG | <i>YEATS2</i> | 3 | 183493744 | 183493746 | GGA | - | nonframeshift | NM_018023 | c.2410_2412del | p.804_804del |
| 277 | LUNG | <i>ZNF3</i> | 7 | 99662512 | 99662515 | TAGT | - | frameshift | NM_017715 | c.292_295del | p.T98fs |
| 277 | LUNG | <i>MSS51</i> | 10 | 75184516 | 75184516 | A | - | frameshift | NM_001024593 | c.1178delT | p.V393fs |
| 277 | LUNG | <i>PRPF38B</i> | 1 | 109242186 | 109242186 | G | T | nonsynonymous | NM_018061 | c.G1185T | p.R395S |
| 277 | LUNG | <i>ALS2CR12</i> | 2 | 202195557 | 202195557 | C | A | splicing | NM_001127391 | c.525-1G>T | |
| 277 | LUNG | <i>SLC22A13</i> | 3 | 38307398 | 38307398 | G | A | nonsynonymous | NM_004256 | c.G47A | p.R16H |
| 277 | LUNG | <i>CYP8B1</i> | 3 | 42916105 | 42916105 | C | T | nonsynonymous | NM_004391 | c.G1204A | p.V402I |
| 277 | LUNG | <i>HEMK1</i> | 3 | 50617351 | 50617351 | C | T | nonsynonymous | NM_016173 | c.C847T | p.R283W |
| 277 | LUNG | <i>GOLGB1</i> | 3 | 121415004 | 121415004 | C | T | nonsynonymous | NM_004487 | c.G4351A | p.D1451N |
| 277 | LUNG | <i>MYLK</i> | 3 | 123457827 | 123457827 | G | A | stopgain | NM_053025 | c.C505T | p.R169X |
| 277 | LUNG | <i>VEPH1</i> | 3 | 157146186 | 157146186 | C | T | nonsynonymous | NM_001167912 | c.G621A | p.M207I |
| 277 | LUNG | <i>HTR3C</i> | 3 | 183777300 | 183777300 | C | T | nonsynonymous | NM_130770 | c.C797T | p.A266V |
| 277 | LUNG | <i>ATP13A4</i> | 3 | 193232539 | 193232539 | T | C | nonsynonymous | NM_032279 | c.A182G | p.H61R |
| 277 | LUNG | <i>MUC20</i> | 3 | 195452799 | 195452799 | C | T | nonsynonymous | NM_001282506 | c.C1325T | p.T442I |
| 277 | LUNG | <i>MUC4</i> | 3 | 195507925 | 195507925 | C | T | nonsynonymous | NM_018406 | c.G10526A | p.G3509D |
| 277 | LUNG | <i>MUC4</i> | 3 | 195510396 | 195510396 | A | C | nonsynonymous | NM_018406 | c.T8055G | p.H2685Q |
| 277 | LUNG | <i>MUC4</i> | 3 | 195510655 | 195510655 | T | G | nonsynonymous | NM_018406 | c.A7796C | p.Y2599S |
| 277 | LUNG | <i>MUC4</i> | 3 | 195510827 | 195510827 | C | T | nonsynonymous | NM_018406 | c.G7624A | p.A2542T |
| 277 | LUNG | <i>MUC4</i> | 3 | 195513680 | 195513680 | A | T | nonsynonymous | NM_018406 | c.T4771A | p.S1591T |

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|-----|------|------------------|----|-----------|-----------|---|---|---------------|--------------|----------|----------|
| 277 | LUNG | <i>CRIPAK</i> | 4 | 1388693 | 1388693 | C | G | nonsynonymous | NM_175918 | c.C394G | p.H132D |
| 277 | LUNG | <i>CRIPAK</i> | 4 | 1389005 | 1389005 | T | C | nonsynonymous | NM_175918 | c.T706C | p.C236R |
| 277 | LUNG | <i>CRIPAK</i> | 4 | 1389156 | 1389156 | T | C | nonsynonymous | NM_175918 | c.T857C | p.M286T |
| 277 | LUNG | <i>CRIPAK</i> | 4 | 1389161 | 1389161 | A | G | nonsynonymous | NM_175918 | c.A862G | p.S288G |
| 277 | LUNG | <i>HGFAC</i> | 4 | 3443769 | 3443769 | C | T | nonsynonymous | NM_001528 | c.C41T | p.P14L |
| 277 | LUNG | <i>MAP9</i> | 4 | 156276986 | 156276986 | G | A | nonsynonymous | NM_001039580 | c.C1172T | p.P391L |
| 277 | LUNG | <i>IPO11</i> | 5 | 61772558 | 61772558 | C | A | nonsynonymous | NM_016338 | c.C806A | p.T269N |
| 277 | LUNG | <i>DMXL1</i> | 5 | 118469561 | 118469561 | G | A | nonsynonymous | NM_001290321 | c.G1942A | p.V648I |
| 277 | LUNG | <i>PCDHA12</i> | 5 | 140257329 | 140257329 | G | T | nonsynonymous | NM_018903 | c.G2272T | p.V758L |
| 277 | LUNG | <i>PCDHGB5</i> | 5 | 140778580 | 140778580 | G | A | nonsynonymous | NM_018925 | c.G886A | p.E296K |
| 277 | LUNG | <i>PCDHGB6</i> | 5 | 140789304 | 140789304 | G | C | nonsynonymous | NM_018926 | c.G1535C | p.G512A |
| 277 | LUNG | <i>PCDH12</i> | 5 | 141336635 | 141336635 | G | A | nonsynonymous | NM_016580 | c.C782T | p.T261M |
| 277 | LUNG | <i>DPYSL3</i> | 5 | 146775229 | 146775229 | A | C | nonsynonymous | NM_001387 | c.T1517G | p.L506R |
| 277 | LUNG | <i>TRIM50</i> | 7 | 72734154 | 72734154 | G | A | stopgain | NM_001281450 | c.C487T | p.R163X |
| 277 | LUNG | <i>DTX2</i> | 7 | 76111831 | 76111831 | T | C | nonsynonymous | NM_020892 | c.T275C | p.M92T |
| 277 | LUNG | <i>ZNF705G</i> | 8 | 7218632 | 7218632 | C | T | nonsynonymous | NM_001164457 | c.G139A | p.G47R |
| 277 | LUNG | <i>BEND7</i> | 10 | 13541789 | 13541789 | G | A | nonsynonymous | NM_152751 | c.C281T | p.T94M |
| 277 | LUNG | <i>MASTL</i> | 10 | 27456090 | 27456090 | C | T | nonsynonymous | NM_001172303 | c.C871T | p.L291F |
| 277 | LUNG | <i>SEC31B</i> | 10 | 102262015 | 102262015 | A | G | nonsynonymous | NM_015490 | c.T1406C | p.L469P |
| 277 | LUNG | <i>MXII</i> | 10 | 112044604 | 112044604 | A | C | nonsynonymous | NM_005962 | c.A546C | p.E182D |
| 277 | LUNG | <i>MUC2</i> | 11 | 1093364 | 1093364 | C | G | nonsynonymous | NM_002457 | c.C5183G | p.T1728S |
| 277 | LUNG | <i>ATG2A</i> | 11 | 64668504 | 64668504 | C | A | nonsynonymous | NM_015104 | c.G4180T | p.G1394C |
| 277 | LUNG | <i>HNRNPA1L2</i> | 13 | 53217400 | 53217400 | G | A | nonsynonymous | NM_001011724 | c.G773A | p.G258E |
| 277 | LUNG | <i>FAM155A</i> | 13 | 107823070 | 107823070 | T | A | nonsynonymous | NM_001080396 | c.A1152T | p.K384N |
| 277 | LUNG | <i>ATP11AUN</i> | 13 | 113337689 | 113337689 | C | T | nonsynonymous | NM_207440 | c.C361T | p.R121W |

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|-----|------|-----------------|----|-----------|-----------|---------------------|-------------------------|---------------|--------------|---------------------------------|-----------------------|
| 277 | LUNG | <i>PLCB2</i> | 15 | 40581499 | 40581499 | C | T | nonsynonymous | NM_004573 | c.G3328A | p.E1110K |
| 277 | LUNG | <i>MYO15A</i> | 17 | 18067132 | 18067132 | T | C | nonsynonymous | NM_016239 | c.T9767C | p.I3256T |
| 277 | LUNG | <i>RNF112</i> | 17 | 19316371 | 19316371 | C | G | nonsynonymous | NM_007148 | c.C502G | p.P168A |
| 277 | LUNG | <i>SDK2</i> | 17 | 71384030 | 71384030 | A | C | nonsynonymous | NM_001144952 | c.T4339G | p.W1447G |
| 277 | LUNG | <i>ENTHD2</i> | 17 | 79207271 | 79207271 | G | T | nonsynonymous | NM_144679 | c.C487A | p.L163I |
| 277 | LUNG | <i>TJP3</i> | 19 | 3738894 | 3738894 | G | C | splicing | NM_001267560 | c.1394-1G>C | |
| 277 | LUNG | <i>CHAF1A</i> | 19 | 4429469 | 4429469 | G | A | nonsynonymous | NM_005483 | c.G1639A | p.G547S |
| 277 | LUNG | <i>ZNRF4</i> | 19 | 5455543 | 5455543 | G | C | nonsynonymous | NM_181710 | c.G41C | p.S14T |
| 277 | LUNG | <i>LONP1</i> | 19 | 5694903 | 5694903 | C | G | nonsynonymous | NM_004793 | c.G2023C | p.V675L |
| 277 | LUNG | <i>MCEMP1</i> | 19 | 7743394 | 7743394 | G | A | nonsynonymous | NM_174918 | c.G391A | p.A131T |
| 277 | LUNG | <i>MUC16</i> | 19 | 9066390 | 9066390 | G | A | nonsynonymous | NM_024690 | c.C21056T | p.S7019L |
| 277 | LUNG | <i>MYO9B</i> | 19 | 17305607 | 17305607 | A | G | nonsynonymous | NM_004145 | c.A3371G | p.E1124G |
| 277 | LUNG | <i>IFNL3</i> | 19 | 39734352 | 39734352 | C | T | nonsynonymous | NM_172139 | c.G511A | p.E171K |
| 277 | LUNG | <i>LILRA2</i> | 19 | 55098694 | 55098694 | T | C | nonsynonymous | NM_001130917 | c.T1333C | p.Y445H |
| 277 | LUNG | <i>PEG3</i> | 19 | 57334156 | 57334156 | C | T | nonsynonymous | NM_001146184 | c.G530A | p.R177Q |
| 277 | LUNG | <i>BAGE</i> | 21 | 11097574 | 11097574 | T | A | nonsynonymous | NM_001187 | c.A88T | p.R30W |
| 277 | LUNG | <i>EVA1C</i> | 21 | 33873749 | 33873749 | T | C | nonsynonymous | NM_058187 | c.T803C | p.I268T |
| 277 | LUNG | <i>ARSD</i> | X | 2836041 | 2836041 | A | T | nonsynonymous | NM_001669 | c.T667A | p.F223I |
| 277 | LUNG | <i>ARSD</i> | X | 2836047 | 2836047 | C | T | nonsynonymous | NM_001669 | c.G661A | p.G221S |
| 278 | LUNG | <i>KRTAP4-5</i> | 17 | 39305775 | 39305775 | - | GGCAGCA GCTGGGG C | nonframeshift | NM_033188 | c.244_245insGCCCC AGCTGCTGCC | p.Q82delinsRPSC CQ |
| 278 | LUNG | <i>MUC5B</i> | 11 | 1266716 | 1266716 | T | C | nonsynonymous | NM_002458 | c.T8606C | p.M2869T |
| 279 | LUNG | <i>TUBGCP3</i> | 13 | 113201853 | 113201867 | TGGGAAAG TCGCGCG | - | nonframeshift | NM_001286279 | c.1235_1249del | p.412_417del |

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|-----|------|------------------|----|-----------|-----------|----------------------------|--------|---------------|--------------|--------------------------|-----------------|
| 279 | LUNG | <i>MUC20</i> | 3 | 195452799 | 195452799 | C | T | nonsynonymous | NM_001282506 | c.C1325T | p.T442I |
| 279 | LUNG | <i>CAAP1</i> | 9 | 26842442 | 26842442 | C | T | nonsynonymous | NM_024828 | c.G943A | p.E315K |
| 279 | LUNG | <i>USP35</i> | 11 | 77920964 | 77920964 | C | T | nonsynonymous | NM_020798 | c.C2063T | p.T688M |
| 280 | LUNG | <i>TCERG1</i> | 5 | 145838636 | 145838653 | CAGGCCCA GGCCCAGG CC | - | nonframeshift | NM_006706 | c.628_645del | p.210_215del |
| 280 | LUNG | <i>SKIDA1</i> | 10 | 21805466 | 21805466 | - | CCTCCT | nonframeshift | NM_207371 | c.1285_1286insAGG AGG | p.G429delinsEEG |
| 280 | LUNG | <i>MAZ</i> | 16 | 29821430 | 29821438 | GCGGCAGC G | - | nonframeshift | NM_002383 | c.1312_1320del | p.438_440del |
| 280 | LUNG | <i>ZC3H18</i> | 16 | 88677721 | 88677726 | GAGCGG | - | nonframeshift | NM_001294340 | c.1324_1329del | p.442_443del |
| 280 | LUNG | <i>VCX2</i> | X | 8138165 | 8138168 | CCTC | - | frameshift | NM_016378 | c.325_328del | p.E109fs |
| 280 | LUNG | <i>IL17RC</i> | 3 | 9970063 | 9970063 | G | A | nonsynonymous | NM_153461 | c.G1165A | p.A389T |
| 280 | LUNG | <i>DOCK3</i> | 3 | 50816121 | 50816121 | G | A | nonsynonymous | NM_004947 | c.G53A | p.R18Q |
| 280 | LUNG | <i>LTBP2</i> | 14 | 74970041 | 74970041 | A | G | nonsynonymous | NM_000428 | c.T4769C | p.V1590A |
| 280 | LUNG | <i>FBF1</i> | 17 | 73914270 | 73914270 | G | A | nonsynonymous | NM_001080542 | c.C2174T | p.A725V |
| 280 | LUNG | <i>OGFR</i> | 20 | 61444637 | 61444637 | G | C | nonsynonymous | NM_007346 | c.G1670C | p.S557T |
| 280 | LUNG | <i>NDUFV3</i> | 21 | 44324388 | 44324388 | T | A | splicing | NM_021075 | c.1264+2T>A | |
| 280 | LUNG | <i>KRTAP10-5</i> | 21 | 46000284 | 46000284 | G | A | nonsynonymous | NM_198694 | c.C172T | p.P58S |
| 280 | LUNG | <i>UPK3A</i> | 22 | 45683265 | 45683265 | A | C | nonsynonymous | NM_006953 | c.A421C | p.T141P |
| 281 | LUNG | <i>A3GALT2</i> | 1 | 33772792 | 33772792 | C | T | nonsynonymous | NM_001080438 | c.G598A | p.V200M |
| 281 | LUNG | <i>AGL</i> | 1 | 100376388 | 100376388 | T | C | nonsynonymous | NM_000028 | c.T3821C | p.I1274T |
| 281 | LUNG | <i>MUC4</i> | 3 | 195510827 | 195510827 | C | T | nonsynonymous | NM_018406 | c.G7624A | p.A2542T |
| 281 | LUNG | <i>CYP21A2</i> | 6 | 32006886 | 32006886 | G | A | nonsynonymous | NM_000500 | c.G308A | p.R103K |
| 282 | LUNG | <i>VCX2</i> | X | 8138165 | 8138168 | CCTC | - | frameshift | NM_016378 | c.325_328del | p.E109fs |

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|-----|------|------------------|----|-----------|-----------|-----------------|---|---------------|--------------|---|----------------------------|
| 282 | LUNG | <i>GOLGA6L10</i> | 15 | 82635194 | 82635194 | T | C | nonsynonymous | NM_001164465 | c.A1505G | p.E502G |
| 283 | LUNG | <i>KRTAP9-1</i> | 17 | 39346595 | 39346595 | - | GCTGTGG GTCCAGC TGCTGCC AGCCTA | nonframeshift | NM_001190460 | c.457_458insGCTGT GGGTCCAGCTGCT GCCAGCCTA | p.C153delinsCCG SSCCQPS |
| 283 | LUNG | <i>NCOA3</i> | 20 | 46279815 | 46279823 | GCAGCAGC A | - | nonframeshift | NM_001174087 | c.3738_3746del | p.1246_1249del |
| 283 | LUNG | <i>MUC4</i> | 3 | 195509212 | 195509212 | G | A | nonsynonymous | NM_018406 | c.C9239T | p.S3080L |
| 283 | LUNG | <i>LAT2</i> | 7 | 73639055 | 73639055 | G | C | nonsynonymous | NM_032464 | c.G715C | p.A239P |
| 283 | LUNG | <i>POLRMT</i> | 19 | 621603 | 621603 | G | C | nonsynonymous | NM_005035 | c.C2095G | p.L699V |
| 284 | LUNG | <i>MYO9B</i> | 19 | 17303604 | 17303604 | G | A | nonsynonymous | NM_004145 | c.G2861A | p.R954Q |
| 285 | LUNG | <i>ANKMY2</i> | 7 | 16676082 | 16676082 | - | A | splicing | NM_020319 | c.68-2->T | |
| 285 | LUNG | <i>AUTS2</i> | 7 | 70255884 | 70255894 | GGGGGCCG CCC | - | frameshift | NM_015570 | c.3682_3692del | p.G1228fs |
| 285 | LUNG | <i>USP20</i> | 9 | 132630665 | 132630667 | GAC | - | nonframeshift | NM_001008563 | c.1072_1074del | p.358_358del |
| 285 | LUNG | <i>LRRC49</i> | 15 | 71276481 | 71276483 | CAA | - | nonframeshift | NM_017691 | c.1054_1056del | p.352_352del |
| 285 | LUNG | <i>RALY</i> | 20 | 32664864 | 32664864 | - | CAG | nonframeshift | NM_016732 | c.689_690insCAG | p.A230delinsAS |
| 285 | LUNG | <i>VCX2</i> | X | 8138165 | 8138168 | CCTC | - | frameshift | NM_016378 | c.325_328del | p.E109fs |
| 285 | LUNG | <i>PXDN</i> | 2 | 1652731 | 1652731 | C | T | nonsynonymous | NM_012293 | c.G2821A | p.V941M |
| 285 | LUNG | <i>NEU4</i> | 2 | 242757574 | 242757574 | C | T | nonsynonymous | NM_001167602 | c.C655T | p.R219C |
| 285 | LUNG | <i>CRYBG3</i> | 3 | 97634465 | 97634465 | A | G | nonsynonymous | NM_153605 | c.A8126G | p.Y2709C |
| 285 | LUNG | <i>OR5H6</i> | 3 | 97983291 | 97983291 | A | G | nonsynonymous | NM_001005479 | c.A163G | p.I55V |
| 285 | LUNG | <i>NPHP3</i> | 3 | 132419267 | 132419267 | G | T | nonsynonymous | NM_153240 | c.C1654A | p.P552T |
| 285 | LUNG | <i>ZFYVE28</i> | 4 | 2306329 | 2306329 | G | A | nonsynonymous | NM_020972 | c.C1738T | p.R580C |
| 285 | LUNG | <i>CTTNBP2</i> | 7 | 117513445 | 117513445 | C | T | nonsynonymous | NM_033427 | c.G25A | p.E9K |

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|-----|------|------------------|----|-----------|-----------|---------------|---|---------------|--------------|----------------|--------------|
| 285 | LUNG | <i>NECAB1</i> | 8 | 91953077 | 91953077 | G | T | nonsynonymous | NM_022351 | c.G811T | p.A271S |
| 285 | LUNG | <i>MUC2</i> | 11 | 1093412 | 1093412 | C | T | nonsynonymous | NM_002457 | c.C5231T | p.T1744M |
| 285 | LUNG | <i>ABCC4</i> | 13 | 95768240 | 95768240 | C | T | nonsynonymous | NM_001301829 | c.G2330A | p.R777H |
| 285 | LUNG | <i>PCCA</i> | 13 | 101020733 | 101020733 | G | T | nonsynonymous | NM_000282 | c.G1651T | p.V551F |
| 285 | LUNG | <i>ZNF710</i> | 15 | 90611345 | 90611345 | C | T | nonsynonymous | NM_198526 | c.C976T | p.P326S |
| 285 | LUNG | <i>CAMTA2</i> | 17 | 4883557 | 4883557 | T | C | nonsynonymous | NM_001171167 | c.A1129G | p.M377V |
| 285 | LUNG | <i>SULT2B1</i> | 19 | 49100153 | 49100153 | G | A | nonsynonymous | NM_177973 | c.G803A | p.R268H |
| 285 | LUNG | <i>EMC10</i> | 19 | 50985170 | 50985170 | C | T | nonsynonymous | NM_175063 | c.C731T | p.A244V |
| 285 | LUNG | <i>AIRE</i> | 21 | 45714294 | 45714294 | C | T | nonsynonymous | NM_000383 | c.C1411T | p.R471C |
| 285 | LUNG | <i>MYO18B</i> | 22 | 26272247 | 26272247 | T | C | nonsynonymous | NM_032608 | c.T4172C | p.L1391P |
| 285 | LUNG | <i>ARSD</i> | X | 2836041 | 2836041 | A | T | nonsynonymous | NM_001669 | c.T667A | p.F223I |
| 285 | LUNG | <i>ARSD</i> | X | 2836047 | 2836047 | C | T | nonsynonymous | NM_001669 | c.G661A | p.G221S |
| 285 | LUNG | <i>ARSD</i> | X | 2836211 | 2836211 | A | T | nonsynonymous | NM_001669 | c.T497A | p.L166Q |
| 286 | LUNG | <i>MAP7</i> | 6 | 136683811 | 136683811 | A | T | nonsynonymous | NM_003980 | c.T1303A | p.S435T |
| 286 | LUNG | <i>GOLGA8M</i> | 15 | 28948511 | 28948511 | T | C | nonsynonymous | NM_001282468 | c.A1322G | p.Q441R |
| 287 | LUNG | <i>CPSF1</i> | 8 | 145626378 | 145626378 | A | C | nonsynonymous | NM_013291 | c.T479G | p.V160G |
| 288 | LUNG | <i>DENND4B</i> | 1 | 153907279 | 153907287 | CTGCTGCT G | - | nonframeshift | NM_014856 | c.2722_2730del | p.908_910del |
| 288 | LUNG | <i>VCX2</i> | X | 8138159 | 8138164 | CTTCCA | - | nonframeshift | NM_016378 | c.329_334del | p.110_112del |
| 288 | LUNG | <i>SUSD4</i> | 1 | 223396858 | 223396858 | C | T | nonsynonymous | NM_017982 | c.G1177A | p.G393R |
| 288 | LUNG | <i>MUC4</i> | 3 | 195512233 | 195512233 | G | A | nonsynonymous | NM_018406 | c.C6218T | p.A2073V |
| 288 | LUNG | <i>NCOR1</i> | 17 | 16097870 | 16097870 | C | A | nonsynonymous | NM_006311 | c.G14T | p.G5V |
| 288 | LUNG | <i>CCDC144NL</i> | 17 | 20769896 | 20769896 | G | T | nonsynonymous | NM_001004306 | c.C536A | p.T179N |
| 288 | LUNG | <i>CCDC144NL</i> | 17 | 20769899 | 20769899 | G | T | stopgain | NM_001004306 | c.C533A | p.S178X |
| 289 | LUNG | <i>MUC4</i> | 3 | 195508307 | 195508307 | T | C | nonsynonymous | NM_018406 | c.A10144G | p.I3382V |

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|-----|------|------------------|----|-----------|-----------|----------------------------|---|---------------|--------------|----------------|--------------|
| 289 | LUNG | <i>MUC4</i> | 3 | 195508324 | 195508324 | C | T | nonsynonymous | NM_018406 | c.G10127A | p.R3376H |
| 289 | LUNG | <i>MUC4</i> | 3 | 195508336 | 195508336 | C | T | nonsynonymous | NM_018406 | c.G10115A | p.G3372D |
| 289 | LUNG | <i>MUC4</i> | 3 | 195508402 | 195508402 | G | T | nonsynonymous | NM_018406 | c.C10049A | p.T3350N |
| 289 | LUNG | <i>LMNTD2</i> | 11 | 556093 | 556093 | C | T | nonsynonymous | NM_173573 | c.G1280A | p.S427N |
| 289 | LUNG | <i>CACNA1C</i> | 12 | 2800117 | 2800117 | G | T | stopgain | NM_001129827 | c.G6313T | p.E2105X |
| 289 | LUNG | <i>SALL2</i> | 14 | 21991410 | 21991410 | C | G | nonsynonymous | NM_005407 | c.G2452C | p.A818P |
| 289 | LUNG | <i>CSPG4</i> | 15 | 75967898 | 75967898 | C | A | nonsynonymous | NM_001897 | c.G6962T | p.W2321L |
| 289 | LUNG | <i>LOXHD1</i> | 18 | 44140197 | 44140197 | C | A | nonsynonymous | NM_144612 | c.G2910T | p.M970I |
| 290 | LUNG | <i>FAM167B</i> | 1 | 32714006 | 32714006 | G | C | nonsynonymous | NM_032648 | c.G296C | p.G99A |
| 290 | LUNG | <i>MUC4</i> | 3 | 195506473 | 195506473 | A | G | nonsynonymous | NM_018406 | c.T11978C | p.V3993A |
| 290 | LUNG | <i>OC90</i> | 8 | 133056718 | 133056718 | C | T | nonsynonymous | NM_001080399 | c.G131A | p.G44E |
| 29 | LUNG | <i>HDGFRP2</i> | 19 | 4499633 | 4499647 | AGCTGGCC GGGGAGG | - | frameshift | NM_001001520 | c.1721_1722del | p.K574fs |
| 291 | LUNG | <i>KRTAP5-5</i> | 11 | 1651191 | 1651199 | GGCTGTGG A | - | nonframeshift | NM_001001480 | c.121_129del | p.41_43del |
| 291 | LUNG | <i>KRT3</i> | 12 | 53189414 | 53189431 | CCAAAGCC ACCAGCCC CT | - | nonframeshift | NM_057088 | c.396_413del | p.132_138del |
| 29 | LUNG | <i>ZNF717</i> | 3 | 75790880 | 75790880 | A | G | nonsynonymous | NM_001128223 | c.T65C | p.V22A |
| 29 | LUNG | <i>ARSD</i> | X | 2836181 | 2836181 | A | T | nonsynonymous | NM_001669 | c.T527A | p.M176K |
| 29 | LUNG | <i>ARSD</i> | X | 2836184 | 2836184 | C | T | nonsynonymous | NM_001669 | c.G524A | p.G175D |
| 29 | LUNG | <i>GAGE13</i> | X | 49189246 | 49189246 | C | T | nonsynonymous | NM_001098412 | c.C31T | p.R11W |
| 291 | LUNG | <i>DND1</i> | 5 | 140052407 | 140052407 | G | A | nonsynonymous | NM_194249 | c.C227T | p.P76L |
| 291 | LUNG | <i>ZNF385A</i> | 12 | 54778307 | 54778307 | G | C | nonsynonymous | NM_001130967 | c.C52G | p.P18A |
| 291 | LUNG | <i>CCDC144NL</i> | 17 | 20769896 | 20769896 | G | T | nonsynonymous | NM_001004306 | c.C536A | p.T179N |

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|-----|------|------------------|----|-----------|-----------|---|---|---------------|--------------|----------------|--------------|
| 291 | LUNG | <i>CCDC144NL</i> | 17 | 20769899 | 20769899 | G | T | stopgain | NM_001004306 | c.C533A | p.S178X |
| 292 | LUNG | <i>NOTCH4</i> | 6 | 32183028 | 32183028 | T | G | nonsynonymous | NM_004557 | c.A1996C | p.T666P |
| 292 | LUNG | <i>ERN2</i> | 16 | 23702727 | 23702727 | T | C | nonsynonymous | NM_033266 | c.A2540G | p.E847G |
| 292 | LUNG | <i>ZNF814</i> | 19 | 58385546 | 58385546 | G | T | nonsynonymous | NM_001144989 | c.C1212A | p.D404E |
| 292 | LUNG | <i>ADAM33</i> | 20 | 3650220 | 3650220 | T | G | nonsynonymous | NM_025220 | c.A2305C | p.T769P |
| 293 | LUNG | <i>TPM2</i> | 9 | 35683240 | 35683240 | - | G | splicing | NM_003289 | c.773-2->C | |
| 293 | LUNG | <i>AIMIL</i> | 1 | 26671690 | 26671690 | A | G | nonsynonymous | NM_001039775 | c.T1459C | p.S487P |
| 293 | LUNG | <i>ZNF517</i> | 8 | 146033347 | 146033347 | T | C | nonsynonymous | NM_213605 | c.T1046C | p.V349A |
| 293 | LUNG | <i>CCDC144NL</i> | 17 | 20769896 | 20769896 | G | T | nonsynonymous | NM_001004306 | c.C536A | p.T179N |
| 294 | LUNG | <i>CRIPAK</i> | 4 | 1388946 | 1388976 | GGAGTGTT CGCCTGCT CACACGTG CCGATGC | - | frameshift | NM_175918 | c.647_677del | p.W216fs |
| 294 | LUNG | <i>TUBGCP3</i> | 13 | 113201853 | 113201867 | TGGGAAAG TCGCGCG | - | nonframeshift | NM_001286279 | c.1235_1249del | p.412_417del |
| 295 | LUNG | <i>KRTAP4-6</i> | 17 | 39296135 | 39296135 | G | A | nonsynonymous | NM_030976 | c.C605T | p.S202F |
| 295 | LUNG | <i>ARSD</i> | X | 2836181 | 2836181 | A | T | nonsynonymous | NM_001669 | c.T527A | p.M176K |
| 295 | LUNG | <i>ARSD</i> | X | 2836184 | 2836184 | C | T | nonsynonymous | NM_001669 | c.G524A | p.G175D |
| 296 | LUNG | <i>KRTAP5-1</i> | 11 | 1606121 | 1606150 | CCACAGCC ACCCTTGG ATCCCCCA CAAGAG | - | nonframeshift | NM_001005922 | c.330_359del | p.110_120del |
| 296 | LUNG | <i>SMPD1</i> | 11 | 6411931 | 6411942 | CTGGTGCT GGCG | - | nonframeshift | NM_000543 | c.103_114del | p.35_38del |
| 296 | LUNG | <i>TNRC6A</i> | 16 | 24788423 | 24788434 | GCAGCCAC AGCC | - | nonframeshift | NM_014494 | c.333_344del | p.111_115del |

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|-----|------|-----------------|----|-----------|-----------|----------------------------------|-----|---------------|--------------|-------------------|----------------|
| 296 | LUNG | <i>DLL1</i> | 6 | 170592884 | 170592884 | T | G | nonsynonymous | NM_005618 | c.A1483C | p.T495P |
| 297 | LUNG | <i>HLA-DRB1</i> | 6 | 32551970 | 32551970 | T | G | nonsynonymous | NM_002124 | c.A286C | p.I96L |
| 298 | LUNG | <i>FAM90A1</i> | 12 | 8374781 | 8374781 | - | ACG | nonframeshift | NM_018088 | c.1031_1032insCGT | p.T344delinsTV |
| 298 | LUNG | <i>KRT3</i> | 12 | 53189414 | 53189431 | CCAAAGCC ACCAGCCC CT | - | nonframeshift | NM_057088 | c.396_413del | p.132_138del |
| 298 | LUNG | <i>TPRX1</i> | 19 | 48305543 | 48305566 | GGGCCTGG GATCGGGC CTGGGTTC | - | nonframeshift | NM_198479 | c.702_725del | p.234_242del |
| 299 | LUNG | <i>FAM90A1</i> | 12 | 8374781 | 8374781 | - | ACG | nonframeshift | NM_018088 | c.1031_1032insCGT | p.T344delinsTV |
| 299 | LUNG | <i>MAZ</i> | 16 | 29821421 | 29821429 | GCGGCGGC A | - | nonframeshift | NM_002383 | c.1303_1311del | p.435_437del |
| 299 | LUNG | <i>RALY</i> | 20 | 32664864 | 32664864 | - | CAG | nonframeshift | NM_016732 | c.689_690insCAG | p.A230delinsAS |
| 299 | LUNG | <i>ARSD</i> | X | 2835999 | 2836007 | CCACGCCG G | - | nonframeshift | NM_001669 | c.701_709del | p.234_237del |
| 299 | LUNG | <i>HSPG2</i> | 1 | 22180824 | 22180824 | G | T | nonsynonymous | NM_005529 | c.C6301A | p.R2101S |
| 299 | LUNG | <i>ARHGEF11</i> | 1 | 156939115 | 156939115 | C | A | nonsynonymous | NM_014784 | c.G664T | p.G222C |
| 299 | LUNG | <i>KALRN</i> | 3 | 124393451 | 124393451 | G | T | nonsynonymous | NM_007064 | c.G2092T | p.G698W |
| 299 | LUNG | <i>ABTB1</i> | 3 | 127396073 | 127396073 | C | A | nonsynonymous | NM_172027 | c.C706A | p.R236S |
| 299 | LUNG | <i>NUB1</i> | 7 | 151071306 | 151071306 | G | T | nonsynonymous | NM_001243351 | c.G1444T | p.G482W |
| 299 | LUNG | <i>GLB1L3</i> | 11 | 134152004 | 134152004 | G | T | nonsynonymous | NM_001080407 | c.G517T | p.G173C |
| 299 | LUNG | <i>ERICH6B</i> | 13 | 46170728 | 46170728 | T | C | nonsynonymous | NM_182542 | c.A413G | p.E138G |
| 299 | LUNG | <i>ERICH6B</i> | 13 | 46170735 | 46170735 | C | T | nonsynonymous | NM_182542 | c.G406A | p.E136K |
| 299 | LUNG | <i>ERICH6B</i> | 13 | 46170737 | 46170737 | T | C | nonsynonymous | NM_182542 | c.A404G | p.E135G |
| 299 | LUNG | <i>POMT2</i> | 14 | 77762518 | 77762518 | G | T | nonsynonymous | NM_013382 | c.C1105A | p.R369S |

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|-----|------|-----------------|----|-----------|-----------|-----|---|---------------|--------------|----------------|--------------|
| 299 | LUNG | <i>WFIKKN1</i> | 16 | 681422 | 681422 | C | A | nonsynonymous | NM_053284 | c.C169A | p.Q57K |
| 299 | LUNG | <i>SLC5A2</i> | 16 | 31500065 | 31500065 | G | A | nonsynonymous | NM_003041 | c.G1252A | p.G418S |
| 299 | LUNG | <i>SRCIN1</i> | 17 | 36719589 | 36719589 | C | A | nonsynonymous | NM_025248 | c.G710T | p.R237L |
| 299 | LUNG | <i>MGAT5B</i> | 17 | 74900350 | 74900350 | G | T | nonsynonymous | NM_001199172 | c.G536T | p.W179L |
| 299 | LUNG | <i>TNRC6C</i> | 17 | 76047338 | 76047338 | G | T | nonsynonymous | NM_001142640 | c.G2195T | p.G732V |
| 299 | LUNG | <i>ZNF653</i> | 19 | 11606911 | 11606911 | G | T | nonsynonymous | NM_138783 | c.C413A | p.P138Q |
| 299 | LUNG | <i>ARSD</i> | X | 2835989 | 2835989 | A | C | nonsynonymous | NM_001669 | c.T719G | p.F240C |
| 299 | LUNG | <i>ARSD</i> | X | 2835995 | 2835995 | C | A | nonsynonymous | NM_001669 | c.G713T | p.C238F |
| 299 | LUNG | <i>ARSD</i> | X | 2836238 | 2836238 | G | A | nonsynonymous | NM_001669 | c.C470T | p.S157F |
| 299 | LUNG | <i>SHROOM2</i> | X | 9863840 | 9863840 | G | T | nonsynonymous | NM_001649 | c.G1892T | p.R631L |
| 2 | LUNG | <i>GOLGA2</i> | 9 | 131020796 | 131020798 | CCT | - | nonframeshift | NM_004486 | c.2144_2146del | p.715_716del |
| 2 | LUNG | <i>CHST15</i> | 10 | 125780753 | 125780753 | G | - | frameshift | NM_001270765 | c.1366delC | p.R456fs |
| 2 | LUNG | <i>UR11</i> | 19 | 30500119 | 30500121 | TGA | - | nonframeshift | NM_003796 | c.894_896del | p.298_299del |
| 2 | LUNG | <i>OPRD1</i> | 1 | 29189601 | 29189601 | G | A | nonsynonymous | NM_000911 | c.G925A | p.A309T |
| 2 | LUNG | <i>DNAH14</i> | 1 | 225446883 | 225446883 | C | A | nonsynonymous | NM_001373 | c.C7067A | p.P2356Q |
| 2 | LUNG | <i>PITPNM1</i> | 11 | 67262982 | 67262982 | C | A | nonsynonymous | NM_004910 | c.G2409T | p.W803C |
| 2 | LUNG | <i>KRT78</i> | 12 | 53242498 | 53242498 | G | A | nonsynonymous | NM_173352 | c.C217T | p.P73S |
| 2 | LUNG | <i>HSD11B1L</i> | 19 | 5687355 | 5687355 | G | T | nonsynonymous | NM_198533 | c.G471T | p.K157N |
| 2 | LUNG | <i>FBN3</i> | 19 | 8203352 | 8203352 | C | A | nonsynonymous | NM_032447 | c.G962T | p.R321M |
| 300 | LUNG | <i>AIM1L</i> | 1 | 26671690 | 26671690 | A | G | nonsynonymous | NM_001039775 | c.T1459C | p.S487P |
| 300 | LUNG | <i>KANSL3</i> | 2 | 97274690 | 97274690 | G | T | nonsynonymous | NM_001115016 | c.C1495A | p.R499S |
| 300 | LUNG | <i>ANKRD18B</i> | 9 | 33568853 | 33568853 | C | A | nonsynonymous | NM_001244752 | c.C2950A | p.P984T |
| 300 | LUNG | <i>CEP295</i> | 11 | 93433048 | 93433048 | C | A | nonsynonymous | NM_033395 | c.C4970A | p.P1657Q |
| 300 | LUNG | <i>CESI</i> | 16 | 55862824 | 55862824 | C | T | nonsynonymous | NM_001025194 | c.G112A | p.V38I |
| 300 | LUNG | <i>SMARCA4</i> | 19 | 11098558 | 11098558 | G | T | nonsynonymous | NM_001128844 | c.G1076T | p.R359L |

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|-----|------|-----------------|----|-----------|-----------|---------------|-----|---------------|--------------|-----------------|----------------|
| 300 | LUNG | <i>DOCK6</i> | 19 | 11314993 | 11314993 | C | A | nonsynonymous | NM_020812 | c.G5103T | p.E1701D |
| 300 | LUNG | <i>AP2A1</i> | 19 | 50305358 | 50305358 | C | A | nonsynonymous | NM_014203 | c.C2074A | p.Q692K |
| 301 | LUNG | <i>HOMER1</i> | 14 | 23744801 | 23744803 | CAT | - | nonframeshift | NM_020834 | c.1634_1636del | p.545_546del |
| 301 | LUNG | <i>RALY</i> | 20 | 32664864 | 32664864 | - | CAG | nonframeshift | NM_016732 | c.689_690insCAG | p.A230delinsAS |
| 301 | LUNG | <i>TET2</i> | 4 | 106197041 | 106197041 | C | A | nonsynonymous | NM_001127208 | c.C5374A | p.H1792N |
| 301 | LUNG | <i>PII6</i> | 6 | 36927113 | 36927113 | C | A | nonsynonymous | NM_153370 | c.C364A | p.P122T |
| 301 | LUNG | <i>MUC12</i> | 7 | 100639147 | 100639147 | A | G | nonsynonymous | NM_001164462 | c.A5303G | p.E1768G |
| 301 | LUNG | <i>PTPN21</i> | 14 | 88946066 | 88946066 | G | T | nonsynonymous | NM_007039 | c.C1709A | p.P570Q |
| 301 | LUNG | <i>GOLGA6L2</i> | 15 | 23685583 | 23685583 | T | C | nonsynonymous | NM_001304388 | c.A2039G | p.E680G |
| 301 | LUNG | <i>ABI3</i> | 17 | 47297297 | 47297297 | T | C | nonsynonymous | NM_016428 | c.T626C | p.F209S |
| 301 | LUNG | <i>CCDC114</i> | 19 | 48815354 | 48815354 | C | A | nonsynonymous | NM_144577 | c.G269T | p.R90L |
| 302 | LUNG | <i>NCOA3</i> | 20 | 46279815 | 46279823 | GCAGCAGC A | - | nonframeshift | NM_001174087 | c.3738_3746del | p.1246_1249del |
| 302 | LUNG | <i>THAP5</i> | 7 | 108206359 | 108206359 | G | T | nonsynonymous | NM_001130475 | c.C188A | p.P63H |
| 302 | LUNG | <i>PCNXL3</i> | 11 | 65385887 | 65385887 | G | T | nonsynonymous | NM_032223 | c.G1054T | p.G352W |
| 302 | LUNG | <i>LTK</i> | 15 | 41805287 | 41805287 | C | A | nonsynonymous | NM_206961 | c.G75T | p.Q25H |
| 302 | LUNG | <i>CDH5</i> | 16 | 66436719 | 66436719 | C | A | nonsynonymous | NM_001795 | c.C2002A | p.R668S |
| 302 | LUNG | <i>CACNG4</i> | 17 | 64961193 | 64961193 | C | A | nonsynonymous | NM_014405 | c.C166A | p.R56S |
| 302 | LUNG | <i>ARSD</i> | X | 2836041 | 2836041 | A | T | nonsynonymous | NM_001669 | c.T667A | p.F223I |
| 302 | LUNG | <i>ARSD</i> | X | 2836047 | 2836047 | C | T | nonsynonymous | NM_001669 | c.G661A | p.G221S |
| 303 | LUNG | <i>ACTR8</i> | 3 | 53910109 | 53910109 | - | G | splicing | NM_022899 | c.779-2->C | |
| 303 | LUNG | <i>TSPYL1</i> | 6 | 116600465 | 116600465 | - | CAC | nonframeshift | NM_003309 | c.528_529insGTG | p.K177delinsVK |
| 303 | LUNG | <i>RALY</i> | 20 | 32664864 | 32664864 | - | CAG | nonframeshift | NM_016732 | c.689_690insCAG | p.A230delinsAS |
| 303 | LUNG | <i>NADK</i> | 1 | 1688550 | 1688550 | C | T | nonsynonymous | NM_001198994 | c.G775A | p.A259T |
| 303 | LUNG | <i>EMILIN1</i> | 2 | 27305290 | 27305290 | C | A | nonsynonymous | NM_007046 | c.C851A | p.P284Q |

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|-----|------|-------------------|----|-----------|-----------|----------------------|--------|---------------|--------------|--------------------------|-----------------|
| 303 | LUNG | <i>OGGI</i> | 3 | 9798475 | 9798475 | G | A | nonsynonymous | NM_002542 | c.G923A | p.G308E |
| 303 | LUNG | <i>MFSD1</i> | 3 | 158543803 | 158543803 | G | A | splicing | NM_022736 | c.1436-1G>A | |
| 303 | LUNG | <i>MUC4</i> | 3 | 195509939 | 195509939 | G | T | nonsynonymous | NM_018406 | c.C8512A | p.P2838T |
| 303 | LUNG | <i>LOC554223</i> | 6 | 29760256 | 29760256 | C | A | nonsynonymous | NM_001207043 | c.C341A | p.P114H |
| 303 | LUNG | <i>HLA-DRB1</i> | 6 | 32552091 | 32552091 | G | C | nonsynonymous | NM_002124 | c.C165G | p.F55L |
| 303 | LUNG | <i>HGC6.3</i> | 6 | 168377013 | 168377013 | G | T | nonsynonymous | NM_001129895 | c.C320A | p.S107Y |
| 303 | LUNG | <i>PSPH</i> | 7 | 56088902 | 56088902 | C | T | nonsynonymous | NM_004577 | c.G4A | p.V2I |
| 303 | LUNG | <i>DNHD1</i> | 11 | 6586998 | 6586998 | G | T | nonsynonymous | NM_144666 | c.G10830T | p.E3610D |
| 303 | LUNG | <i>GRAMD1B</i> | 11 | 123448159 | 123448159 | G | T | nonsynonymous | NM_020716 | c.G108T | p.Q36H |
| 303 | LUNG | <i>CMAS</i> | 12 | 22199413 | 22199413 | C | A | nonsynonymous | NM_018686 | c.C176A | p.P59H |
| 303 | LUNG | <i>FBN3</i> | 19 | 8212222 | 8212222 | C | T | nonsynonymous | NM_032447 | c.G143A | p.R48Q |
| 303 | LUNG | <i>RRAS</i> | 19 | 50143244 | 50143244 | C | A | nonsynonymous | NM_006270 | c.G112T | p.G38C |
| 303 | LUNG | <i>KLK10</i> | 19 | 51518060 | 51518060 | T | C | nonsynonymous | NM_002776 | c.A827G | p.N276S |
| 303 | LUNG | <i>SPIN4</i> | X | 62570672 | 62570672 | C | A | nonsynonymous | NM_001012968 | c.G27T | p.M9I |
| 304 | LUNG | <i>PCDHGA11</i> | 5 | 140802854 | 140802856 | CCT | - | nonframeshift | NM_018914 | c.2060_2062del | p.687_688del |
| 304 | LUNG | <i>HAVCR1</i> | 5 | 156479568 | 156479568 | - | GTT | nonframeshift | NM_012206 | c.476_477insAAC | p.T159delinsTT |
| 304 | LUNG | <i>NUTM2F</i> | 9 | 97080945 | 97080947 | AGA | - | nonframeshift | NM_017561 | c.2071_2073del | p.691_691del |
| 304 | LUNG | <i>CCDC180</i> | 9 | 100092968 | 100092968 | - | GAGGAG | nonframeshift | NM_020893 | c.2325_2326insGAG GAG | p.E775delinsEEE |
| 304 | LUNG | <i>KAT6B</i> | 10 | 76781837 | 76781848 | GAGGAGGA GGAC | - | nonframeshift | NM_012330 | c.3220_3231del | p.1074_1077del |
| 304 | LUNG | <i>ZRANB1</i> | 10 | 126673560 | 126673560 | - | A | frameshift | NM_017580 | c.2127dupA | p.X709delinsX |
| 304 | LUNG | <i>KRTAP10-10</i> | 21 | 46057613 | 46057627 | CTGCTGTG TGCCCTGT | - | nonframeshift | NM_181688 | c.279_293del | p.93_98del |
| 304 | LUNG | <i>RFPL1</i> | 22 | 29837567 | 29837569 | TCC | - | nonframeshift | NM_021026 | c.410_412del | p.137_138del |

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|-----|------|-----------------|----|-----------|-----------|-----|---|---------------|--------------|----------------|--------------|
| 304 | LUNG | <i>TRIOBP</i> | 22 | 38119755 | 38119757 | CAA | - | nonframeshift | NM_001039141 | c.1192_1194del | p.398_398del |
| 304 | LUNG | <i>PER3</i> | 1 | 7880589 | 7880589 | A | C | nonsynonymous | NM_016831 | c.A1822C | p.T608P |
| 304 | LUNG | <i>PRAMEF8</i> | 1 | 12979845 | 12979845 | T | C | nonsynonymous | NM_001012276 | c.T1037C | p.V346A |
| 304 | LUNG | <i>ARHGEF19</i> | 1 | 16535487 | 16535487 | G | C | nonsynonymous | NM_153213 | c.C63G | p.H21Q |
| 304 | LUNG | <i>MST1L</i> | 1 | 17084968 | 17084968 | G | C | nonsynonymous | NM_001271733 | c.C1507G | p.R503G |
| 304 | LUNG | <i>MST1L</i> | 1 | 17087262 | 17087262 | C | T | nonsynonymous | NM_001271733 | c.G322A | p.E108K |
| 304 | LUNG | <i>MST1L</i> | 1 | 17087465 | 17087465 | G | A | nonsynonymous | NM_001271733 | c.C200T | p.P67L |
| 304 | LUNG | <i>ZNF695</i> | 1 | 247150630 | 247150630 | A | C | nonsynonymous | NM_020394 | c.T1187G | p.I396S |
| 304 | LUNG | <i>HHATL</i> | 3 | 42738533 | 42738533 | G | T | nonsynonymous | NM_020707 | c.C970A | p.P324T |
| 304 | LUNG | <i>CYP8B1</i> | 3 | 42915841 | 42915841 | C | G | nonsynonymous | NM_004391 | c.G1468C | p.D490H |
| 304 | LUNG | <i>DNAH1</i> | 3 | 52378570 | 52378570 | A | G | nonsynonymous | NM_015512 | c.A1351G | p.K451E |
| 304 | LUNG | <i>JADE1</i> | 4 | 129770150 | 129770150 | G | T | nonsynonymous | NM_199320 | c.G312T | p.E104D |
| 304 | LUNG | <i>FAM172A</i> | 5 | 93217358 | 93217358 | T | A | nonsynonymous | NM_032042 | c.A604T | p.N202Y |
| 304 | LUNG | <i>SEMA6A</i> | 5 | 115782493 | 115782493 | T | G | nonsynonymous | NM_020796 | c.A2909C | p.Q970P |
| 304 | LUNG | <i>SRAI</i> | 5 | 139936825 | 139936825 | G | C | nonsynonymous | NM_001035235 | c.C94G | p.Q32E |
| 304 | LUNG | <i>PCDHGA6</i> | 5 | 140755573 | 140755573 | C | A | nonsynonymous | NM_018919 | c.C1923A | p.S641R |
| 304 | LUNG | <i>PDE6A</i> | 5 | 149314259 | 149314259 | A | G | nonsynonymous | NM_000440 | c.T497C | p.V166A |
| 304 | LUNG | <i>FAT2</i> | 5 | 150885263 | 150885263 | C | T | nonsynonymous | NM_001447 | c.G12913A | p.A4305T |
| 304 | LUNG | <i>HLA-A</i> | 6 | 29911260 | 29911260 | A | C | nonsynonymous | NM_002116 | c.A559C | p.T187P |
| 304 | LUNG | <i>KMT2C</i> | 7 | 151945007 | 151945007 | C | T | nonsynonymous | NM_170606 | c.G2512A | p.G838S |
| 304 | LUNG | <i>USP17L7</i> | 8 | 11990617 | 11990617 | C | A | nonsynonymous | NM_001256869 | c.G902T | p.R301L |
| 304 | LUNG | <i>CNTNAP3B</i> | 9 | 43822704 | 43822704 | G | A | nonsynonymous | NM_001201380 | c.G1258A | p.V420I |
| 304 | LUNG | <i>CYLC2</i> | 9 | 105767091 | 105767091 | C | A | nonsynonymous | NM_001340 | c.C295A | p.L99I |
| 304 | LUNG | <i>CTNNAL1</i> | 9 | 111718091 | 111718091 | G | T | stopgain | NM_003798 | c.C1608A | p.Y536X |
| 304 | LUNG | <i>AICF</i> | 10 | 52573772 | 52573772 | C | T | nonsynonymous | NM_138932 | c.G1192A | p.G398S |

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|-----|------|-----------------|----|-----------|-----------|-------------------------------|---|---------------|--------------|----------------|----------------|
| 304 | LUNG | <i>OR8U1</i> | 11 | 56143108 | 56143108 | C | G | nonsynonymous | NM_001005204 | c.C9G | p.H3Q |
| 304 | LUNG | <i>C16orf78</i> | 16 | 49411724 | 49411724 | G | A | nonsynonymous | NM_144602 | c.G233A | p.R78Q |
| 304 | LUNG | <i>DPEP3</i> | 16 | 68011576 | 68011576 | C | T | nonsynonymous | NM_022357 | c.G988A | p.D330N |
| 304 | LUNG | <i>NFATC3</i> | 16 | 68156751 | 68156751 | G | A | nonsynonymous | NM_173165 | c.G965A | p.G322D |
| 304 | LUNG | <i>TLDC1</i> | 16 | 84523025 | 84523025 | T | C | nonsynonymous | NM_020947 | c.A388G | p.T130A |
| 304 | LUNG | <i>MAP1LC3B</i> | 16 | 87432453 | 87432453 | G | C | nonsynonymous | NM_022818 | c.G73C | p.E25Q |
| 304 | LUNG | <i>DNAH9</i> | 17 | 11523081 | 11523081 | C | T | stopgain | NM_001372 | c.C1333T | p.Q445X |
| 304 | LUNG | <i>KRT38</i> | 17 | 39593722 | 39593722 | C | T | nonsynonymous | NM_006771 | c.G1313A | p.G438D |
| 304 | LUNG | <i>PGLYRP2</i> | 19 | 15586619 | 15586619 | G | A | nonsynonymous | NM_052890 | c.C862T | p.R288W |
| 304 | LUNG | <i>IL10RB</i> | 21 | 34652167 | 34652167 | G | A | nonsynonymous | NM_000628 | c.G442A | p.V148M |
| 304 | LUNG | <i>PRR5</i> | 22 | 45132831 | 45132831 | G | A | nonsynonymous | NM_181333 | c.G871A | p.E291K |
| 304 | LUNG | <i>ARSD</i> | X | 2835863 | 2835863 | G | T | nonsynonymous | NM_001669 | c.C845A | p.A282D |
| 304 | LUNG | <i>ARSD</i> | X | 2836041 | 2836041 | A | T | nonsynonymous | NM_001669 | c.T667A | p.F223I |
| 304 | LUNG | <i>ARSD</i> | X | 2836047 | 2836047 | C | T | nonsynonymous | NM_001669 | c.G661A | p.G221S |
| 304 | LUNG | <i>ARSD</i> | X | 2836181 | 2836181 | A | T | nonsynonymous | NM_001669 | c.T527A | p.M176K |
| 304 | LUNG | <i>ARSD</i> | X | 2836184 | 2836184 | C | T | nonsynonymous | NM_001669 | c.G524A | p.G175D |
| 304 | LUNG | <i>ARSD</i> | X | 2836211 | 2836211 | A | T | nonsynonymous | NM_001669 | c.T497A | p.L166Q |
| 305 | LUNG | <i>DNTTIP1</i> | 20 | 44421350 | 44421350 | T | G | nonsynonymous | NM_052951 | c.T140G | p.V47G |
| 305 | LUNG | <i>ARSD</i> | X | 2836041 | 2836041 | A | T | nonsynonymous | NM_001669 | c.T667A | p.F223I |
| 305 | LUNG | <i>ARSD</i> | X | 2836047 | 2836047 | C | T | nonsynonymous | NM_001669 | c.G661A | p.G221S |
| 306 | LUNG | <i>RP1L1</i> | 8 | 10466004 | 10466024 | CTGGGCCT CCCCTTCA GCCTC | - | nonframeshift | NM_178857 | c.5584_5604del | p.1862_1868del |
| 306 | LUNG | <i>WDR92</i> | 2 | 68361900 | 68361900 | T | G | nonsynonymous | NM_138458 | c.A800C | p.H267P |
| 306 | LUNG | <i>COL5A2</i> | 2 | 189928729 | 189928729 | G | T | nonsynonymous | NM_000393 | c.C1747A | p.P583T |

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|-----|------|------------------|----|-----------|-----------|---|---|---------------|--------------|----------------|--------------|
| 306 | LUNG | <i>RP1L1</i> | 8 | 10467625 | 10467625 | T | A | nonsynonymous | NM_178857 | c.A3983T | p.E1328V |
| 306 | LUNG | <i>RP1L1</i> | 8 | 10467626 | 10467626 | C | T | nonsynonymous | NM_178857 | c.G3982A | p.E1328K |
| 306 | LUNG | <i>RP1L1</i> | 8 | 10467628 | 10467628 | G | A | nonsynonymous | NM_178857 | c.C3980T | p.T1327I |
| 306 | LUNG | <i>RP1L1</i> | 8 | 10467629 | 10467629 | T | C | nonsynonymous | NM_178857 | c.A3979G | p.T1327A |
| 306 | LUNG | <i>RP1L1</i> | 8 | 10467637 | 10467637 | T | C | nonsynonymous | NM_178857 | c.A3971G | p.E1324G |
| 306 | LUNG | <i>TPSAB1</i> | 16 | 1291318 | 1291318 | G | C | nonsynonymous | NM_003294 | c.G226C | p.V76L |
| 306 | LUNG | <i>TPSD1</i> | 16 | 1306802 | 1306802 | A | G | nonsynonymous | NM_012217 | c.A259G | p.I87V |
| 306 | LUNG | <i>SDK2</i> | 17 | 71377042 | 71377042 | C | T | nonsynonymous | NM_001144952 | c.G4753A | p.E1585K |
| 306 | LUNG | <i>OGFOD3</i> | 17 | 80373480 | 80373480 | C | A | nonsynonymous | NM_024648 | c.G98T | p.R33L |
| 306 | LUNG | <i>ZC3H4</i> | 19 | 47569719 | 47569719 | C | A | nonsynonymous | NM_015168 | c.G3806T | p.S1269I |
| 306 | LUNG | <i>ARSD</i> | X | 2835989 | 2835989 | A | C | nonsynonymous | NM_001669 | c.T719G | p.F240C |
| 306 | LUNG | <i>ARSD</i> | X | 2835995 | 2835995 | C | A | nonsynonymous | NM_001669 | c.G713T | p.C238F |
| 307 | LUNG | <i>ATF7IP</i> | 12 | 14577376 | 14577405 | CTGGTGAT GCCCTTC TGGTGATG TGTCCC | - | nonframeshift | NM_018179 | c.527_556del | p.176_186del |
| 307 | LUNG | <i>TUBGCP3</i> | 13 | 113201853 | 113201867 | TGGGAAAG TCGCGCG | - | nonframeshift | NM_001286279 | c.1235_1249del | p.412_417del |
| 307 | LUNG | <i>GSE1</i> | 16 | 85690001 | 85690006 | GAGCGT | - | nonframeshift | NM_014615 | c.1042_1047del | p.348_349del |
| 307 | LUNG | <i>TPRX1</i> | 19 | 48305543 | 48305566 | GGGCCTGG GATCGGGC CTGGGTTTC | - | nonframeshift | NM_198479 | c.702_725del | p.234_242del |
| 307 | LUNG | <i>DHRS12</i> | 13 | 52345460 | 52345460 | G | A | nonsynonymous | NM_001031719 | c.C731T | p.P244L |
| 307 | LUNG | <i>C14orf105</i> | 14 | 57948374 | 57948374 | A | C | nonsynonymous | NM_018168 | c.T398G | p.V133G |
| 307 | LUNG | <i>CDK10</i> | 16 | 89753128 | 89753128 | C | G | nonsynonymous | NM_052988 | c.C10G | p.P4A |

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|-----|------|-----------------|----|-----------|-----------|------------------|-------------------------|---------------|--------------|---------------------------------|-----------------------|
| 307 | LUNG | <i>ARSD</i> | X | 2836041 | 2836041 | A | T | nonsynonymous | NM_001669 | c.T667A | p.F223I |
| 307 | LUNG | <i>ARSD</i> | X | 2836047 | 2836047 | C | T | nonsynonymous | NM_001669 | c.G661A | p.G221S |
| 315 | LUNG | <i>FAM90A1</i> | 12 | 8374781 | 8374781 | - | ACG | nonframeshift | NM_018088 | c.1031_1032insCGT | p.T344delinsTV |
| 315 | LUNG | <i>ARSD</i> | X | 2836211 | 2836211 | A | T | nonsynonymous | NM_001669 | c.T497A | p.L166Q |
| 315 | LUNG | <i>ARSD</i> | X | 2836238 | 2836238 | G | A | nonsynonymous | NM_001669 | c.C470T | p.S157F |
| 316 | LUNG | <i>DCAF8</i> | 1 | 160209874 | 160209885 | CTCTTCTTC CTC | - | nonframeshift | NM_015726 | c.325_336del | p.109_112del |
| 316 | LUNG | <i>UBXN11</i> | 1 | 26608843 | 26608843 | C | A | nonsynonymous | NM_001077262 | c.G1150T | p.G384C |
| 316 | LUNG | <i>PABPC1</i> | 8 | 101718965 | 101718965 | G | A | nonsynonymous | NM_002568 | c.C1516T | p.R506C |
| 316 | LUNG | <i>PABPC1</i> | 8 | 101718968 | 101718968 | C | T | nonsynonymous | NM_002568 | c.G1513A | p.V505I |
| 316 | LUNG | <i>PABPC1</i> | 8 | 101719201 | 101719201 | A | G | nonsynonymous | NM_002568 | c.T1361C | p.I454T |
| 316 | LUNG | <i>RBMX</i> | X | 135961560 | 135961560 | C | G | nonsynonymous | NM_002139 | c.G27C | p.K9N |
| 317 | LUNG | <i>AHNAK2</i> | 14 | 105415229 | 105415229 | T | C | nonsynonymous | NM_138420 | c.A6559G | p.M2187V |
| 317 | LUNG | <i>ARSD</i> | X | 2836181 | 2836181 | A | T | nonsynonymous | NM_001669 | c.T527A | p.M176K |
| 317 | LUNG | <i>ARSD</i> | X | 2836184 | 2836184 | C | T | nonsynonymous | NM_001669 | c.G524A | p.G175D |
| 317 | LUNG | <i>ARSD</i> | X | 2836211 | 2836211 | A | T | nonsynonymous | NM_001669 | c.T497A | p.L166Q |
| 318 | LUNG | <i>WDR41</i> | 5 | 76729098 | 76729098 | A | - | frameshift | NM_018268 | c.1242delT | p.F414fs |
| 318 | LUNG | <i>MAK16</i> | 8 | 33354236 | 33354238 | GAT | - | nonframeshift | NM_032509 | c.616_618del | p.206_206del |
| 318 | LUNG | <i>KRTAP4-5</i> | 17 | 39305775 | 39305775 | - | GGCAGCA GCTGGGG C | nonframeshift | NM_033188 | c.244_245insGCCCC AGCTGCTGCC | p.Q82delinsRPSC CQ |
| 318 | LUNG | <i>FBF1</i> | 17 | 73910880 | 73910891 | CGCTCGGC CTCG | - | nonframeshift | NM_001080542 | c.2706_2717del | p.902_906del |
| 318 | LUNG | <i>RBMX</i> | X | 135960146 | 135960146 | - | AA | frameshift | NM_002139 | c.315_316insTT | p.P106fs |
| 318 | LUNG | <i>PRAMEF2</i> | 1 | 12918986 | 12918986 | G | T | nonsynonymous | NM_023014 | c.G122T | p.R41M |

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|-----|------|-----------------|----|-----------|-----------|---|---|---------------|--------------|-----------|----------|
| 318 | LUNG | <i>PRAMEF2</i> | 1 | 12918997 | 12918997 | A | C | nonsynonymous | NM_023014 | c.A133C | p.S45R |
| 318 | LUNG | <i>CLCNKA</i> | 1 | 16357159 | 16357159 | C | T | nonsynonymous | NM_004070 | c.C1612T | p.R538C |
| 318 | LUNG | <i>UBXN11</i> | 1 | 26608849 | 26608849 | T | C | nonsynonymous | NM_001077262 | c.A1144G | p.S382G |
| 318 | LUNG | <i>XPRI</i> | 1 | 180794439 | 180794439 | A | G | nonsynonymous | NM_004736 | c.A1093G | p.T365A |
| 318 | LUNG | <i>PRSS12</i> | 4 | 119259449 | 119259449 | C | T | nonsynonymous | NM_003619 | c.G523A | p.G175S |
| 318 | LUNG | <i>KIAA0922</i> | 4 | 154519764 | 154519764 | A | G | nonsynonymous | NM_015196 | c.A2143G | p.M715V |
| 318 | LUNG | <i>VAR5</i> | 6 | 31762851 | 31762851 | G | C | nonsynonymous | NM_006295 | c.C144G | p.S48R |
| 318 | LUNG | <i>HAUS6</i> | 9 | 19058636 | 19058636 | C | T | nonsynonymous | NM_017645 | c.G2129A | p.R710Q |
| 318 | LUNG | <i>UPF3A</i> | 13 | 115052084 | 115052084 | C | T | nonsynonymous | NM_023011 | c.C611T | p.A204V |
| 318 | LUNG | <i>LGALS9B</i> | 17 | 20370767 | 20370767 | G | C | nonsynonymous | NM_001042685 | c.C17G | p.S6C |
| 318 | LUNG | <i>TIAF1</i> | 17 | 27401105 | 27401105 | G | A | nonsynonymous | NM_004740 | c.C113T | p.P38L |
| 318 | LUNG | <i>CWC25</i> | 17 | 36966833 | 36966833 | C | T | nonsynonymous | NM_017748 | c.G514A | p.E172K |
| 318 | LUNG | <i>KRTAP4-6</i> | 17 | 39296361 | 39296361 | A | G | nonsynonymous | NM_030976 | c.T379C | p.S127P |
| 318 | LUNG | <i>HSD17B1</i> | 17 | 40705462 | 40705462 | A | G | nonsynonymous | NM_000413 | c.A271G | p.N91D |
| 318 | LUNG | <i>DNAH17</i> | 17 | 76497320 | 76497320 | G | A | nonsynonymous | NM_173628 | c.C5429T | p.S1810F |
| 318 | LUNG | <i>CEP131</i> | 17 | 79164443 | 79164443 | G | A | nonsynonymous | NM_014984 | c.C3103T | p.R1035W |
| 318 | LUNG | <i>PLIN4</i> | 19 | 4511746 | 4511746 | A | T | nonsynonymous | NM_001080400 | c.T2184A | p.N728K |
| 318 | LUNG | <i>FFAR3</i> | 19 | 35849883 | 35849883 | C | G | nonsynonymous | NM_005304 | c.C91G | p.L31V |
| 318 | LUNG | <i>NPHS1</i> | 19 | 36336982 | 36336982 | G | A | nonsynonymous | NM_004646 | c.C1555T | p.P519S |
| 318 | LUNG | <i>FAM98C</i> | 19 | 38899459 | 38899459 | G | C | nonsynonymous | NM_174905 | c.G987C | p.W329C |
| 318 | LUNG | <i>ZSCAN18</i> | 19 | 58600109 | 58600109 | C | T | nonsynonymous | NM_023926 | c.G499A | p.A167T |
| 318 | LUNG | <i>LAMA5</i> | 20 | 60886008 | 60886008 | G | A | nonsynonymous | NM_005560 | c.C10231T | p.R3411W |
| 318 | LUNG | <i>ARSD</i> | X | 2836211 | 2836211 | A | T | nonsynonymous | NM_001669 | c.T497A | p.L166Q |
| 318 | LUNG | <i>RBMX</i> | X | 135956462 | 135956462 | G | C | nonsynonymous | NM_002139 | c.C1015G | p.R339G |
| 318 | LUNG | <i>RBMX</i> | X | 135956467 | 135956467 | C | T | nonsynonymous | NM_002139 | c.G1010A | p.S337N |

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|-----|------|-----------------|----|-----------|-----------|-------|--------|---------------|--------------|--------------------------|-----------------|
| 318 | LUNG | <i>RBMX</i> | X | 135956506 | 135956506 | C | G | nonsynonymous | NM_002139 | c.G971C | p.R324P |
| 318 | LUNG | <i>RBMX</i> | X | 135958704 | 135958704 | G | C | nonsynonymous | NM_002139 | c.C499G | p.P167A |
| 318 | LUNG | <i>RBMX</i> | X | 135958730 | 135958730 | C | A | nonsynonymous | NM_002139 | c.G473T | p.G158V |
| 318 | LUNG | <i>RBMX</i> | X | 135960119 | 135960119 | C | T | nonsynonymous | NM_002139 | c.G343A | p.G115R |
| 318 | LUNG | <i>RBMX</i> | X | 135961560 | 135961560 | C | G | nonsynonymous | NM_002139 | c.G27C | p.K9N |
| 319 | LUNG | <i>CCDC180</i> | 9 | 100092968 | 100092968 | - | GAGGAG | nonframeshift | NM_020893 | c.2325_2326insGAG GAG | p.E775delinsEEE |
| 319 | LUNG | <i>ABCA1</i> | 9 | 107556793 | 107556793 | - | A | splicing | NM_005502 | c.5383-2->T | |
| 320 | LUNG | <i>MICA</i> | 6 | 31380158 | 31380161 | GCTG | - | frameshift | NM_001177519 | c.949_952del | p.A317fs |
| 320 | LUNG | <i>SDC3</i> | 1 | 31349983 | 31349983 | C | T | nonsynonymous | NM_014654 | c.G286A | p.A96T |
| 320 | LUNG | <i>C1orf216</i> | 1 | 36181813 | 36181813 | G | C | nonsynonymous | NM_152374 | c.C110G | p.A37G |
| 320 | LUNG | <i>DLEC1</i> | 3 | 38163900 | 38163900 | C | T | nonsynonymous | NM_007337 | c.C5141T | p.P1714L |
| 320 | LUNG | <i>PXK</i> | 3 | 58395842 | 58395842 | A | T | nonsynonymous | NM_017771 | c.A1421T | p.N474I |
| 320 | LUNG | <i>RIC1</i> | 9 | 5747390 | 5747390 | C | A | nonsynonymous | NM_020829 | c.C1337A | p.S446Y |
| 320 | LUNG | <i>FAM120A</i> | 9 | 96214544 | 96214544 | G | C | nonsynonymous | NM_001286722 | c.G347C | p.R116P |
| 320 | LUNG | <i>MAP4K5</i> | 14 | 50998664 | 50998664 | T | C | nonsynonymous | NM_198794 | c.A104G | p.Y35C |
| 320 | LUNG | <i>SMEK1</i> | 14 | 91957110 | 91957110 | G | A | nonsynonymous | NM_001284280 | c.C179T | p.T60I |
| 320 | LUNG | <i>OR3A3</i> | 17 | 3324175 | 3324175 | C | T | nonsynonymous | NM_012373 | c.C314T | p.A105V |
| 320 | LUNG | <i>ARSD</i> | X | 2833605 | 2833605 | C | T | stopgain | NM_001669 | c.G992A | p.W331X |
| 320 | LUNG | <i>ARSD</i> | X | 2833638 | 2833638 | C | T | nonsynonymous | NM_001669 | c.G959A | p.G320D |
| 320 | LUNG | <i>ARSD</i> | X | 2833643 | 2833643 | C | A | nonsynonymous | NM_001669 | c.G954T | p.Q318H |
| 320 | LUNG | <i>IL9R</i> | X | 155239824 | 155239824 | A | G | nonsynonymous | NM_002186 | c.A1316G | p.N439S |
| 320 | LUNG | <i>IL9R</i> | X | 155239827 | 155239827 | A | G | nonsynonymous | NM_002186 | c.A1319G | p.N440S |
| 321 | LUNG | <i>MST1L</i> | 1 | 17087542 | 17087546 | GTGCT | - | frameshift | NM_001271733 | c.119_123del | p.Q40fs |
| 321 | LUNG | <i>ALG1L2</i> | 3 | 129814935 | 129814935 | C | - | frameshift | NM_001136152 | c.468delC | p.G156fs |

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|-----|------|------------------|----|-----------|-----------|-----|---|---------------|--------------|--------------|--------------|
| 321 | LUNG | <i>CDSN</i> | 6 | 31084943 | 31084945 | CTT | - | nonframeshift | NM_001264 | c.447_449del | p.149_150del |
| 321 | LUNG | <i>PSORS1C2</i> | 6 | 31105858 | 31105858 | G | - | frameshift | NM_014069 | c.281delC | p.P94fs |
| 321 | LUNG | <i>C7orf61</i> | 7 | 100061151 | 100061151 | G | - | frameshift | NM_001004323 | c.222delC | p.P74fs |
| 321 | LUNG | <i>CTAGE5</i> | 14 | 39784005 | 39784006 | TA | - | splicing | NM_005930.3 | c.1356+2TA>- | |
| 321 | LUNG | <i>MST1L</i> | 1 | 17087465 | 17087465 | G | A | nonsynonymous | NM_001271733 | c.C200T | p.P67L |
| 321 | LUNG | <i>CYP4Z1</i> | 1 | 47550551 | 47550551 | C | T | nonsynonymous | NM_178134 | c.C673T | p.R225C |
| 321 | LUNG | <i>VILL</i> | 3 | 38035950 | 38035950 | G | A | nonsynonymous | NM_015873 | c.G334A | p.G112R |
| 321 | LUNG | <i>MST1</i> | 3 | 49726070 | 49726070 | G | A | nonsynonymous | NM_020998 | c.C55T | p.P19S |
| 321 | LUNG | <i>LXN</i> | 3 | 158384463 | 158384463 | C | T | nonsynonymous | NM_020169 | c.G641A | p.R214H |
| 321 | LUNG | <i>SLIT3</i> | 5 | 168180047 | 168180047 | C | T | nonsynonymous | NM_003062 | c.G1886A | p.S629N |
| 321 | LUNG | <i>HIST1H1A</i> | 6 | 26017758 | 26017758 | G | T | nonsynonymous | NM_005325 | c.C203A | p.A68E |
| 321 | LUNG | <i>CDSN</i> | 6 | 31084964 | 31084964 | T | C | nonsynonymous | NM_001264 | c.A428G | p.N143S |
| 321 | LUNG | <i>DNAH8</i> | 6 | 38941567 | 38941567 | G | A | nonsynonymous | NM_001206927 | c.G12656A | p.R4219Q |
| 321 | LUNG | <i>TPK1</i> | 7 | 144462990 | 144462990 | C | T | nonsynonymous | NM_022445 | c.G98A | p.R33H |
| 321 | LUNG | <i>APTX</i> | 9 | 32984657 | 32984657 | A | T | nonsynonymous | NM_001195248 | c.T784A | p.L262M |
| 321 | LUNG | <i>SPATA31C1</i> | 9 | 90535756 | 90535756 | G | C | nonsynonymous | NM_001145124 | c.G934C | p.D312H |
| 321 | LUNG | <i>SARDH</i> | 9 | 136597592 | 136597592 | T | C | nonsynonymous | NM_007101 | c.A463G | p.I155V |
| 321 | LUNG | <i>EXD3</i> | 9 | 140250770 | 140250770 | G | A | nonsynonymous | NM_017820 | c.C707T | p.A236V |
| 321 | LUNG | <i>FAM21C</i> | 10 | 46250545 | 46250545 | A | T | nonsynonymous | NM_015262 | c.A1402T | p.S468C |
| 321 | LUNG | <i>FAM21C</i> | 10 | 46250563 | 46250563 | C | G | nonsynonymous | NM_015262 | c.C1420G | p.R474G |
| 321 | LUNG | <i>USP54</i> | 10 | 75258901 | 75258901 | C | G | nonsynonymous | NM_152586 | c.G4541C | p.G1514A |
| 321 | LUNG | <i>DMBT1</i> | 10 | 124358584 | 124358584 | A | G | nonsynonymous | NM_007329 | c.A3251G | p.H1084R |
| 321 | LUNG | <i>OR9G1</i> | 11 | 56468440 | 56468440 | G | T | nonsynonymous | NM_001005213 | c.G577T | p.G193C |
| 321 | LUNG | <i>AHNAK2</i> | 14 | 105407326 | 105407326 | G | A | nonsynonymous | NM_138420 | c.C14462T | p.P4821L |
| 321 | LUNG | <i>AHNAK2</i> | 14 | 105418502 | 105418502 | G | T | nonsynonymous | NM_138420 | c.C3286A | p.L1096I |

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|-----|------|-----------------|----|-----------|-----------|---------------------|---|---------------|--------------|----------------|----------|
| 321 | LUNG | <i>WDR90</i> | 16 | 716543 | 716543 | G | A | nonsynonymous | NM_145294 | c.G4829A | p.R1610Q |
| 321 | LUNG | <i>TPSAB1</i> | 16 | 1291454 | 1291454 | G | A | nonsynonymous | NM_003294 | c.G253A | p.A85T |
| 321 | LUNG | <i>PELP1</i> | 17 | 4607235 | 4607235 | G | A | nonsynonymous | NM_014389 | c.C322T | p.P108S |
| 321 | LUNG | <i>KCNJ18</i> | 17 | 21319079 | 21319079 | C | A | nonsynonymous | NM_021012 | c.C425A | p.T142N |
| 321 | LUNG | <i>UTP6</i> | 17 | 30216384 | 30216384 | G | C | nonsynonymous | NM_018428 | c.C463G | p.R155G |
| 321 | LUNG | <i>EPN3</i> | 17 | 48619274 | 48619274 | T | C | nonsynonymous | NM_017957 | c.T1655C | p.M552T |
| 321 | LUNG | <i>FDXR</i> | 17 | 72859001 | 72859001 | T | C | nonsynonymous | NM_024417 | c.A1414G | p.T472A |
| 321 | LUNG | <i>SLC35G4</i> | 18 | 11609994 | 11609994 | C | T | nonsynonymous | NM_001282300 | c.C400T | p.R134C |
| 321 | LUNG | <i>SLC35G4</i> | 18 | 11610001 | 11610001 | A | G | nonsynonymous | NM_001282300 | c.A407G | p.H136R |
| 321 | LUNG | <i>SLC35G4</i> | 18 | 11610024 | 11610024 | A | G | nonsynonymous | NM_001282300 | c.A430G | p.I144V |
| 321 | LUNG | <i>ANKRD30B</i> | 18 | 14780019 | 14780019 | G | T | nonsynonymous | NM_001145029 | c.G1481T | p.G494V |
| 321 | LUNG | <i>CYP4F2</i> | 19 | 15989730 | 15989730 | T | C | nonsynonymous | NM_001082 | c.A1414G | p.T472A |
| 321 | LUNG | <i>ZNF227</i> | 19 | 44721993 | 44721993 | G | C | nonsynonymous | NM_001289166 | c.G48C | p.M16I |
| 321 | LUNG | <i>BCAM</i> | 19 | 45316704 | 45316704 | T | A | nonsynonymous | NM_005581 | c.T611A | p.M204K |
| 321 | LUNG | <i>EXOC3L2</i> | 19 | 45716471 | 45716471 | G | T | nonsynonymous | NM_138568 | c.C1086A | p.D362E |
| 321 | LUNG | <i>VNIR2</i> | 19 | 53761857 | 53761857 | G | T | nonsynonymous | NM_173856 | c.G229T | p.V77F |
| 321 | LUNG | <i>KIR2DL4</i> | 19 | 55317456 | 55317456 | G | A | nonsynonymous | NM_001080770 | c.G412A | p.A138T |
| 321 | LUNG | <i>HIRA</i> | 22 | 19343298 | 19343298 | G | A | nonsynonymous | NM_003325 | c.C2546T | p.P849L |
| 321 | LUNG | <i>ATRX</i> | X | 76937963 | 76937963 | G | C | nonsynonymous | NM_000489 | c.C2785G | p.Q929E |
| 321 | LUNG | <i>NAP1L3</i> | X | 92927634 | 92927634 | G | C | nonsynonymous | NM_004538 | c.C670G | p.P224A |
| 321 | LUNG | <i>ARL13A</i> | X | 100242536 | 100242536 | C | T | nonsynonymous | NM_001162491 | c.C644T | p.S215L |
| 322 | LUNG | <i>HDGFRP2</i> | 19 | 4499633 | 4499647 | AGCTGGCC GGGGAGG | - | frameshift | NM_001001520 | c.1721_1722del | p.K574fs |
| 322 | LUNG | <i>CCSER1</i> | 4 | 91645114 | 91645114 | C | T | nonsynonymous | NM_001145065 | c.C1982T | p.P661L |
| 322 | LUNG | <i>RP1L1</i> | 8 | 10467625 | 10467625 | T | A | nonsynonymous | NM_178857 | c.A3983T | p.E1328V |

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|-----|------|-----------------|----|-----------|-----------|---------------|-------------------------|---------------|--------------|---------------------------------|-----------------------|
| 322 | LUNG | <i>RP1L1</i> | 8 | 10467626 | 10467626 | C | T | nonsynonymous | NM_178857 | c.G3982A | p.E1328K |
| 322 | LUNG | <i>RP1L1</i> | 8 | 10467628 | 10467628 | G | A | nonsynonymous | NM_178857 | c.C3980T | p.T1327I |
| 322 | LUNG | <i>RP1L1</i> | 8 | 10467629 | 10467629 | T | C | nonsynonymous | NM_178857 | c.A3979G | p.T1327A |
| 322 | LUNG | <i>RP1L1</i> | 8 | 10467637 | 10467637 | T | C | nonsynonymous | NM_178857 | c.A3971G | p.E1324G |
| 322 | LUNG | <i>OR1D5</i> | 17 | 2966273 | 2966273 | G | A | nonsynonymous | NM_014566 | c.C629T | p.P210L |
| 322 | LUNG | <i>ZNF814</i> | 19 | 58385748 | 58385748 | G | A | nonsynonymous | NM_001144989 | c.C1010T | p.A337V |
| 322 | LUNG | <i>PLAC4</i> | 21 | 42551425 | 42551425 | C | G | nonsynonymous | NM_182832 | c.G131C | p.R44P |
| 322 | LUNG | <i>ARSD</i> | X | 2833643 | 2833643 | C | A | nonsynonymous | NM_001669 | c.G954T | p.Q318H |
| 323 | LUNG | <i>KRTAP4-5</i> | 17 | 39305775 | 39305775 | - | GGCAGCA GCTGGGG C | nonframeshift | NM_033188 | c.244_245insGCCCC AGCTGCTGCC | p.Q82delinsRPSC CQ |
| 323 | LUNG | <i>HEG1</i> | 3 | 124739948 | 124739948 | T | C | nonsynonymous | NM_020733 | c.A940G | p.N314D |
| 323 | LUNG | <i>MUC20</i> | 3 | 195452799 | 195452799 | C | T | nonsynonymous | NM_001282506 | c.C1325T | p.T442I |
| 323 | LUNG | <i>MUC4</i> | 3 | 195478111 | 195478111 | C | T | nonsynonymous | NM_004532 | c.G2906A | p.R969Q |
| 323 | LUNG | <i>TELO2</i> | 16 | 1547502 | 1547502 | G | A | nonsynonymous | NM_016111 | c.G823A | p.A275T |
| 324 | LUNG | <i>SCN7A</i> | 2 | 167300059 | 167300059 | C | T | nonsynonymous | NM_002976 | c.G1754A | p.C585Y |
| 324 | LUNG | <i>DBNL</i> | 7 | 44097830 | 44097830 | C | T | nonsynonymous | NM_001014436 | c.C655T | p.R219C |
| 324 | LUNG | <i>SLC38A5</i> | X | 48317386 | 48317386 | A | G | nonsynonymous | NM_033518 | c.T1352C | p.M451T |
| 325 | LUNG | <i>JMJD8</i> | 16 | 733572 | 733572 | C | T | nonsynonymous | NM_001005920 | c.G412A | p.E138K |
| 325 | LUNG | <i>ARSD</i> | X | 2836211 | 2836211 | A | T | nonsynonymous | NM_001669 | c.T497A | p.L166Q |
| 326 | LUNG | <i>CTBS</i> | 1 | 85039999 | 85040007 | GCAGCGCC A | - | nonframeshift | NM_004388 | c.92_100del | p.31_34del |
| 326 | LUNG | <i>ATAD3B</i> | 1 | 1431105 | 1431105 | A | G | nonsynonymous | NM_031921 | c.A1855G | p.M619V |
| 326 | LUNG | <i>POLR3B</i> | 12 | 106820975 | 106820975 | C | T | nonsynonymous | NM_001160708 | c.C928T | p.L310F |
| 329 | LUNG | <i>RP1L1</i> | 8 | 10467629 | 10467629 | - | TTC | nonframeshift | NM_178857 | c.3978_3979insGAA | p.T1327delinsET |

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|-----|------|-----------------|----|-----------|-----------|-----|--------|---------------|--------------|--------------------------|----------------------|
| 329 | LUNG | <i>SAFB2</i> | 19 | 5594098 | 5594098 | C | G | nonsynonymous | NM_014649 | c.G2011C | p.E671Q |
| 330 | LUNG | <i>LDB3</i> | 10 | 88476170 | 88476170 | T | C | nonsynonymous | NM_007078 | c.T1318C | p.S440P |
| 331 | LUNG | <i>CCDC66</i> | 3 | 56650054 | 56650054 | - | CTC | nonframeshift | NM_001141947 | c.1816_1817insCTC | p.S606delinsSP |
| 331 | LUNG | <i>SGK223</i> | 8 | 8176387 | 8176387 | - | GGGGCG | nonframeshift | NM_001080826 | c.3497_3498insCGC CCC | p.P1166delinsPA P |
| 331 | LUNG | <i>LRRC49</i> | 15 | 71276481 | 71276483 | CAA | - | nonframeshift | NM_017691 | c.1054_1056del | p.352_352del |
| 331 | LUNG | <i>HSPG2</i> | 1 | 22202155 | 22202155 | C | T | nonsynonymous | NM_005529 | c.G3269A | p.R1090Q |
| 331 | LUNG | <i>HSPG2</i> | 1 | 22211941 | 22211941 | G | T | nonsynonymous | NM_005529 | c.C1082A | p.T361N |
| 331 | LUNG | <i>MKNK1</i> | 1 | 47024263 | 47024263 | G | A | nonsynonymous | NM_003684 | c.C1382T | p.P461L |
| 331 | LUNG | <i>ABCA4</i> | 1 | 94487404 | 94487404 | C | T | nonsynonymous | NM_000350 | c.G4771A | p.G1591R |
| 331 | LUNG | <i>HYAL1</i> | 3 | 50340339 | 50340339 | C | G | nonsynonymous | NM_153281 | c.G49C | p.D17H |
| 331 | LUNG | <i>MUC4</i> | 3 | 195508127 | 195508127 | G | C | nonsynonymous | NM_018406 | c.C10324G | p.P3442A |
| 331 | LUNG | <i>SH3TC1</i> | 4 | 8235241 | 8235241 | G | A | splicing | NM_018986 | c.3282+1G>A | |
| 331 | LUNG | <i>HLA-B</i> | 6 | 31324144 | 31324144 | T | A | nonsynonymous | NM_005514 | c.A419T | p.Y140F |
| 331 | LUNG | <i>HLA-DRB5</i> | 6 | 32487309 | 32487309 | T | C | nonsynonymous | NM_002125 | c.A490G | p.S164G |
| 331 | LUNG | <i>HLA-DQB1</i> | 6 | 32629935 | 32629935 | C | G | nonsynonymous | NM_001243961 | c.G470C | p.G157A |
| 331 | LUNG | <i>UHRF1BP1</i> | 6 | 34839644 | 34839644 | G | A | nonsynonymous | NM_017754 | c.G4139A | p.R1380K |
| 331 | LUNG | <i>CLIC5</i> | 6 | 45922962 | 45922962 | C | A | nonsynonymous | NM_001114086 | c.G560T | p.S187I |
| 331 | LUNG | <i>PIDD1</i> | 11 | 800630 | 800630 | G | A | nonsynonymous | NM_145886 | c.C1954T | p.R652W |
| 331 | LUNG | <i>ARAP1</i> | 11 | 72410062 | 72410062 | C | G | nonsynonymous | NM_001040118 | c.G2529C | p.K843N |
| 331 | LUNG | <i>TBC1D4</i> | 13 | 75863116 | 75863116 | T | C | nonsynonymous | NM_014832 | c.A3617G | p.N1206S |
| 331 | LUNG | <i>NID2</i> | 14 | 52526891 | 52526891 | G | A | nonsynonymous | NM_007361 | c.C718T | p.P240S |
| 331 | LUNG | <i>DET1</i> | 15 | 89074155 | 89074155 | T | C | nonsynonymous | NM_001144074 | c.A782G | p.Y261C |
| 331 | LUNG | <i>TRPV1</i> | 17 | 3493366 | 3493366 | T | C | nonsynonymous | NM_018727 | c.A779G | p.N260S |
| 331 | LUNG | <i>GRIN3B</i> | 19 | 1008645 | 1008645 | C | A | nonsynonymous | NM_138690 | c.C2495A | p.A832E |

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|-----|------|----------------|----|-----------|-----------|---------------|-----|---------------|--------------|-----------------|----------------|
| 346 | LUNG | <i>OTOP1</i> | 4 | 4228210 | 4228210 | C | - | frameshift | NM_177998 | c.382delG | p.A128fs |
| 346 | LUNG | <i>SPG7</i> | 16 | 89613065 | 89613073 | GGAGAGGC G | - | frameshift | NM_003119 | c.1450_1457del | p.E484fs |
| 346 | LUNG | <i>OTULIN</i> | 5 | 14681593 | 14681593 | G | T | nonsynonymous | NM_138348 | c.G345T | p.Q115H |
| 346 | LUNG | <i>PRDM9</i> | 5 | 23524516 | 23524516 | A | G | nonsynonymous | NM_020227 | c.A1024G | p.R342G |
| 346 | LUNG | <i>DNAJC21</i> | 5 | 34954704 | 34954704 | G | A | nonsynonymous | NM_001012339 | c.G1481A | p.R494Q |
| 346 | LUNG | <i>FKBP9</i> | 7 | 33044832 | 33044832 | C | T | nonsynonymous | NM_007270 | c.C1582T | p.L528F |
| 346 | LUNG | <i>TPSB2</i> | 16 | 1279438 | 1279438 | C | T | nonsynonymous | NM_024164 | c.G253A | p.A85T |
| 346 | LUNG | <i>KRT10</i> | 17 | 38975149 | 38975149 | G | T | nonsynonymous | NM_000421 | c.C1638A | p.S546R |
| 36 | LUNG | <i>INO80D</i> | 2 | 206892930 | 206892930 | - | A | frameshift | NM_017759 | c.1202_1203insT | p.T401fs |
| 36 | LUNG | <i>GINM1</i> | 6 | 149903673 | 149903673 | - | AGC | nonframeshift | NM_138785 | c.815_816insAGC | p.V272delinsVA |
| 36 | LUNG | <i>F10</i> | 13 | 113803731 | 113803731 | C | - | frameshift | NM_000504 | c.1367delC | p.T456fs |
| 36 | LUNG | <i>PITPNM3</i> | 17 | 6376090 | 6376090 | - | C | frameshift | NM_031220 | c.1315_1316insG | p.P439fs |
| 36 | LUNG | <i>GRIN2C</i> | 17 | 72840447 | 72840447 | A | - | frameshift | NM_000835 | c.2551delT | p.S851fs |
| 36 | LUNG | <i>INSR</i> | 19 | 7132223 | 7132223 | G | - | frameshift | NM_000208 | c.2788delC | p.L930fs |
| 36 | LUNG | <i>UBXN11</i> | 1 | 26608843 | 26608843 | C | A | nonsynonymous | NM_001077262 | c.G1150T | p.G384C |
| 36 | LUNG | <i>MOV10</i> | 1 | 113239431 | 113239431 | G | T | nonsynonymous | NM_020963 | c.G2161T | p.D721Y |
| 36 | LUNG | <i>FLG</i> | 1 | 152280685 | 152280685 | C | A | nonsynonymous | NM_002016 | c.G6677T | p.G2226V |
| 36 | LUNG | <i>FLG</i> | 1 | 152280688 | 152280688 | A | G | nonsynonymous | NM_002016 | c.T6674C | p.V2225A |
| 36 | LUNG | <i>FLG</i> | 1 | 152280691 | 152280691 | A | T | nonsynonymous | NM_002016 | c.T6671A | p.L2224Q |
| 36 | LUNG | <i>LRRTM1</i> | 2 | 80530183 | 80530183 | C | T | stopgain | NM_178839 | c.G762A | p.W254X |
| 36 | LUNG | <i>MUC4</i> | 3 | 195508133 | 195508133 | G | A | nonsynonymous | NM_018406 | c.C10318T | p.P3440S |
| 36 | LUNG | <i>CEP72</i> | 5 | 620355 | 620355 | C | G | nonsynonymous | NM_018140 | c.C382G | p.L128V |
| 36 | LUNG | <i>DRD1</i> | 5 | 174869429 | 174869429 | A | G | nonsynonymous | NM_000794 | c.T674C | p.I225T |
| 36 | LUNG | <i>CITED2</i> | 6 | 139694722 | 139694722 | G | T | nonsynonymous | NM_006079 | c.C360A | p.N120K |

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|-----|------|-----------------|----|-----------|-----------|---------------------|---|---------------|--------------|----------------|--------------|
| 36 | LUNG | <i>TNRC18</i> | 7 | 5402375 | 5402375 | T | G | nonsynonymous | NM_001080495 | c.A4301C | p.D1434A |
| 36 | LUNG | <i>LYNX1</i> | 8 | 143846054 | 143846054 | C | G | nonsynonymous | NM_023946 | c.G365C | p.C122S |
| 36 | LUNG | <i>GOLGA2</i> | 9 | 131020750 | 131020750 | T | C | nonsynonymous | NM_004486 | c.A2192G | p.E731G |
| 36 | LUNG | <i>NELFB</i> | 9 | 140161483 | 140161483 | G | C | nonsynonymous | NM_015456 | c.G1183C | p.A395P |
| 36 | LUNG | <i>PPP2R3C</i> | 14 | 35577422 | 35577422 | A | T | nonsynonymous | NM_017917 | c.T425A | p.V142D |
| 36 | LUNG | <i>LYSMD4</i> | 15 | 100271994 | 100271994 | C | G | nonsynonymous | NM_001284418 | c.G211C | p.V71L |
| 36 | LUNG | <i>USP6</i> | 17 | 5036784 | 5036784 | C | T | nonsynonymous | NM_001304284 | c.C323T | p.P108L |
| 36 | LUNG | <i>TMEM132E</i> | 17 | 32959814 | 32959814 | A | G | nonsynonymous | NM_207313 | c.A1304G | p.N435S |
| 36 | LUNG | <i>CDC27</i> | 17 | 45214536 | 45214536 | G | T | nonsynonymous | NM_001256 | c.C1895A | p.P632H |
| 36 | LUNG | <i>ZNF146</i> | 19 | 36727983 | 36727983 | G | T | nonsynonymous | NM_007145 | c.G641T | p.C214F |
| 36 | LUNG | <i>CPT1B</i> | 22 | 51012812 | 51012812 | G | T | nonsynonymous | NM_004377 | c.C922A | p.Q308K |
| 36 | LUNG | <i>SSR4</i> | X | 153063222 | 153063222 | T | A | nonsynonymous | NM_001204526 | c.T337A | p.Y113N |
| 368 | LUNG | <i>PRR21</i> | 2 | 240982219 | 240982219 | A | G | nonsynonymous | NM_001080835 | c.T181C | p.S61P |
| 368 | LUNG | <i>HLA-DRB1</i> | 6 | 32549452 | 32549452 | C | G | nonsynonymous | NM_002124 | c.G534C | p.Q178H |
| 368 | LUNG | <i>SACS</i> | 13 | 23911234 | 23911234 | G | T | nonsynonymous | NM_014363 | c.C6781A | p.L2261I |
| 37 | LUNG | <i>TUBGCP3</i> | 13 | 113201853 | 113201867 | TGGGAAAG TCGCGCG | - | nonframeshift | NM_001286279 | c.1235_1249del | p.412_417del |
| 37 | LUNG | <i>ARSD</i> | X | 2836041 | 2836041 | A | T | nonsynonymous | NM_001669 | c.T667A | p.F223I |
| 37 | LUNG | <i>ARSD</i> | X | 2836047 | 2836047 | C | T | nonsynonymous | NM_001669 | c.G661A | p.G221S |
| 38 | LUNG | <i>HDGFRP2</i> | 19 | 4499633 | 4499647 | AGCTGGCC GGGGAGG | - | frameshift | NM_001001520 | c.1721_1722del | p.K574fs |
| 38 | LUNG | <i>ANKRD36</i> | 2 | 97869931 | 97869931 | A | T | nonsynonymous | NM_001164315 | c.A2992T | p.T998S |
| 38 | LUNG | <i>ANKRD36</i> | 2 | 97869979 | 97869979 | G | T | nonsynonymous | NM_001164315 | c.G3040T | p.D1014Y |
| 38 | LUNG | <i>DMPK</i> | 19 | 46285453 | 46285453 | C | G | nonsynonymous | NM_004409 | c.G158C | p.W53S |
| 39 | LUNG | <i>ZNF806</i> | 2 | 133075612 | 133075612 | C | T | nonsynonymous | NM_001304449 | c.C1073T | p.P358L |

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|-----|------|----------------|----|-----------|-----------|----------------------------|-----|---------------|--------------|-----------------|----------------|
| 39 | LUNG | <i>PDDC1</i> | 11 | 773560 | 773560 | G | A | nonsynonymous | NM_182612 | c.C317T | p.S106F |
| 39 | LUNG | <i>DNAH3</i> | 16 | 20990671 | 20990671 | A | C | nonsynonymous | NM_017539 | c.T8057G | p.L2686R |
| 39 | LUNG | <i>CDH26</i> | 20 | 58559862 | 58559862 | T | C | splicing | NM_177980 | c.708+2T>C | |
| 39 | LUNG | <i>ARSD</i> | X | 2836211 | 2836211 | A | T | nonsynonymous | NM_001669 | c.T497A | p.L166Q |
| 39 | LUNG | <i>ARSD</i> | X | 2836238 | 2836238 | G | A | nonsynonymous | NM_001669 | c.C470T | p.S157F |
| 3 | LUNG | <i>RALY</i> | 20 | 32664864 | 32664864 | - | CAG | nonframeshift | NM_016732 | c.689_690insCAG | p.A230delinsAS |
| 3 | LUNG | <i>MEGF6</i> | 1 | 3431210 | 3431210 | C | A | nonsynonymous | NM_001409 | c.G757T | p.G253C |
| 3 | LUNG | <i>ANGPTL3</i> | 1 | 63063465 | 63063465 | C | G | nonsynonymous | NM_014495 | c.C228G | p.N76K |
| 3 | LUNG | <i>MUC4</i> | 3 | 195507228 | 195507228 | G | C | nonsynonymous | NM_018406 | c.C11223G | p.H3741Q |
| 3 | LUNG | <i>MUC4</i> | 3 | 195507242 | 195507242 | C | A | nonsynonymous | NM_018406 | c.G11209T | p.A3737S |
| 3 | LUNG | <i>MUC4</i> | 3 | 195508130 | 195508130 | C | G | nonsynonymous | NM_018406 | c.G10321C | p.V3441L |
| 3 | LUNG | <i>MUC4</i> | 3 | 195515017 | 195515017 | A | G | nonsynonymous | NM_018406 | c.T3434C | p.V1145A |
| 3 | LUNG | <i>PARP10</i> | 8 | 145059619 | 145059619 | C | A | nonsynonymous | NM_032789 | c.G634T | p.G212W |
| 3 | LUNG | <i>FGD3</i> | 9 | 95797780 | 95797780 | A | G | nonsynonymous | NM_001083536 | c.A2087G | p.E696G |
| 3 | LUNG | <i>CREB3L1</i> | 11 | 46341947 | 46341947 | G | T | nonsynonymous | NM_052854 | c.G1391T | p.R464L |
| 3 | LUNG | <i>FDXACB1</i> | 11 | 111749419 | 111749419 | C | A | nonsynonymous | NM_138378 | c.G190T | p.G64C |
| 3 | LUNG | <i>ANKK1</i> | 11 | 113269743 | 113269743 | C | A | nonsynonymous | NM_178510 | c.C1052A | p.P351Q |
| 3 | LUNG | <i>UBALD1</i> | 16 | 4659758 | 4659758 | T | G | nonsynonymous | NM_145253 | c.A410C | p.H137P |
| 3 | LUNG | <i>PIEZO1</i> | 16 | 88799858 | 88799858 | G | T | stopgain | NM_001142864 | c.C2492A | p.S831X |
| 3 | LUNG | <i>SBSN</i> | 19 | 36018614 | 36018614 | C | A | nonsynonymous | NM_001166034 | c.G570T | p.Q190H |
| 40 | LUNG | <i>SAALI</i> | 11 | 18127558 | 18127558 | - | CGG | nonframeshift | NM_138421 | c.30_31insCCG | p.G11delinsPG |
| 408 | LUNG | <i>TSKS</i> | 19 | 50249933 | 50249950 | CTGCTTCTC CTCCGGCT C | - | nonframeshift | NM_021733 | c.769_786del | p.257_262del |
| 408 | LUNG | <i>CDRI</i> | X | 139866510 | 139866514 | CCACG | - | frameshift | NM_004065 | c.18_22del | p.D6fs |

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|-----|------|----------------|----|-----------|-----------|---|---|---------------|--------------|-------------|----------|
| 408 | LUNG | <i>MEGF6</i> | 1 | 3417788 | 3417788 | C | G | nonsynonymous | NM_001409 | c.G2399C | p.G800A |
| 408 | LUNG | <i>CD302</i> | 2 | 160639968 | 160639968 | G | A | nonsynonymous | NM_014880 | c.C80T | p.S27F |
| 408 | LUNG | <i>KLF15</i> | 3 | 126062740 | 126062740 | T | G | splicing | NM_014079 | c.1083-2A>C | |
| 408 | LUNG | <i>CHRD</i> | 3 | 184104715 | 184104715 | C | T | nonsynonymous | NM_001304472 | c.C2279T | p.P760L |
| 408 | LUNG | <i>CMBL</i> | 5 | 10286484 | 10286484 | C | A | nonsynonymous | NM_138809 | c.G448T | p.A150S |
| 408 | LUNG | <i>CDH10</i> | 5 | 24491690 | 24491690 | A | G | nonsynonymous | NM_006727 | c.T1871C | p.L624P |
| 408 | LUNG | <i>LIFR</i> | 5 | 38482768 | 38482768 | T | A | nonsynonymous | NM_001127671 | c.A2593T | p.I865F |
| 408 | LUNG | <i>LIFR</i> | 5 | 38482769 | 38482769 | C | A | nonsynonymous | NM_001127671 | c.G2592T | p.W864C |
| 408 | LUNG | <i>FER</i> | 5 | 108203558 | 108203558 | G | T | nonsynonymous | NM_005246 | c.G572T | p.G191V |
| 408 | LUNG | <i>RAPGEF6</i> | 5 | 130778158 | 130778158 | C | A | nonsynonymous | NM_016340 | c.G3494T | p.G1165V |
| 408 | LUNG | <i>PCDHA10</i> | 5 | 140237547 | 140237547 | G | T | nonsynonymous | NM_018901 | c.G1914T | p.E638D |
| 408 | LUNG | <i>DST</i> | 6 | 56569101 | 56569101 | C | A | stopgain | NM_183380 | c.G220T | p.E74X |
| 408 | LUNG | <i>DNAAF5</i> | 7 | 794372 | 794372 | G | T | stopgain | NM_017802 | c.G1171T | p.E391X |
| 408 | LUNG | <i>MIOS</i> | 7 | 7612682 | 7612682 | G | T | nonsynonymous | NM_019005 | c.G576T | p.W192C |
| 408 | LUNG | <i>UBN2</i> | 7 | 138978711 | 138978711 | A | T | nonsynonymous | NM_173569 | c.A3978T | p.L1326F |
| 408 | LUNG | <i>CSMD3</i> | 8 | 113275868 | 113275868 | G | C | nonsynonymous | NM_198123 | c.C9862G | p.P3288A |
| 408 | LUNG | <i>POU5F1B</i> | 8 | 128428391 | 128428391 | C | T | stopgain | NM_001159542 | c.C280T | p.Q94X |
| 408 | LUNG | <i>CYP2C8</i> | 10 | 96827382 | 96827382 | C | A | stopgain | NM_000770 | c.G235T | p.G79X |
| 408 | LUNG | <i>ABCC2</i> | 10 | 101595924 | 101595924 | G | A | nonsynonymous | NM_000392 | c.G3491A | p.S1164N |
| 408 | LUNG | <i>CPXM2</i> | 10 | 125601926 | 125601926 | C | A | nonsynonymous | NM_198148 | c.G592T | p.D198Y |
| 408 | LUNG | <i>DOCK1</i> | 10 | 129172365 | 129172365 | G | T | stopgain | NM_001380 | c.G3499T | p.G1167X |
| 408 | LUNG | <i>THY1</i> | 11 | 119290839 | 119290839 | C | T | nonsynonymous | NM_006288 | c.G295A | p.E99K |
| 408 | LUNG | <i>OR8G5</i> | 11 | 124134832 | 124134832 | C | A | nonsynonymous | NM_001005198 | c.C110A | p.A37E |
| 408 | LUNG | <i>OR8B4</i> | 11 | 124294230 | 124294230 | C | A | nonsynonymous | NM_001005196 | c.G538T | p.V180F |
| 408 | LUNG | <i>TMEM218</i> | 11 | 124967606 | 124967606 | C | T | nonsynonymous | NM_001080546 | c.G244A | p.V82I |

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|-----|------|------------------|----|-----------|-----------|---|---|---------------|--------------|-------------|----------|
| 408 | LUNG | <i>NAV3</i> | 12 | 78452896 | 78452896 | G | T | splicing | NM_014903 | c.2636+1G>T | |
| 408 | LUNG | <i>OR11H2</i> | 14 | 20181272 | 20181272 | G | T | nonsynonymous | NM_001197287 | c.C804A | p.S268R |
| 408 | LUNG | <i>LRFN5</i> | 14 | 42360664 | 42360664 | A | G | nonsynonymous | NM_152447 | c.A1597G | p.I533V |
| 408 | LUNG | <i>CERS3</i> | 15 | 101013191 | 101013191 | T | A | nonsynonymous | NM_001290341 | c.A709T | p.N237Y |
| 408 | LUNG | <i>ABCA3</i> | 16 | 2334282 | 2334282 | T | C | nonsynonymous | NM_001089 | c.A3860G | p.Y1287C |
| 408 | LUNG | <i>ZNF208</i> | 19 | 22170063 | 22170063 | C | G | nonsynonymous | NM_007153 | c.G181C | p.E61Q |
| 408 | LUNG | <i>KIF3B</i> | 20 | 30898847 | 30898847 | A | T | nonsynonymous | NM_004798 | c.A1267T | p.I423F |
| 408 | LUNG | <i>TRPM2</i> | 21 | 45845612 | 45845612 | G | T | stopgain | NM_003307 | c.G3697T | p.E1233X |
| 408 | LUNG | <i>SLC16A8</i> | 22 | 38476986 | 38476986 | G | T | nonsynonymous | NM_013356 | c.C1059A | p.F353L |
| 408 | LUNG | <i>BEND2</i> | X | 18192224 | 18192224 | G | T | nonsynonymous | NM_153346 | c.C1907A | p.P636Q |
| 408 | LUNG | <i>BEND2</i> | X | 18192225 | 18192225 | G | T | nonsynonymous | NM_153346 | c.C1906A | p.P636T |
| 408 | LUNG | <i>FAM47C</i> | X | 37028236 | 37028236 | G | T | stopgain | NM_001013736 | c.G1753T | p.E585X |
| 408 | LUNG | <i>WNK3</i> | X | 54324784 | 54324784 | C | A | nonsynonymous | NM_020922 | c.G1222T | p.D408Y |
| 408 | LUNG | <i>POU3F4</i> | X | 82763958 | 82763958 | G | A | nonsynonymous | NM_000307 | c.G626A | p.G209D |
| 408 | LUNG | <i>CPXCR1</i> | X | 88008983 | 88008983 | C | T | nonsynonymous | NM_033048 | c.C568T | p.H190Y |
| 408 | LUNG | <i>GPRASP1</i> | X | 101909472 | 101909472 | G | T | nonsynonymous | NM_014710 | c.G631T | p.A211S |
| 408 | LUNG | <i>TENM1</i> | X | 123805680 | 123805680 | G | T | nonsynonymous | NM_014253 | c.C1021A | p.H341N |
| 408 | LUNG | <i>CDR1</i> | X | 139865944 | 139865944 | G | T | nonsynonymous | NM_004065 | c.C588A | p.F196L |
| 408 | LUNG | <i>AFF2</i> | X | 148035159 | 148035159 | G | T | nonsynonymous | NM_001169123 | c.G1417T | p.G473C |
| 409 | LUNG | <i>TTC24</i> | 1 | 156553620 | 156553620 | T | G | nonsynonymous | NM_001105669 | c.T1184G | p.V395G |
| 409 | LUNG | <i>FOXC1</i> | 6 | 1612234 | 1612234 | G | T | nonsynonymous | NM_001453 | c.G1554T | p.L518F |
| 409 | LUNG | <i>NCOR1</i> | 17 | 16097870 | 16097870 | C | A | nonsynonymous | NM_006311 | c.G14T | p.G5V |
| 409 | LUNG | <i>CCDC144NL</i> | 17 | 20769896 | 20769896 | G | T | nonsynonymous | NM_001004306 | c.C536A | p.T179N |
| 409 | LUNG | <i>CCDC144NL</i> | 17 | 20769899 | 20769899 | G | T | stopgain | NM_001004306 | c.C533A | p.S178X |
| 409 | LUNG | <i>ZNF814</i> | 19 | 58385748 | 58385748 | G | A | nonsynonymous | NM_001144989 | c.C1010T | p.A337V |

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|-----|------|------------------|----|-----------|-----------|---------------|-----|---------------|--------------|-------------------|----------------|
| 410 | LUNG | <i>FAM90A1</i> | 12 | 8374781 | 8374781 | - | ACG | nonframeshift | NM_018088 | c.1031_1032insCGT | p.T344delinsTV |
| 410 | LUNG | <i>TRMT1L</i> | 1 | 185119609 | 185119609 | C | A | nonsynonymous | NM_030934 | c.G362T | p.C121F |
| 410 | LUNG | <i>DMGDH</i> | 5 | 78301172 | 78301172 | C | T | nonsynonymous | NM_013391 | c.G2309A | p.R770Q |
| 410 | LUNG | <i>IGDCC4</i> | 15 | 65688337 | 65688337 | C | A | nonsynonymous | NM_020962 | c.G1162T | p.G388C |
| 410 | LUNG | <i>MAN2B1</i> | 19 | 12774537 | 12774537 | G | A | nonsynonymous | NM_000528 | c.C743T | p.P248L |
| 410 | LUNG | <i>VCX</i> | X | 7811747 | 7811747 | T | C | nonsynonymous | NM_013452 | c.T311C | p.L104P |
| 41 | LUNG | <i>OR52M1</i> | 11 | 4567360 | 4567368 | ATGAAGAT T | - | nonframeshift | NM_001004137 | c.940_948del | p.314_316del |
| 41 | LUNG | <i>SOGA3</i> | 6 | 127837125 | 127837125 | T | C | nonsynonymous | NM_001012279 | c.A635G | p.E212G |
| 411 | LUNG | <i>IGFNI</i> | 1 | 201184945 | 201184945 | G | A | nonsynonymous | NM_001164586 | c.G9274A | p.E3092K |
| 411 | LUNG | <i>SHB</i> | 9 | 38068162 | 38068162 | G | C | nonsynonymous | NM_003028 | c.C481G | p.L161V |
| 411 | LUNG | <i>IPMK</i> | 10 | 59959010 | 59959010 | T | C | nonsynonymous | NM_152230 | c.A619G | p.I207V |
| 411 | LUNG | <i>RSPH1</i> | 21 | 43896152 | 43896152 | C | T | nonsynonymous | NM_080860 | c.G733A | p.G245R |
| 411 | LUNG | <i>KRTAP10-7</i> | 21 | 46020721 | 46020721 | G | A | nonsynonymous | NM_198689 | c.G185A | p.R62H |
| 411 | LUNG | <i>KRTAP10-7</i> | 21 | 46020742 | 46020742 | C | G | nonsynonymous | NM_198689 | c.C206G | p.P69R |
| 411 | LUNG | <i>ARSD</i> | X | 2833638 | 2833638 | C | T | nonsynonymous | NM_001669 | c.G959A | p.G320D |
| 411 | LUNG | <i>ARSD</i> | X | 2833643 | 2833643 | C | A | nonsynonymous | NM_001669 | c.G954T | p.Q318H |
| 411 | LUNG | <i>ARSD</i> | X | 2836041 | 2836041 | A | T | nonsynonymous | NM_001669 | c.T667A | p.F223I |
| 412 | LUNG | <i>KRTAP5-1</i> | 11 | 1606146 | 1606146 | - | GCC | nonframeshift | NM_001005922 | c.333_334insGGC | p.C112delinsGC |
| 412 | LUNG | <i>CCDC87</i> | 11 | 66360268 | 66360274 | CGCTGCT | - | frameshift | NM_018219 | c.213_219del | p.I71fs |
| 412 | LUNG | <i>FAM162A</i> | 3 | 122103141 | 122103141 | C | T | nonsynonymous | NM_014367 | c.C29T | p.A10V |
| 412 | LUNG | <i>MUC4</i> | 3 | 195507166 | 195507166 | A | G | nonsynonymous | NM_018406 | c.T11285C | p.L3762P |
| 412 | LUNG | <i>NOXA1</i> | 9 | 140323373 | 140323373 | C | A | nonsynonymous | NM_006647 | c.C409A | p.L137I |
| 412 | LUNG | <i>COL4A2</i> | 13 | 111109725 | 111109725 | G | A | nonsynonymous | NM_001846 | c.G1375A | p.A459T |
| 412 | LUNG | <i>KRTAP2-4</i> | 17 | 39221816 | 39221816 | C | T | stopgain | NM_033184 | c.G282A | p.W94X |

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|-----|------|-----------------|----|-----------|-----------|--|---------|---------------|--------------|-------------------|----------------|
| 412 | LUNG | <i>KRTAP2-4</i> | 17 | 39221823 | 39221823 | C | G | nonsynonymous | NM_033184 | c.G275C | p.C92S |
| 417 | LUNG | <i>MROH7</i> | 1 | 55119702 | 55119702 | T | C | nonsynonymous | NM_001039464 | c.T1103C | p.V368A |
| 417 | LUNG | <i>HLA-DPB1</i> | 6 | 33048691 | 33048691 | C | G | nonsynonymous | NM_002121 | c.C343G | p.P115A |
| 417 | LUNG | <i>HLA-DPB1</i> | 6 | 33048694 | 33048694 | A | G | nonsynonymous | NM_002121 | c.A346G | p.M116V |
| 417 | LUNG | <i>IL18BP</i> | 11 | 71712875 | 71712875 | T | C | nonsynonymous | NM_001039660 | c.T553C | p.S185P |
| 417 | LUNG | <i>ADAT3</i> | 19 | 1912251 | 1912251 | A | G | nonsynonymous | NM_138422 | c.A205G | p.K69E |
| 417 | LUNG | <i>ARSD</i> | X | 2835863 | 2835863 | G | T | nonsynonymous | NM_001669 | c.C845A | p.A282D |
| 417 | LUNG | <i>ARSD</i> | X | 2836041 | 2836041 | A | T | nonsynonymous | NM_001669 | c.T667A | p.F223I |
| 417 | LUNG | <i>ARSD</i> | X | 2836047 | 2836047 | C | T | nonsynonymous | NM_001669 | c.G661A | p.G221S |
| 42 | LUNG | <i>IVL</i> | 1 | 152882772 | 152882801 | GAGCAGCA GGAGGGAC AGCTGAAG CACCCG | - | nonframeshift | NM_005547 | c.499_528del | p.167_176del |
| 43 | LUNG | <i>IRF5</i> | 7 | 128587352 | 128587381 | ACTCTGCA GCCGCCCA CTCTGCGG CCGCCT | - | nonframeshift | NM_001098630 | c.502_531del | p.168_177del |
| 43 | LUNG | <i>DND1</i> | 5 | 140052430 | 140052430 | G | T | nonsynonymous | NM_194249 | c.C204A | p.D68E |
| 43 | LUNG | <i>NCOR1</i> | 17 | 16097870 | 16097870 | C | A | nonsynonymous | NM_006311 | c.G14T | p.G5V |
| 43 | LUNG | <i>ARSD</i> | X | 2836238 | 2836238 | G | A | nonsynonymous | NM_001669 | c.C470T | p.S157F |
| 435 | LUNG | <i>NOTCH2</i> | 1 | 120612003 | 120612004 | GG | - | frameshift | NM_024408 | c.17_18del | p.P6fs |
| 435 | LUNG | <i>PLAC4</i> | 21 | 42551222 | 42551222 | T | G | nonsynonymous | NM_182832 | c.A334C | p.I112L |
| 44 | LUNG | <i>IRF2BPL</i> | 14 | 77493645 | 77493647 | GCA | - | nonframeshift | NM_024496 | c.489_491del | p.163_164del |
| 44 | LUNG | <i>ZSCAN32</i> | 16 | 3440050 | 3440052 | GTA | - | nonframeshift | NM_001284527 | c.709_711del | p.237_237del |
| 44 | LUNG | <i>SLC5A10</i> | 17 | 18918510 | 18918510 | - | CGGTACG | nonframeshift | NM_001042450 | c.1239_1240insCGG | p.G413delinsGR |

| | | | | | | | GGGGTGG GGGC | | | TACGGGGGTGGG GGC | YGGGG |
|----|------|------------------|----|-----------|-----------|--------|-----------------|---------------|--------------|---------------------|--------------|
| 44 | LUNG | <i>NINL</i> | 20 | 25457050 | 25457055 | CTCCCA | - | nonframeshift | NM_025176 | c.2872_2877del | p.958_959del |
| 44 | LUNG | <i>MORN1</i> | 1 | 2252955 | 2252955 | G | T | nonsynonymous | NM_024848 | c.C1361A | p.P454Q |
| 44 | LUNG | <i>CR1</i> | 1 | 207680070 | 207680070 | C | T | nonsynonymous | NM_000651 | c.C313T | p.R105C |
| 44 | LUNG | <i>URB2</i> | 1 | 229787030 | 229787030 | G | A | nonsynonymous | NM_014777 | c.G4198A | p.V1400M |
| 44 | LUNG | <i>SNED1</i> | 2 | 242008344 | 242008344 | G | T | nonsynonymous | NM_001080437 | c.G3213T | p.K1071N |
| 44 | LUNG | <i>NEK10</i> | 3 | 27353656 | 27353656 | C | A | nonsynonymous | NM_152534 | c.G502T | p.V168L |
| 44 | LUNG | <i>PRKAR2A</i> | 3 | 48789046 | 48789046 | C | T | nonsynonymous | NM_004157 | c.G1187A | p.S396N |
| 44 | LUNG | <i>CCNL1</i> | 3 | 156876748 | 156876748 | C | A | nonsynonymous | NM_020307 | c.G395T | p.C132F |
| 44 | LUNG | <i>VPS8</i> | 3 | 184654109 | 184654109 | A | C | nonsynonymous | NM_001009921 | c.A2974C | p.I992L |
| 44 | LUNG | <i>PCDH1</i> | 5 | 141248994 | 141248994 | G | A | nonsynonymous | NM_001278613 | c.C91T | p.L31F |
| 44 | LUNG | <i>CYP39A1</i> | 6 | 46604145 | 46604145 | G | C | nonsynonymous | NM_016593 | c.C713G | p.S238C |
| 44 | LUNG | <i>OPN5</i> | 6 | 47776119 | 47776119 | T | C | nonsynonymous | NM_181744 | c.T986C | p.L329P |
| 44 | LUNG | <i>PM20D2</i> | 6 | 89868078 | 89868078 | A | G | nonsynonymous | NM_001010853 | c.A947G | p.N316S |
| 44 | LUNG | <i>DEFB104B</i> | 8 | 7698626 | 7698626 | C | A | nonsynonymous | NM_080389 | c.C129A | p.S43R |
| 44 | LUNG | <i>NUTM2F</i> | 9 | 97087719 | 97087719 | G | A | nonsynonymous | NM_017561 | c.C514T | p.P172S |
| 44 | LUNG | <i>ABCA2</i> | 9 | 139907481 | 139907481 | C | T | nonsynonymous | NM_001606 | c.G4840A | p.V1614I |
| 44 | LUNG | <i>FRMD8</i> | 11 | 65168277 | 65168277 | A | G | nonsynonymous | NM_031904 | c.A1010G | p.E337G |
| 44 | LUNG | <i>SHC4</i> | 15 | 49127198 | 49127198 | G | A | nonsynonymous | NM_203349 | c.C1505T | p.P502L |
| 44 | LUNG | <i>DENND4A</i> | 15 | 65982899 | 65982899 | G | A | nonsynonymous | NM_005848 | c.C3901T | p.H1301Y |
| 44 | LUNG | <i>FLII</i> | 17 | 18152649 | 18152649 | T | C | nonsynonymous | NM_002018 | c.A1850G | p.Y617C |
| 44 | LUNG | <i>CCDC144NL</i> | 17 | 20769896 | 20769896 | G | T | nonsynonymous | NM_001004306 | c.C536A | p.T179N |
| 44 | LUNG | <i>CCDC144NL</i> | 17 | 20769899 | 20769899 | G | T | stopgain | NM_001004306 | c.C533A | p.S178X |
| 44 | LUNG | <i>RIN2</i> | 20 | 19937347 | 19937347 | A | G | nonsynonymous | NM_001242581 | c.A394G | p.R132G |

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|-----|------|-----------------|----|-----------|-----------|---------------|---|---------------|--------------|----------------|----------------|
| 44 | LUNG | <i>ADAMTS1</i> | 21 | 28217059 | 28217059 | C | T | nonsynonymous | NM_006988 | c.G215A | p.G72E |
| 44 | LUNG | <i>ARSD</i> | X | 2836047 | 2836047 | C | T | nonsynonymous | NM_001669 | c.G661A | p.G221S |
| 45 | LUNG | <i>CAND2</i> | 3 | 12854873 | 12854873 | A | T | nonsynonymous | NM_001162499 | c.A992T | p.E331V |
| 45 | LUNG | <i>SCAP</i> | 3 | 47469147 | 47469147 | T | C | nonsynonymous | NM_012235 | c.A421G | p.R141G |
| 45 | LUNG | <i>MUC4</i> | 3 | 195507166 | 195507166 | A | G | nonsynonymous | NM_018406 | c.T11285C | p.L3762P |
| 45 | LUNG | <i>MTIF3</i> | 13 | 28014173 | 28014173 | T | C | nonsynonymous | NM_001166261 | c.A413G | p.Q138R |
| 45 | LUNG | <i>KRTAP4-7</i> | 17 | 39240810 | 39240810 | T | A | nonsynonymous | NM_033061 | c.T352A | p.C118S |
| 45 | LUNG | <i>MADCAM1</i> | 19 | 501786 | 501786 | C | A | nonsynonymous | NM_130760 | c.C785A | p.P262Q |
| 45 | LUNG | <i>TPTE</i> | 21 | 10942717 | 10942717 | C | T | nonsynonymous | NM_199261 | c.G724A | p.V242I |
| 45 | LUNG | <i>RBMX</i> | X | 135956411 | 135956411 | C | A | nonsynonymous | NM_002139 | c.G1066T | p.G356W |
| 466 | LUNG | <i>SETSIP</i> | 1 | 92540347 | 92540347 | C | - | frameshift | NM_001287737 | c.652delG | p.D218fs |
| 466 | LUNG | <i>KAT6B</i> | 10 | 76788660 | 76788668 | GAAGAGGA A | - | nonframeshift | NM_012330 | c.4078_4086del | p.1360_1362del |
| 466 | LUNG | <i>YWHAE</i> | 17 | 1265304 | 1265304 | - | A | splicing | NM_006761 | c.265-2->T | |
| 466 | LUNG | <i>COL16A1</i> | 1 | 32145415 | 32145415 | G | T | nonsynonymous | NM_001856 | c.C2708A | p.P903Q |
| 466 | LUNG | <i>HLA-DPB1</i> | 6 | 33048689 | 33048689 | G | A | nonsynonymous | NM_002121 | c.G341A | p.G114E |
| 466 | LUNG | <i>HLA-DPB1</i> | 6 | 33048691 | 33048691 | C | G | nonsynonymous | NM_002121 | c.C343G | p.P115A |
| 466 | LUNG | <i>HLA-DPB1</i> | 6 | 33048694 | 33048694 | A | G | nonsynonymous | NM_002121 | c.A346G | p.M116V |
| 466 | LUNG | <i>LTB4R2</i> | 14 | 24780258 | 24780258 | C | T | nonsynonymous | NM_001164692 | c.C388T | p.P130S |
| 466 | LUNG | <i>CSPG4</i> | 15 | 75982492 | 75982492 | G | A | nonsynonymous | NM_001897 | c.C914T | p.T305M |
| 466 | LUNG | <i>CSPG4</i> | 15 | 75982513 | 75982513 | A | G | nonsynonymous | NM_001897 | c.T893C | p.I298T |
| 467 | LUNG | <i>C12orf60</i> | 12 | 14976418 | 14976419 | TA | - | frameshift | NM_175874 | c.549_550del | p.T183fs |
| 467 | LUNG | <i>MASP2</i> | 1 | 11106762 | 11106762 | G | A | nonsynonymous | NM_006610 | c.C263T | p.T88M |
| 467 | LUNG | <i>FRYL</i> | 4 | 48569312 | 48569312 | C | T | nonsynonymous | NM_015030 | c.G3122A | p.R1041Q |
| 467 | LUNG | <i>HLA-DQB1</i> | 6 | 32629935 | 32629935 | C | G | nonsynonymous | NM_001243961 | c.G470C | p.G157A |

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|-----|------|------------------|----|-----------|-----------|----------------------------|--------|---------------|--------------|--------------------------|-----------------|
| 467 | LUNG | <i>GLIS3</i> | 9 | 4118262 | 4118262 | C | A | nonsynonymous | NM_152629 | c.G751T | p.G251C |
| 467 | LUNG | <i>LAMTOR1</i> | 11 | 71809345 | 71809345 | T | A | nonsynonymous | NM_017907 | c.A383T | p.D128V |
| 467 | LUNG | <i>CNTN5</i> | 11 | 99690461 | 99690461 | A | G | nonsynonymous | NM_014361 | c.A242G | p.N81S |
| 467 | LUNG | <i>FUK</i> | 16 | 70504929 | 70504929 | C | G | nonsynonymous | NM_145059 | c.C1124G | p.P375R |
| 468 | LUNG | <i>ODF1</i> | 8 | 103573020 | 103573037 | TGCAGCCC CTGCAACC CG | - | nonframeshift | NM_024410 | c.661_678del | p.221_226del |
| 468 | LUNG | <i>SMARCA2</i> | 9 | 2039777 | 2039779 | CAG | - | nonframeshift | NM_001289396 | c.667_669del | p.223_223del |
| 468 | LUNG | <i>FAM120A</i> | 9 | 96259883 | 96259883 | - | A | splicing | NM_014612 | c.933+2->A | |
| 468 | LUNG | <i>ACINI</i> | 14 | 23548783 | 23548783 | - | GAACGT | nonframeshift | NM_014977 | c.1934_1935insACG TTC | p.S645delinsSRS |
| 468 | LUNG | <i>NCOR1</i> | 17 | 15961804 | 15961806 | AAC | - | nonframeshift | NM_006311 | c.5989_5991del | p.1997_1997del |
| 468 | LUNG | <i>XIRP1</i> | 3 | 39230740 | 39230740 | C | T | nonsynonymous | NM_194293 | c.G197A | p.R66H |
| 468 | LUNG | <i>SEMA3G</i> | 3 | 52470003 | 52470003 | G | T | stopgain | NM_020163 | c.C1965A | p.C655X |
| 468 | LUNG | <i>DMXL1</i> | 5 | 118407302 | 118407302 | C | G | nonsynonymous | NM_001290321 | c.C38G | p.P13R |
| 468 | LUNG | <i>PCDHGA10</i> | 5 | 140793554 | 140793554 | C | A | nonsynonymous | NM_018913 | c.C812A | p.T271N |
| 468 | LUNG | <i>NSD1</i> | 5 | 176638825 | 176638825 | A | G | nonsynonymous | NM_022455 | c.A3425G | p.N1142S |
| 468 | LUNG | <i>FAM86B2</i> | 8 | 12287914 | 12287914 | A | G | nonsynonymous | NM_001137610 | c.T287C | p.L96P |
| 468 | LUNG | <i>TNFRSF10D</i> | 8 | 23002031 | 23002031 | G | T | nonsynonymous | NM_003840 | c.C886A | p.Q296K |
| 468 | LUNG | <i>IFNA1</i> | 9 | 21440916 | 21440916 | C | T | nonsynonymous | NM_024013 | c.C410T | p.A137V |
| 468 | LUNG | <i>CNTNAP3</i> | 9 | 39085808 | 39085808 | T | C | nonsynonymous | NM_033655 | c.A3367G | p.T1123A |
| 468 | LUNG | <i>CEL</i> | 9 | 135947032 | 135947032 | C | A | nonsynonymous | NM_001807 | c.C2152A | p.P718T |
| 468 | LUNG | <i>MASTL</i> | 10 | 27444461 | 27444461 | A | G | nonsynonymous | NM_001172303 | c.A106G | p.S36G |
| 468 | LUNG | <i>OGDHL</i> | 10 | 50951018 | 50951018 | G | C | nonsynonymous | NM_018245 | c.C1868G | p.S623C |
| 468 | LUNG | <i>TEP1</i> | 14 | 20849189 | 20849189 | G | C | nonsynonymous | NM_007110 | c.C4663G | p.R1555G |

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|-----|------|------------------|----|-----------|-----------|---|---|---------------|--------------|--|-------------------------------|
| 468 | LUNG | <i>HOMEZ</i> | 14 | 23745016 | 23745016 | T | C | nonsynonymous | NM_020834 | c.A1421G | p.Q474R |
| 468 | LUNG | <i>SERPINA10</i> | 14 | 94756912 | 94756912 | G | T | nonsynonymous | NM_016186 | c.C19A | p.L7I |
| 468 | LUNG | <i>USP8</i> | 15 | 50773975 | 50773975 | A | C | nonsynonymous | NM_001128610 | c.A1516C | p.K506Q |
| 468 | LUNG | <i>OR1D5</i> | 17 | 2966273 | 2966273 | G | A | nonsynonymous | NM_014566 | c.C629T | p.P210L |
| 468 | LUNG | <i>KRTAP4-8</i> | 17 | 39254054 | 39254054 | A | T | nonsynonymous | NM_031960 | c.T283A | p.C95S |
| 468 | LUNG | <i>KRTAP9-6</i> | 17 | 39422003 | 39422003 | C | G | nonsynonymous | NM_001277331 | c.C374G | p.T125S |
| 468 | LUNG | <i>KRT13</i> | 17 | 39661604 | 39661604 | C | T | nonsynonymous | NM_153490 | c.G199A | p.G67S |
| 468 | LUNG | <i>SKAPI</i> | 17 | 46423327 | 46423327 | C | G | nonsynonymous | NM_001075099 | c.G220C | p.G74R |
| 468 | LUNG | <i>CEP95</i> | 17 | 62515460 | 62515460 | G | A | nonsynonymous | NM_138363 | c.G495A | p.M165I |
| 468 | LUNG | <i>FAM20A</i> | 17 | 66533733 | 66533733 | G | A | nonsynonymous | NM_017565 | c.C1511T | p.T504I |
| 468 | LUNG | <i>GPRC5C</i> | 17 | 72436120 | 72436120 | A | G | nonsynonymous | NM_022036 | c.A340G | p.I114V |
| 468 | LUNG | <i>RNF213</i> | 17 | 78319966 | 78319966 | G | A | nonsynonymous | NM_001256071 | c.G7831A | p.G2611R |
| 468 | LUNG | <i>RSPH6A</i> | 19 | 46307979 | 46307979 | T | C | nonsynonymous | NM_030785 | c.A1184G | p.D395G |
| 468 | LUNG | <i>ASMTL</i> | X | 1537881 | 1537881 | C | T | nonsynonymous | NM_004192 | c.G1372A | p.V458M |
| 469 | LUNG | <i>FSCB</i> | 14 | 44974154 | 44974154 | - | GGGGCCT CCTCAGC TGGTGA GGCTGAA CTTCAGA G | nonframeshift | NM_032135 | c.2036_2037insCTCT GAAGTTCAGCCTC CACCAGCTGAGG AGGCCCC | p.P679delinsPSE VQPPPAEEAP |
| 469 | LUNG | <i>BAIAP2L2</i> | 22 | 38483155 | 38483155 | - | TCATGGG TG | nonframeshift | NM_025045 | c.1234_1235insCAC CCATGA | p.N412delinsTPM N |
| 469 | LUNG | <i>TUBGCP3</i> | 13 | 113201867 | 113201867 | G | A | nonsynonymous | NM_001286279 | c.C1235T | p.T412M |
| 469 | LUNG | <i>ARSD</i> | X | 2836037 | 2836037 | G | C | nonsynonymous | NM_001669 | c.C671G | p.S224C |
| 46 | LUNG | <i>MAP2</i> | 2 | 210569173 | 210569173 | G | A | splicing | NM_001039538 | c.517-1G>A | |

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|-----|------|-----------------|----|-----------|-----------|----------------------------------|----------------------------|---------------|--------------|------------------------------------|-------------------------|
| 470 | LUNG | <i>MAG11</i> | 3 | 65425560 | 65425560 | - | CTG | nonframeshift | NM_001033057 | c.1263_1264insCAG | p.T422delinsQT |
| 470 | LUNG | <i>POLRMT</i> | 19 | 622834 | 622834 | C | G | nonsynonymous | NM_005035 | c.G1442C | p.R481P |
| 470 | LUNG | <i>RBMX</i> | X | 135958704 | 135958704 | G | C | nonsynonymous | NM_002139 | c.C499G | p.P167A |
| 470 | LUNG | <i>RBMX</i> | X | 135960119 | 135960119 | C | T | nonsynonymous | NM_002139 | c.G343A | p.G115R |
| 471 | LUNG | <i>ZNF683</i> | 1 | 26691287 | 26691310 | CCACCGAG CGCTGGGG TGCCCCAG | - | nonframeshift | NM_001114759 | c.727_750del | p.243_250del |
| 471 | LUNG | <i>MYOM3</i> | 1 | 24393564 | 24393564 | G | A | nonsynonymous | NM_152372 | c.C3370T | p.R1124W |
| 471 | LUNG | <i>MUC4</i> | 3 | 195511370 | 195511370 | C | A | nonsynonymous | NM_018406 | c.G7081T | p.V2361L |
| 471 | LUNG | <i>HERC2</i> | 15 | 28483903 | 28483903 | C | A | nonsynonymous | NM_004667 | c.G3593T | p.G1198V |
| 471 | LUNG | <i>C16orf82</i> | 16 | 27078611 | 27078611 | G | A | nonsynonymous | NM_001145545 | c.G295A | p.D99N |
| 47 | LUNG | <i>NADK</i> | 1 | 1684347 | 1684347 | - | CCT | nonframeshift | NM_023018 | c.1336_1337insAGG | p.G446delinsEG |
| 47 | LUNG | <i>KRT2</i> | 12 | 53045603 | 53045603 | - | AAGCCGC TGCCACC TCCA | nonframeshift | NM_000423 | c.323_324insTGGAG GTGGCAGCGGCTT | p.F108delinsFGG GSGF |
| 47 | LUNG | <i>SAMD4A</i> | 14 | 55227114 | 55227114 | T | C | nonsynonymous | NM_015589 | c.T1412C | p.L471P |
| 47 | LUNG | <i>TFDP3</i> | X | 132352230 | 132352230 | C | G | nonsynonymous | NM_016521 | c.G58C | p.E20Q |
| 48 | LUNG | <i>LURAP1L</i> | 9 | 12775861 | 12775861 | - | GGCGGCG GC | nonframeshift | NM_203403 | c.147_148insGGCGG CGGC | p.G49delinsGGG G |
| 4 | LUNG | <i>AKAP2</i> | 9 | 112900341 | 112900341 | - | GAAGCT | nonframeshift | NM_001136562 | c.1824_1825insGAA GCT | p.E608delinsEEA |
| 4 | LUNG | <i>MAMDC4</i> | 9 | 139748277 | 139748296 | CCCTGTGG CAGAGCAC AGGG | - | frameshift | NM_206920 | c.503_522del | p.T168fs |
| 4 | LUNG | <i>ECE1</i> | 1 | 21554464 | 21554464 | C | A | nonsynonymous | NM_001397 | c.G1741T | p.G581W |
| 4 | LUNG | <i>CDC42SE1</i> | 1 | 151028170 | 151028170 | C | A | nonsynonymous | NM_001038707 | c.G37T | p.V13L |

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|----|------|------------------|----|-----------|-----------|--|---|---------------|--------------|----------------|--------------|
| 4 | LUNG | <i>PVRL4</i> | 1 | 161049453 | 161049453 | C | A | nonsynonymous | NM_030916 | c.G366T | p.E122D |
| 4 | LUNG | <i>AIM1</i> | 6 | 106960785 | 106960785 | G | T | nonsynonymous | NM_001624 | c.G569T | p.R190L |
| 4 | LUNG | <i>KIF25</i> | 6 | 168430348 | 168430348 | A | T | nonsynonymous | NM_030615 | c.A83T | p.K28M |
| 4 | LUNG | <i>STAR</i> | 8 | 38001865 | 38001865 | G | T | nonsynonymous | NM_000349 | c.C784A | p.Q262K |
| 4 | LUNG | <i>KCNT1</i> | 9 | 138650351 | 138650351 | C | T | nonsynonymous | NM_020822 | c.C851T | p.T284M |
| 4 | LUNG | <i>MYO1C</i> | 17 | 1386153 | 1386153 | A | C | splicing | NM_001080950 | c.489+2T>G | |
| 4 | LUNG | <i>LRRC45</i> | 17 | 79984868 | 79984868 | G | T | nonsynonymous | NM_144999 | c.G755T | p.R252L |
| 4 | LUNG | <i>SLMO1</i> | 18 | 12420434 | 12420434 | G | T | nonsynonymous | NM_001142405 | c.G143T | p.R48L |
| 4 | LUNG | <i>ADAMTSL5</i> | 19 | 1506622 | 1506622 | G | T | nonsynonymous | NM_213604 | c.C1081A | p.H361N |
| 4 | LUNG | <i>PHLDB3</i> | 19 | 44006363 | 44006363 | C | A | nonsynonymous | NM_198850 | c.G286T | p.G96W |
| 50 | LUNG | <i>RPTN</i> | 1 | 152129066 | 152129101 | TGGTGGGA ATCTCTGT CTTGTTTCT CAGACTGA CCA | - | nonframeshift | NM_001122965 | c.474_509del | p.158_170del |
| 50 | LUNG | <i>ZNF124</i> | 1 | 247320461 | 247320461 | A | - | frameshift | NM_001297568 | c.463delT | p.C155fs |
| 50 | LUNG | <i>NUTM2F</i> | 9 | 97080945 | 97080947 | AGA | - | nonframeshift | NM_017561 | c.2071_2073del | p.691_691del |
| 50 | LUNG | <i>CCDC176</i> | 14 | 74514654 | 74514654 | A | - | frameshift | NM_025057 | c.669delA | p.R223fs |
| 50 | LUNG | <i>KIF17</i> | 1 | 21012609 | 21012609 | G | A | nonsynonymous | NM_020816 | c.C1949T | p.P650L |
| 50 | LUNG | <i>TARP</i> | 7 | 38299727 | 38299727 | T | C | nonsynonymous | NM_001003806 | c.A298G | p.R100G |
| 50 | LUNG | <i>SWI5</i> | 9 | 131038602 | 131038602 | C | A | nonsynonymous | NM_001040011 | c.C178A | p.R60S |
| 50 | LUNG | <i>FBXW5</i> | 9 | 139835559 | 139835559 | G | A | nonsynonymous | NM_018998 | c.C1522T | p.R508W |
| 50 | LUNG | <i>SLC15A1</i> | 13 | 99338487 | 99338487 | A | G | nonsynonymous | NM_005073 | c.T1892C | p.I631T |
| 50 | LUNG | <i>EIF5A</i> | 17 | 7214789 | 7214789 | G | A | nonsynonymous | NM_001970 | c.G391A | p.E131K |
| 52 | LUNG | <i>KRTAP4-11</i> | 17 | 39274291 | 39274291 | T | C | nonsynonymous | NM_033059 | c.A277G | p.M93V |

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|----|------|-----------------|----|-----------|-----------|---|-----|---------------|--------------|-------------------|-----------------|
| 53 | LUNG | <i>YY1</i> | 14 | 100705788 | 100705790 | CCA | - | nonframeshift | NM_003403 | c.207_209del | p.69_70del |
| 53 | LUNG | <i>ZFH3</i> | 16 | 72831358 | 72831363 | TTGTTG | - | nonframeshift | NM_006885 | c.5218_5223del | p.1740_1741del |
| 53 | LUNG | <i>KRTAP4-1</i> | 17 | 39340796 | 39340852 | CGGCAGCA GCTGGACA TACCACAG CTGGGGTG GCAGGTGG TCTGACAG CAGAGTGG G | - | nonframeshift | NM_033060 | c.246_254del | p.82_85del |
| 53 | LUNG | <i>MUC4</i> | 3 | 195507925 | 195507925 | C | T | nonsynonymous | NM_018406 | c.G10526A | p.G3509D |
| 53 | LUNG | <i>ARSD</i> | X | 2836238 | 2836238 | G | A | nonsynonymous | NM_001669 | c.C470T | p.S157F |
| 54 | LUNG | <i>NADK</i> | 1 | 1684347 | 1684347 | - | CCT | nonframeshift | NM_023018 | c.1336_1337insAGG | p.G446delinsEG |
| 54 | LUNG | <i>EP400</i> | 12 | 132547093 | 132547093 | - | CAG | nonframeshift | NM_015409 | c.8181_8182insCAG | p.Q2727delinsQQ |
| 54 | LUNG | <i>CTAGE5</i> | 14 | 39784005 | 39784006 | TA | - | splicing | NM_005930.3 | c.1356+2TA>- | |
| 54 | LUNG | <i>SIRPA</i> | 20 | 1895949 | 1895949 | - | GT | frameshift | NM_001040023 | c.284_285insGT | p.D95fs |
| 54 | LUNG | <i>RAB22A</i> | 20 | 56885067 | 56885067 | G | T | nonsynonymous | NM_020673 | c.G35T | p.G12V |
| 55 | LUNG | <i>ZXDB</i> | X | 57618870 | 57618870 | G | A | nonsynonymous | NM_007157 | c.G389A | p.G130D |
| 56 | LUNG | <i>KRTAP4-1</i> | 17 | 39340796 | 39340852 | CGGCAGCA GCTGGACA TACCACAG CTGGGGTG GCAGGTGG TCTGACAG CAGAGTGG G | - | nonframeshift | NM_033060 | c.246_254del | p.82_85del |

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|----|------|-----------------|----|-----------|-----------|-------------------------------|-------------------------|---------------|--------------|---------------------------------|-----------------------|
| 56 | LUNG | <i>PRR21</i> | 2 | 240982248 | 240982248 | T | C | nonsynonymous | NM_001080835 | c.A152G | p.H51R |
| 56 | LUNG | <i>RP1LI</i> | 8 | 10467605 | 10467605 | C | T | nonsynonymous | NM_178857 | c.G4003A | p.G1335R |
| 56 | LUNG | <i>DMKN</i> | 19 | 36002386 | 36002386 | C | T | nonsynonymous | NM_033317 | c.G845A | p.S282N |
| 56 | LUNG | <i>MAMSTR</i> | 19 | 49216607 | 49216607 | G | A | nonsynonymous | NM_001130915 | c.C1165T | p.P389S |
| 57 | LUNG | <i>SMARCA2</i> | 9 | 2039777 | 2039779 | CAG | - | nonframeshift | NM_001289396 | c.667_669del | p.223_223del |
| 57 | LUNG | <i>WDR66</i> | 12 | 122359397 | 122359397 | - | GAGGAGG AGGAGAA A | nonframeshift | NM_144668 | c.186_187insGAGGA GGAGGAGAAA | p.G62delinsGEEE EK |
| 57 | LUNG | <i>CDC42EP1</i> | 22 | 37964376 | 37964396 | CTGCAAAC CCCCCAGC CACTA | - | nonframeshift | NM_152243 | c.725_745del | p.242_249del |
| 57 | LUNG | <i>SSPO</i> | 7 | 149506147 | 149506147 | G | A | nonsynonymous | NM_198455 | c.G9139A | p.G3047S |
| 57 | LUNG | <i>GAS7</i> | 17 | 9821397 | 9821397 | A | C | nonsynonymous | NM_201433 | c.T1238G | p.V413G |
| 58 | LUNG | <i>RP1LI</i> | 8 | 10466004 | 10466024 | CTGGGCCT CCCCTTCA GCCTC | - | nonframeshift | NM_178857 | c.5584_5604del | p.1862_1868del |
| 58 | LUNG | <i>KRT1</i> | 12 | 53069223 | 53069243 | ACCTCCGG AGCCGTAG CTGCT | - | nonframeshift | NM_006121 | c.1669_1689del | p.557_563del |
| 58 | LUNG | <i>CACNA1S</i> | 1 | 201058513 | 201058513 | C | T | nonsynonymous | NM_000069 | c.G773A | p.G258D |
| 58 | LUNG | <i>GOS2</i> | 1 | 209849085 | 209849085 | G | T | nonsynonymous | NM_015714 | c.G56T | p.R19L |
| 58 | LUNG | <i>GJD4</i> | 10 | 35897304 | 35897304 | C | T | nonsynonymous | NM_153368 | c.C863T | p.T288M |
| 58 | LUNG | <i>UPF3A</i> | 13 | 115047496 | 115047496 | G | C | nonsynonymous | NM_023011 | c.G208C | p.V70L |
| 58 | LUNG | <i>ANKRD30B</i> | 18 | 14779986 | 14779986 | G | A | nonsynonymous | NM_001145029 | c.G1448A | p.R483Q |
| 58 | LUNG | <i>ANKRD30B</i> | 18 | 14780019 | 14780019 | G | T | nonsynonymous | NM_001145029 | c.G1481T | p.G494V |
| 58 | LUNG | <i>ZNF30</i> | 19 | 35422802 | 35422802 | C | G | nonsynonymous | NM_194325 | c.C65G | p.A22G |

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|----|------|-----------------|----|-----------|-----------|---------------|--------|---------------|--------------|------------------------|-----------------|
| 58 | LUNG | <i>FCGBP</i> | 19 | 40376881 | 40376881 | G | C | nonsynonymous | NM_003890 | c.C11541G | p.D3847E |
| 58 | LUNG | <i>XRCC1</i> | 19 | 44079591 | 44079591 | C | A | nonsynonymous | NM_006297 | c.G20T | p.R7L |
| 59 | LUNG | <i>KRTAP5-5</i> | 11 | 1651191 | 1651199 | GGCTGTGG A | - | nonframeshift | NM_001001480 | c.121_129del | p.41_43del |
| 59 | LUNG | <i>MUC20</i> | 3 | 195452799 | 195452799 | C | T | nonsynonymous | NM_001282506 | c.C1325T | p.T442I |
| 59 | LUNG | <i>PTCRA</i> | 6 | 42892962 | 42892962 | G | A | nonsynonymous | NM_001243168 | c.G433A | p.G145R |
| 59 | LUNG | <i>DDX11</i> | 12 | 31237978 | 31237978 | C | T | nonsynonymous | NM_001257144 | c.C556T | p.R186W |
| 59 | LUNG | <i>IPO5</i> | 13 | 98628974 | 98628974 | G | T | nonsynonymous | NM_002271 | c.G78T | p.Q26H |
| 59 | LUNG | <i>KRT14</i> | 17 | 39742921 | 39742921 | G | A | nonsynonymous | NM_000526 | c.C166T | p.R56C |
| 59 | LUNG | <i>RPTOR</i> | 17 | 78896587 | 78896587 | G | A | nonsynonymous | NM_020761 | c.G2584A | p.A862T |
| 5 | LUNG | <i>SMPD1</i> | 11 | 6411936 | 6411941 | GCTGGC | - | nonframeshift | NM_000543 | c.108_113del | p.36_38del |
| 5 | LUNG | <i>HSP90AA1</i> | 14 | 102551254 | 102551254 | - | TTCTTT | nonframeshift | NM_005348 | c.744_745insAAAGA A | p.E249delinsKEE |
| 5 | LUNG | <i>HNRNPCL2</i> | 1 | 13183130 | 13183130 | G | A | nonsynonymous | NM_001136561 | c.C743T | p.A248V |
| 5 | LUNG | <i>HNRNPCL2</i> | 1 | 13183138 | 13183138 | T | A | nonsynonymous | NM_001136561 | c.A735T | p.E245D |
| 5 | LUNG | <i>NEB</i> | 2 | 152347011 | 152347011 | C | A | nonsynonymous | NM_004543 | c.G19568T | p.R6523L |
| 5 | LUNG | <i>PCDHGA4</i> | 5 | 140735221 | 140735221 | T | C | nonsynonymous | NM_018917 | c.T547C | p.F183L |
| 5 | LUNG | <i>RGL2</i> | 6 | 33263110 | 33263110 | C | A | nonsynonymous | NM_004761 | c.G1110T | p.W370C |
| 5 | LUNG | <i>HAUS6</i> | 9 | 19060152 | 19060152 | T | C | nonsynonymous | NM_017645 | c.A1699G | p.I567V |
| 5 | LUNG | <i>OTOGL</i> | 12 | 80747290 | 80747290 | G | T | nonsynonymous | NM_173591 | c.G5566T | p.A1856S |
| 5 | LUNG | <i>MED24</i> | 17 | 38182964 | 38182964 | G | T | stopgain | NM_014815 | c.C1745A | p.S582X |
| 5 | LUNG | <i>JAK3</i> | 19 | 17953956 | 17953956 | C | A | nonsynonymous | NM_000215 | c.G446T | p.R149L |
| 5 | LUNG | <i>SULT2B1</i> | 19 | 49079278 | 49079278 | T | C | nonsynonymous | NM_177973 | c.T152C | p.L51S |
| 60 | LUNG | <i>ACTR8</i> | 3 | 53910109 | 53910109 | - | G | splicing | NM_022899 | c.779-2->C | |
| 60 | LUNG | <i>FOXP3</i> | 14 | 89629086 | 89629094 | CCCTCGCT | - | nonframeshift | NM_001085471 | c.1137_1145del | p.379_382del |

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|----|------|-----------------|----|-----------|-----------|---|-----|---------------|--------------|-------------------|----------------|
| | | | | | | G | | | | | |
| 60 | LUNG | <i>ATAD3C</i> | 1 | 1396132 | 1396132 | T | G | nonsynonymous | NM_001039211 | c.T815G | p.F272C |
| 60 | LUNG | <i>KDF1</i> | 1 | 27278276 | 27278276 | C | T | nonsynonymous | NM_152365 | c.G596A | p.R199Q |
| 60 | LUNG | <i>SZT2</i> | 1 | 43912813 | 43912813 | A | G | nonsynonymous | NM_015284 | c.A9089G | p.H3030R |
| 60 | LUNG | <i>SLC22A13</i> | 3 | 38307656 | 38307656 | G | A | nonsynonymous | NM_004256 | c.G305A | p.R102H |
| 60 | LUNG | <i>FLT4</i> | 5 | 180052965 | 180052965 | G | A | nonsynonymous | NM_182925 | c.C1325T | p.A442V |
| 60 | LUNG | <i>CDH23</i> | 10 | 73565944 | 73565944 | A | C | nonsynonymous | NM_022124 | c.A8084C | p.D2695A |
| 60 | LUNG | <i>RRP12</i> | 10 | 99139505 | 99139505 | A | T | nonsynonymous | NM_015179 | c.T1556A | p.L519Q |
| 60 | LUNG | <i>FNTB</i> | 14 | 65520040 | 65520040 | C | T | nonsynonymous | NM_002028 | c.C1040T | p.A347V |
| 60 | LUNG | <i>AHNAK2</i> | 14 | 105420534 | 105420534 | C | A | nonsynonymous | NM_138420 | c.G1254T | p.R418S |
| 60 | LUNG | <i>SLC35G4</i> | 18 | 11609994 | 11609994 | C | T | nonsynonymous | NM_001282300 | c.C400T | p.R134C |
| 60 | LUNG | <i>SLC35G4</i> | 18 | 11610001 | 11610001 | A | G | nonsynonymous | NM_001282300 | c.A407G | p.H136R |
| 60 | LUNG | <i>SLC35G4</i> | 18 | 11610024 | 11610024 | A | G | nonsynonymous | NM_001282300 | c.A430G | p.I144V |
| 60 | LUNG | <i>TMPRSS2</i> | 21 | 42866297 | 42866297 | G | A | nonsynonymous | NM_005656 | c.C224T | p.T75I |
| 61 | LUNG | <i>FAM90A1</i> | 12 | 8374781 | 8374781 | - | ACG | nonframeshift | NM_018088 | c.1031_1032insCGT | p.T344delinsTV |
| 61 | LUNG | <i>MUC3A</i> | 7 | 100550395 | 100550395 | A | G | nonsynonymous | NM_005960 | c.A976G | p.S326G |
| 61 | LUNG | <i>SLC35G5</i> | 8 | 11189591 | 11189591 | C | T | nonsynonymous | NM_054028 | c.C976T | p.R326W |
| 61 | LUNG | <i>AKAP17A</i> | X | 1719897 | 1719897 | C | G | nonsynonymous | NM_005088 | c.C1498G | p.P500A |
| 62 | LUNG | <i>HLA-DQB2</i> | 6 | 32725559 | 32725559 | C | T | nonsynonymous | NM_001300790 | c.G748A | p.G250S |
| 62 | LUNG | <i>NCOR1</i> | 17 | 16097870 | 16097870 | C | A | nonsynonymous | NM_006311 | c.G14T | p.G5V |
| 62 | LUNG | <i>CCL4L2</i> | 17 | 34641466 | 34641466 | G | A | nonsynonymous | NM_207007 | c.G208A | p.G70S |

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|----|------|-----------------|----|-----------|-----------|---|-------------------------|---------------|--------------|---------------------------------|-----------------------|
| 63 | LUNG | <i>KRTAP4-1</i> | 17 | 39340796 | 39340852 | CGGCAGCA GCTGGACA TACCACAG CTGGGGTG GCAGGTGG TCTGACAG CAGAGTGG G | - | nonframeshift | NM_033060 | c.246_254del | p.82_85del |
| 63 | LUNG | <i>TCF7</i> | 5 | 133479316 | 133479316 | C | G | nonsynonymous | NM_003202 | c.C1060G | p.Q354E |
| 63 | LUNG | <i>PCMI</i> | 8 | 17868817 | 17868817 | A | C | nonsynonymous | NM_006197 | c.A5292C | p.R1764S |
| 63 | LUNG | <i>RPGRIP1L</i> | 16 | 53639522 | 53639522 | G | A | nonsynonymous | NM_015272 | c.C3706T | p.R1236C |
| 63 | LUNG | <i>ORID5</i> | 17 | 2966273 | 2966273 | G | A | nonsynonymous | NM_014566 | c.C629T | p.P210L |
| 64 | LUNG | <i>C9orf43</i> | 9 | 116187645 | 116187645 | - | GCA | nonframeshift | NM_152786 | c.887_888insGCA | p.R296delinsRQ |
| 64 | LUNG | <i>FAM90A1</i> | 12 | 8374781 | 8374781 | - | ACG | nonframeshift | NM_018088 | c.1031_1032insCGT | p.T344delinsTV |
| 64 | LUNG | <i>API5</i> | 11 | 43349381 | 43349381 | A | G | nonsynonymous | NM_001142930 | c.A898G | p.M300V |
| 64 | LUNG | <i>DDX11</i> | 12 | 31237978 | 31237978 | C | T | nonsynonymous | NM_001257144 | c.C556T | p.R186W |
| 64 | LUNG | <i>MADCAM1</i> | 19 | 501786 | 501786 | C | A | nonsynonymous | NM_130760 | c.C785A | p.P262Q |
| 64 | LUNG | <i>COL18A1</i> | 21 | 46930092 | 46930092 | G | A | nonsynonymous | NM_130444 | c.G4846A | p.A1616T |
| 65 | LUNG | <i>WDR66</i> | 12 | 122359397 | 122359397 | - | GAGGAGG AGGAGAA A | nonframeshift | NM_144668 | c.186_187insGAGGA GGAGGAGAAA | p.G62delinsGEEE EK |
| 65 | LUNG | <i>SLCIA7</i> | 1 | 53569179 | 53569179 | G | C | nonsynonymous | NM_006671 | c.C536G | p.P179R |
| 65 | LUNG | <i>FMN2</i> | 1 | 240371243 | 240371243 | C | G | nonsynonymous | NM_020066 | c.C3131G | p.P1044R |
| 65 | LUNG | <i>ADGRL3</i> | 4 | 62800624 | 62800624 | A | G | nonsynonymous | NM_015236 | c.A1975G | p.T659A |
| 65 | LUNG | <i>TUBB8</i> | 10 | 93994 | 93994 | A | G | nonsynonymous | NM_177987 | c.T338C | p.M113T |
| 65 | LUNG | <i>ANKK1</i> | 11 | 113264382 | 113264382 | G | A | nonsynonymous | NM_178510 | c.G365A | p.R122H |

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|----|------|------------------|----|-----------|-----------|--|---|---------------|--------------|--------------|------------|
| 65 | LUNG | <i>UPF3A</i> | 13 | 115047496 | 115047496 | G | C | nonsynonymous | NM_023011 | c.G208C | p.V70L |
| 65 | LUNG | <i>GOLGA6L10</i> | 15 | 82635194 | 82635194 | T | C | nonsynonymous | NM_001164465 | c.A1505G | p.E502G |
| 65 | LUNG | <i>CACNA1H</i> | 16 | 1258033 | 1258033 | G | T | nonsynonymous | NM_021098 | c.G3175T | p.A1059S |
| 66 | LUNG | <i>MST1L</i> | 1 | 17087245 | 17087245 | C | - | splicing | NM_001271733 | c.338+1G>- | |
| 66 | LUNG | <i>PDE4DIP</i> | 1 | 144852379 | 144852379 | G | T | nonsynonymous | NM_001198834 | c.C7064A | p.P2355H |
| 66 | LUNG | <i>PDE4DIP</i> | 1 | 144874003 | 144874003 | C | T | nonsynonymous | NM_014644 | c.G4954A | p.A1652T |
| 66 | LUNG | <i>CCDC50</i> | 3 | 191093082 | 191093082 | G | T | nonsynonymous | NM_178335 | c.G680T | p.R227L |
| 66 | LUNG | <i>ADGRV1</i> | 5 | 90136800 | 90136800 | A | G | nonsynonymous | NM_032119 | c.A17017G | p.K5673E |
| 66 | LUNG | <i>CNTNAP3B</i> | 9 | 43822686 | 43822686 | C | A | nonsynonymous | NM_001201380 | c.C1240A | p.R414S |
| 66 | LUNG | <i>WDR38</i> | 9 | 127618752 | 127618752 | C | T | nonsynonymous | NM_001045476 | c.C491T | p.T164I |
| 66 | LUNG | <i>TOMM20L</i> | 14 | 58863051 | 58863051 | G | A | nonsynonymous | NM_207377 | c.G172A | p.G58S |
| 66 | LUNG | <i>HUNK</i> | 21 | 33371054 | 33371054 | G | A | nonsynonymous | NM_014586 | c.G1702A | p.D568N |
| 66 | LUNG | <i>SREBF2</i> | 22 | 42299055 | 42299055 | G | T | nonsynonymous | NM_004599 | c.G2989T | p.V997L |
| 67 | LUNG | <i>KRTAP5-5</i> | 11 | 1651199 | 1651228 | AGGCTGTG GGGGCTGT GGCTCCGG CTGTGC | - | nonframeshift | NM_001001480 | c.129_158del | p.43_53del |
| 67 | LUNG | <i>FAM53A</i> | 4 | 1656850 | 1656850 | G | A | nonsynonymous | NM_001174070 | c.C737T | p.T246M |
| 67 | LUNG | <i>TRUB1</i> | 10 | 116698112 | 116698112 | A | C | nonsynonymous | NM_139169 | c.A100C | p.T34P |
| 67 | LUNG | <i>CLN5</i> | 13 | 77575072 | 77575072 | C | T | nonsynonymous | NM_006493 | c.C1192T | p.P398S |
| 67 | LUNG | <i>SOX15</i> | 17 | 7492750 | 7492750 | C | A | nonsynonymous | NM_006942 | c.G245T | p.R82L |
| 68 | LUNG | <i>KRTAP5-5</i> | 11 | 1651199 | 1651228 | AGGCTGTG GGGGCTGT GGCTCCGG CTGTGC | - | nonframeshift | NM_001001480 | c.129_158del | p.43_53del |

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|----|------|-----------------|----|-----------|-----------|---|-------------------------|---------------|--------------|---------------------------------|-----------------------|
| 68 | LUNG | <i>WDR66</i> | 12 | 122359397 | 122359397 | - | GAGGAGG AGGAGAA A | nonframeshift | NM_144668 | c.186_187insGAGGA GGAGGAGAAA | p.G62delinsGEEE EK |
| 68 | LUNG | <i>RBMX</i> | X | 135960146 | 135960146 | - | AA | frameshift | NM_002139 | c.315_316insTT | p.P106fs |
| 68 | LUNG | <i>RBMX</i> | X | 135960119 | 135960119 | C | T | nonsynonymous | NM_002139 | c.G343A | p.G115R |
| 69 | LUNG | <i>KRTAP5-5</i> | 11 | 1651199 | 1651199 | - | GGCTGTG GCTCC | nonframeshift | NM_001001480 | c.129_130insGGCTG TGGCTCC | p.G43delinsGGC GS |
| 69 | LUNG | <i>FAM90A1</i> | 12 | 8374781 | 8374781 | - | ACG | nonframeshift | NM_018088 | c.1031_1032insCGT | p.T344delinsTV |
| 69 | LUNG | <i>CDK11B</i> | 1 | 1571841 | 1571841 | A | C | nonsynonymous | NM_001787 | c.T1953G | p.D651E |
| 69 | LUNG | <i>ZBTB40</i> | 1 | 22828154 | 22828154 | A | T | nonsynonymous | NM_014870 | c.A1001T | p.D334V |
| 69 | LUNG | <i>ARPP21</i> | 3 | 35780947 | 35780947 | G | A | nonsynonymous | NM_016300 | c.G1783A | p.A595T |
| 69 | LUNG | <i>CRIPAK</i> | 4 | 1389277 | 1389277 | T | A | nonsynonymous | NM_175918 | c.T978A | p.H326Q |
| 69 | LUNG | <i>RALGDS</i> | 9 | 135977479 | 135977479 | G | C | nonsynonymous | NM_006266 | c.C2057G | p.S686C |
| 69 | LUNG | <i>MUC5B</i> | 11 | 1253976 | 1253976 | A | G | nonsynonymous | NM_002458 | c.A2041G | p.S681G |
| 69 | LUNG | <i>MYH13</i> | 17 | 10215932 | 10215932 | C | T | nonsynonymous | NM_003802 | c.G4324A | p.A1442T |
| 69 | LUNG | <i>RPS15</i> | 19 | 1440068 | 1440068 | G | C | nonsynonymous | NM_001018 | c.G140C | p.R47P |
| 69 | LUNG | <i>ARSD</i> | X | 2836181 | 2836181 | A | T | nonsynonymous | NM_001669 | c.T527A | p.M176K |
| 69 | LUNG | <i>ARSD</i> | X | 2836184 | 2836184 | C | T | nonsynonymous | NM_001669 | c.G524A | p.G175D |
| 6 | LUNG | <i>MST1L</i> | 1 | 17087465 | 17087465 | G | A | nonsynonymous | NM_001271733 | c.C200T | p.P67L |
| 6 | LUNG | <i>RBMXL1</i> | 1 | 89449298 | 89449298 | C | G | nonsynonymous | NM_019610 | c.G212C | p.G71A |
| 6 | LUNG | <i>RAB3GAP2</i> | 1 | 220445627 | 220445627 | C | A | nonsynonymous | NM_012414 | c.G53T | p.R18L |
| 6 | LUNG | <i>DNAH1</i> | 3 | 52379573 | 52379573 | C | A | nonsynonymous | NM_015512 | c.C1507A | p.L503M |
| 6 | LUNG | <i>CDSN</i> | 6 | 31088145 | 31088145 | T | A | nonsynonymous | NM_001264 | c.A52T | p.M18L |
| 6 | LUNG | <i>AP5Z1</i> | 7 | 4825250 | 4825250 | G | T | nonsynonymous | NM_014855 | c.G1067T | p.R356L |
| 6 | LUNG | <i>DBNL</i> | 7 | 44097733 | 44097733 | G | T | nonsynonymous | NM_001014436 | c.G558T | p.E186D |

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|----|------|----------------|----|-----------|-----------|--|---------------|---------------|--------------|---------------------------|----------------------|
| 6 | LUNG | <i>SLC26A4</i> | 7 | 107302134 | 107302134 | C | A | stopgain | NM_000441 | c.C48A | p.Y16X |
| 6 | LUNG | <i>MYOM2</i> | 8 | 2020542 | 2020542 | C | T | nonsynonymous | NM_003970 | c.C911T | p.T304M |
| 6 | LUNG | <i>FAM73B</i> | 9 | 131830104 | 131830104 | G | T | nonsynonymous | NM_032809 | c.G1223T | p.R408L |
| 6 | LUNG | <i>PRRC2B</i> | 9 | 134323065 | 134323065 | G | T | stopgain | NM_013318 | c.G994T | p.G332X |
| 6 | LUNG | <i>SNAPC4</i> | 9 | 139273339 | 139273339 | T | G | nonsynonymous | NM_003086 | c.A2940C | p.R980S |
| 6 | LUNG | <i>ANAPC2</i> | 9 | 140082537 | 140082537 | C | A | nonsynonymous | NM_013366 | c.G136T | p.G46C |
| 6 | LUNG | <i>DPH7</i> | 9 | 140450082 | 140450082 | G | A | nonsynonymous | NM_138778 | c.C968T | p.T323M |
| 6 | LUNG | <i>ERICH6B</i> | 13 | 46170726 | 46170726 | A | G | nonsynonymous | NM_182542 | c.T415C | p.Y139H |
| 6 | LUNG | <i>ERICH6B</i> | 13 | 46170728 | 46170728 | T | C | nonsynonymous | NM_182542 | c.A413G | p.E138G |
| 6 | LUNG | <i>COL4A1</i> | 13 | 110831302 | 110831302 | G | T | nonsynonymous | NM_001845 | c.C2426A | p.P809H |
| 6 | LUNG | <i>PKD1</i> | 16 | 2158683 | 2158683 | C | A | nonsynonymous | NM_001009944 | c.G6485T | p.R2162L |
| 6 | LUNG | <i>FLYWCH1</i> | 16 | 2983332 | 2983332 | C | A | nonsynonymous | NM_020912 | c.C995A | p.P332H |
| 6 | LUNG | <i>LPIN3</i> | 20 | 39983372 | 39983372 | G | A | nonsynonymous | NM_001301860 | c.G1618A | p.E540K |
| 6 | LUNG | <i>ZMYND8</i> | 20 | 45878118 | 45878118 | C | G | nonsynonymous | NM_001281773 | c.G1627C | p.V543L |
| 6 | LUNG | <i>RTFDC1</i> | 20 | 55047462 | 55047462 | G | T | nonsynonymous | NM_001283035 | c.G150T | p.M50I |
| 6 | LUNG | <i>MAGEB2</i> | X | 30236878 | 30236878 | G | A | nonsynonymous | NM_002364 | c.G181A | p.E61K |
| 6 | LUNG | <i>H2BFM</i> | X | 103294760 | 103294760 | C | T | stopgain | NM_001164416 | c.C217T | p.Q73X |
| 70 | LUNG | <i>RPL14</i> | 3 | 40503520 | 40503520 | - | CTGCTGC TG | nonframeshift | NM_001034996 | c.445_446insCTGCT GCTG | p.T149delinsTAA A |
| 70 | LUNG | <i>FAM47A</i> | X | 34149658 | 34149693 | ATGGGACA CTCCAGTC TCTGGAGG CTCCGGGC GGAG | - | nonframeshift | NM_203408 | c.703_738del | p.235_246del |
| 70 | LUNG | <i>CFD</i> | 19 | 859739 | 859739 | C | T | nonsynonymous | NM_001928 | c.C50T | p.A17V |

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|----|------|-----------------|----|-----------|-----------|--|---|---------------|--------------|---|---------------------------|
| 70 | LUNG | <i>MYO1F</i> | 19 | 8601903 | 8601903 | A | C | nonsynonymous | NM_012335 | c.T1729G | p.C577G |
| 70 | LUNG | <i>CYP2D6</i> | 22 | 42524310 | 42524310 | C | A | nonsynonymous | NM_000106 | c.G709T | p.A237S |
| 72 | LUNG | <i>KRTAP5-1</i> | 11 | 1606121 | 1606150 | CCACAGCC ACCCTTGG ATCCCCCA CAAGAG | - | nonframeshift | NM_001005922 | c.330_359del | p.110_120del |
| 72 | LUNG | <i>DND1</i> | 5 | 140052430 | 140052430 | G | T | nonsynonymous | NM_194249 | c.C204A | p.D68E |
| 72 | LUNG | <i>MGA</i> | 15 | 42040862 | 42040862 | C | A | nonsynonymous | NM_001164273 | c.C5240A | p.T1747N |
| 72 | LUNG | <i>PLEKHH3</i> | 17 | 40822342 | 40822342 | C | T | nonsynonymous | NM_024927 | c.G1607A | p.R536H |
| 72 | LUNG | <i>ABCC3</i> | 17 | 48733349 | 48733349 | C | T | nonsynonymous | NM_003786 | c.C202T | p.H68Y |
| 72 | LUNG | <i>UNC13D</i> | 17 | 73825036 | 73825036 | C | G | nonsynonymous | NM_199242 | c.G2983C | p.A995P |
| 72 | LUNG | <i>CCDC40</i> | 17 | 78058700 | 78058700 | C | G | nonsynonymous | NM_017950 | c.C2148G | p.I716M |
| 72 | LUNG | <i>RPS15</i> | 19 | 1440230 | 1440230 | C | G | nonsynonymous | NM_001018 | c.C302G | p.T101S |
| 73 | LUNG | <i>PITRM1</i> | 10 | 3208567 | 3208567 | - | GCACGCT AGGGAAG AGAGAGG | nonframeshift | NM_001242307 | c.271_272insCCTCT CTCTTCCTAGCG TGC | p.Q91delinsPSLF PSVQ |
| 73 | LUNG | <i>KRT4</i> | 12 | 53207583 | 53207583 | - | CACCAAA GCCACCA GTGCCGA AACCAG | nonframeshift | NM_002272 | c.259_260insCTGGT TTCGGCACTGGTG GCTTTGGTG | p.G87delinsAGF GTGGFGG |
| 73 | LUNG | <i>SCEL</i> | 13 | 78173472 | 78173472 | - | TC | frameshift | NM_144777 | c.806_807insTC | p.G269fs |
| 73 | LUNG | <i>DMKN</i> | 19 | 36002379 | 36002381 | GCC | - | nonframeshift | NM_033317 | c.850_852del | p.284_284del |
| 73 | LUNG | <i>BRD9</i> | 5 | 865585 | 865585 | G | A | nonsynonymous | NM_023924 | c.C1637T | p.P546L |
| 73 | LUNG | <i>TGSI</i> | 8 | 56699560 | 56699560 | G | C | nonsynonymous | NM_024831 | c.G1103C | p.G368A |
| 73 | LUNG | <i>RAD54B</i> | 8 | 95470511 | 95470511 | C | G | nonsynonymous | NM_012415 | c.G289C | p.D97H |

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|----|------|----------------|----|-----------|-----------|----------------------------|--|---------------|--------------|--|--------------|
| 73 | LUNG | <i>HRCT1</i> | 9 | 35906583 | 35906583 | T | A | nonsynonymous | NM_001039792 | c.T299A | p.L100H |
| 73 | LUNG | <i>OR5D16</i> | 11 | 55607207 | 55607207 | A | G | nonsynonymous | NM_001005496 | c.A980G | p.E327G |
| 73 | LUNG | <i>MGA</i> | 15 | 41961952 | 41961952 | C | T | nonsynonymous | NM_001164273 | c.C860T | p.S287F |
| 73 | LUNG | <i>EFTUD1</i> | 15 | 82530786 | 82530786 | A | G | nonsynonymous | NM_024580 | c.T593C | p.V198A |
| 73 | LUNG | <i>PLIN4</i> | 19 | 4511376 | 4511376 | C | A | nonsynonymous | NM_001080400 | c.G2554T | p.G852C |
| 73 | LUNG | <i>DMKN</i> | 19 | 36002377 | 36002377 | C | T | nonsynonymous | NM_033317 | c.G854A | p.S285N |
| 73 | LUNG | <i>SIRPB1</i> | 20 | 1552423 | 1552423 | T | C | nonsynonymous | NM_006065 | c.A694G | p.I232V |
| 73 | LUNG | <i>SIRPB1</i> | 20 | 1552432 | 1552432 | T | C | nonsynonymous | NM_006065 | c.A685G | p.I229V |
| 73 | LUNG | <i>SIRPB1</i> | 20 | 1552647 | 1552647 | A | G | nonsynonymous | NM_006065 | c.T470C | p.V157A |
| 73 | LUNG | <i>SIRPB1</i> | 20 | 1552659 | 1552659 | G | A | nonsynonymous | NM_006065 | c.C458T | p.S153L |
| 73 | LUNG | <i>ARSD</i> | X | 2836037 | 2836037 | G | C | nonsynonymous | NM_001669 | c.C671G | p.S224C |
| 73 | LUNG | <i>CXorf58</i> | X | 23928489 | 23928489 | C | T | nonsynonymous | NM_152761 | c.C70T | p.R24C |
| 74 | LUNG | <i>KRT4</i> | 12 | 53207583 | 53207583 | - | CACCAAA GCCACCA GTGCCGA AACCAGC | frameshift | NM_002272 | c.259_260insGCTGG TTTCGGCACTGGT GGCTTTGGTG | p.G87fs |
| 74 | LUNG | <i>NPEPPS</i> | 17 | 45669428 | 45669428 | - | A | splicing | NM_006310 | c.1365+2->A | |
| 74 | LUNG | <i>ADM2</i> | 22 | 50921149 | 50921166 | ACACTCGG GCCCCCGA AG | - | nonframeshift | NM_001253845 | c.264_281del | p.88_94del |
| 74 | LUNG | <i>VCX2</i> | X | 8138165 | 8138168 | CCTC | - | frameshift | NM_016378 | c.325_328del | p.E109fs |
| 74 | LUNG | <i>PRAMEF1</i> | 1 | 12854105 | 12854105 | A | G | nonsynonymous | NM_023013 | c.A329G | p.E110G |
| 74 | LUNG | <i>ANAPC1</i> | 2 | 112620087 | 112620087 | G | A | nonsynonymous | NM_022662 | c.C1141T | p.H381Y |
| 74 | LUNG | <i>KRT1</i> | 12 | 53069236 | 53069256 | TAGCTGCT ACCTCCGG | - | nonframeshift | NM_006121 | c.1656_1676del | p.552_559del |

| | | | | | | AGCCA | | | | | |
|----|------|-----------------|----|-----------|-----------|---|---------------|---------------|--------------|-----------------------------|----------------------|
| 74 | LUNG | <i>TBC1D4</i> | 13 | 75900510 | 75900510 | G | A | nonsynonymous | NM_014832 | c.C1856T | p.P619L |
| 74 | LUNG | <i>TBC1D28</i> | 17 | 18544392 | 18544392 | T | C | nonsynonymous | NM_001039397 | c.A101G | p.D34G |
| 74 | LUNG | <i>FBXW10</i> | 17 | 18653403 | 18653403 | G | A | nonsynonymous | NM_001267585 | c.G952A | p.D318N |
| 74 | LUNG | <i>RLIM</i> | X | 73811739 | 73811739 | A | G | nonsynonymous | NM_016120 | c.T1411C | p.S471P |
| 75 | LUNG | <i>MSH3</i> | 5 | 79950710 | 79950736 | CAGCGGCC GCAGCGGC CGCAGCGC CCC | - | nonframeshift | NM_002439 | c.164_190del | p.55_64del |
| 75 | LUNG | <i>DIAPH1</i> | 5 | 140953564 | 140953566 | GGA | - | nonframeshift | NM_005219 | c.1851_1853del | p.617_618del |
| 75 | LUNG | <i>TPRX1</i> | 19 | 48305543 | 48305566 | GGGCCTGG GATCGGGC CTGGGTTC | - | nonframeshift | NM_198479 | c.702_725del | p.234_242del |
| 75 | LUNG | <i>MUC4</i> | 3 | 195505836 | 195505836 | G | C | nonsynonymous | NM_018406 | c.C12615G | p.H4205Q |
| 75 | LUNG | <i>MROH2B</i> | 5 | 41018514 | 41018514 | C | A | nonsynonymous | NM_173489 | c.G2692T | p.V898F |
| 75 | LUNG | <i>DNAH8</i> | 6 | 38858447 | 38858447 | C | A | stopgain | NM_001206927 | c.C8493A | p.Y2831X |
| 75 | LUNG | <i>CEL</i> | 9 | 135947032 | 135947032 | C | A | nonsynonymous | NM_001807 | c.C2152A | p.P718T |
| 75 | LUNG | <i>CARNS1</i> | 11 | 67186395 | 67186395 | G | T | nonsynonymous | NM_020811 | c.G164T | p.G55V |
| 76 | LUNG | <i>ATXN3</i> | 14 | 92537354 | 92537356 | CCT | - | nonframeshift | NM_001164782 | c.66_68del | p.22_23del |
| 76 | LUNG | <i>BAIAP2L2</i> | 22 | 38483155 | 38483155 | - | TCATGGG TG | nonframeshift | NM_025045 | c.1234_1235insCAC CCATGA | p.N412delinsTPM N |
| 76 | LUNG | <i>SH3TC1</i> | 4 | 8214545 | 8214545 | G | A | nonsynonymous | NM_018986 | c.G365A | p.R122H |
| 76 | LUNG | <i>FAM129B</i> | 9 | 130269566 | 130269566 | C | G | nonsynonymous | NM_022833 | c.G1799C | p.G600A |
| 76 | LUNG | <i>PARP4</i> | 13 | 25021323 | 25021323 | A | G | nonsynonymous | NM_006437 | c.T3116C | p.I1039T |

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|----|------|----------------|----|-----------|-----------|-------------------------------|---|---------------|--------------|----------------|----------------|
| 76 | LUNG | <i>JAK3</i> | 19 | 17953950 | 17953950 | G | C | nonsynonymous | NM_000215 | c.C452G | p.P151R |
| 76 | LUNG | <i>SIRPA</i> | 20 | 1895963 | 1895963 | A | G | nonsynonymous | NM_001040023 | c.A298G | p.N100D |
| 76 | LUNG | <i>SIRPA</i> | 20 | 1895965 | 1895965 | C | A | nonsynonymous | NM_001040023 | c.C300A | p.N100K |
| 76 | LUNG | <i>ARSD</i> | X | 2836181 | 2836181 | A | T | nonsynonymous | NM_001669 | c.T527A | p.M176K |
| 76 | LUNG | <i>ARSD</i> | X | 2836184 | 2836184 | C | T | nonsynonymous | NM_001669 | c.G524A | p.G175D |
| 77 | LUNG | <i>NUGGC</i> | 8 | 27880851 | 27880851 | G | C | nonsynonymous | NM_001010906 | c.C2374G | p.P792A |
| 77 | LUNG | <i>PDPR</i> | 16 | 70182390 | 70182390 | T | G | nonsynonymous | NM_017990 | c.T1986G | p.N662K |
| 77 | LUNG | <i>KLHL26</i> | 19 | 18779415 | 18779415 | G | A | nonsynonymous | NM_018316 | c.G1208A | p.R403H |
| 77 | LUNG | <i>CLDN5</i> | 22 | 19511229 | 19511229 | C | T | nonsynonymous | NM_001130861 | c.G805A | p.G269S |
| 77 | LUNG | <i>ARSD</i> | X | 2836211 | 2836211 | A | T | nonsynonymous | NM_001669 | c.T497A | p.L166Q |
| 77 | LUNG | <i>ARSD</i> | X | 2836238 | 2836238 | G | A | nonsynonymous | NM_001669 | c.C470T | p.S157F |
| 78 | LUNG | <i>PDE4DIP</i> | 1 | 144852379 | 144852379 | G | T | nonsynonymous | NM_001198834 | c.C7064A | p.P2355H |
| 78 | LUNG | <i>TAS2R43</i> | 12 | 11244096 | 11244096 | T | C | nonsynonymous | NM_176884 | c.A733G | p.I245V |
| 79 | LUNG | <i>LRRCL4B</i> | 5 | 192294 | 192294 | G | A | nonsynonymous | NM_001080478 | c.G641A | p.R214H |
| 79 | LUNG | <i>TNKS</i> | 8 | 9413579 | 9413579 | A | C | nonsynonymous | NM_003747 | c.A130C | p.T44P |
| 7 | LUNG | <i>COL16A1</i> | 1 | 32120948 | 32120956 | CCCCGAAG G | - | nonframeshift | NM_001856 | c.4249_4257del | p.1417_1419del |
| 7 | LUNG | <i>RP1L1</i> | 8 | 10466004 | 10466024 | CTGGGCCT CCCCTTCA GCCTC | - | nonframeshift | NM_178857 | c.5584_5604del | p.1862_1868del |
| 7 | LUNG | <i>CTAGE5</i> | 14 | 39784005 | 39784008 | TATA | - | splicing | NM_005930.3 | c.1356+2TATA>- | |
| 7 | LUNG | <i>MEFV</i> | 16 | 3304653 | 3304658 | CTCCGC | - | nonframeshift | NM_000243 | c.410_415del | p.137_139del |
| 7 | LUNG | <i>RBMXL1</i> | 1 | 89449298 | 89449298 | C | G | nonsynonymous | NM_019610 | c.G212C | p.G71A |
| 7 | LUNG | <i>MST1</i> | 3 | 49723617 | 49723617 | C | A | nonsynonymous | NM_020998 | c.G1025T | p.R342L |
| 7 | LUNG | <i>CRIPAK</i> | 4 | 1389161 | 1389161 | A | G | nonsynonymous | NM_175918 | c.A862G | p.S288G |

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|----|------|------------------|----|-----------|-----------|-----|-----|---------------|--------------|-----------------|----------------|
| 7 | LUNG | <i>SSPO</i> | 7 | 149485465 | 149485465 | A | C | nonsynonymous | NM_198455 | c.A3871C | p.T1291P |
| 7 | LUNG | <i>WDR34</i> | 9 | 131397526 | 131397526 | G | C | nonsynonymous | NM_052844 | c.C826G | p.P276A |
| 7 | LUNG | <i>C10orf71</i> | 10 | 50533658 | 50533658 | G | A | nonsynonymous | NM_001135196 | c.G3068A | p.C1023Y |
| 7 | LUNG | <i>PLA2G4F</i> | 15 | 42439944 | 42439944 | A | C | nonsynonymous | NM_213600 | c.T1076G | p.V359G |
| 7 | LUNG | <i>BANP</i> | 16 | 88068967 | 88068967 | G | T | nonsynonymous | NM_001173543 | c.G1206T | p.Q402H |
| 7 | LUNG | <i>LGALS9B</i> | 17 | 20370767 | 20370767 | G | C | nonsynonymous | NM_001042685 | c.C17G | p.S6C |
| 7 | LUNG | <i>WDR87</i> | 19 | 38377404 | 38377404 | C | T | nonsynonymous | NM_031951 | c.G6790A | p.E2264K |
| 7 | LUNG | <i>SIGLEC12</i> | 19 | 51995034 | 51995034 | G | A | nonsynonymous | NM_053003 | c.C1649T | p.P550L |
| 7 | LUNG | <i>ARSD</i> | X | 2836181 | 2836181 | A | T | nonsynonymous | NM_001669 | c.T527A | p.M176K |
| 7 | LUNG | <i>ARSD</i> | X | 2836184 | 2836184 | C | T | nonsynonymous | NM_001669 | c.G524A | p.G175D |
| 7 | LUNG | <i>MAGED2</i> | X | 54836183 | 54836183 | C | A | stopgain | NM_177433 | c.C74A | p.S25X |
| 7 | LUNG | <i>RBMX</i> | X | 135960119 | 135960119 | C | T | nonsynonymous | NM_002139 | c.G343A | p.G115R |
| 80 | LUNG | <i>LOC286238</i> | 9 | 91262343 | 91262343 | - | TGG | nonframeshift | NM_001100111 | c.299_300insCCA | p.H100delinsHH |
| 80 | LUNG | <i>NIPSNAP3A</i> | 9 | 107521616 | 107521617 | AT | - | frameshift | NM_015469 | c.741_742del | p.K247fs |
| 80 | LUNG | <i>GSTO1</i> | 10 | 106022830 | 106022832 | GAG | - | nonframeshift | NM_004832 | c.460_462del | p.154_154del |
| 80 | LUNG | <i>PSG1</i> | 19 | 43376068 | 43376068 | A | - | frameshift | NM_001184825 | c.560delT | p.L187fs |
| 80 | LUNG | <i>RFPL1</i> | 22 | 29837567 | 29837569 | TCC | - | nonframeshift | NM_021026 | c.410_412del | p.137_138del |
| 80 | LUNG | <i>FBLN2</i> | 3 | 13613081 | 13613081 | C | T | nonsynonymous | NM_001998 | c.C1226T | p.P409L |
| 80 | LUNG | <i>DAG1</i> | 3 | 49548226 | 49548226 | A | G | nonsynonymous | NM_001177644 | c.A259G | p.I87V |
| 80 | LUNG | <i>DMXL1</i> | 5 | 118465070 | 118465070 | G | C | nonsynonymous | NM_001290321 | c.G1267C | p.E423Q |
| 80 | LUNG | <i>ARAP3</i> | 5 | 141041639 | 141041639 | C | T | nonsynonymous | NM_022481 | c.G2984A | p.R995Q |
| 80 | LUNG | <i>FPGS</i> | 9 | 130566678 | 130566678 | C | T | nonsynonymous | NM_004957 | c.C253T | p.R85W |
| 80 | LUNG | <i>GTF3C4</i> | 9 | 135553706 | 135553706 | G | A | nonsynonymous | NM_012204 | c.G700A | p.G234R |
| 80 | LUNG | <i>CCSER2</i> | 10 | 86130899 | 86130899 | C | T | nonsynonymous | NM_018999 | c.C91T | p.P31S |
| 80 | LUNG | <i>HTR7</i> | 10 | 92509035 | 92509035 | C | T | nonsynonymous | NM_019859 | c.G856A | p.V286I |

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|----|------|-----------------|----|-----------|-----------|---|---|---------------|--------------|----------|----------|
| 80 | LUNG | <i>MMS19</i> | 10 | 99223618 | 99223618 | G | A | nonsynonymous | NM_022362 | c.C1909T | p.P637S |
| 80 | LUNG | <i>FRY</i> | 13 | 32709054 | 32709054 | A | T | nonsynonymous | NM_023037 | c.A899T | p.Y300F |
| 80 | LUNG | <i>KBTBD7</i> | 13 | 41767589 | 41767589 | G | A | nonsynonymous | NM_032138 | c.C805T | p.H269Y |
| 80 | LUNG | <i>TPSAB1</i> | 16 | 1291175 | 1291175 | G | A | nonsynonymous | NM_003294 | c.G83A | p.R28Q |
| 80 | LUNG | <i>TPSAB1</i> | 16 | 1291178 | 1291178 | T | C | nonsynonymous | NM_003294 | c.T86C | p.V29A |
| 80 | LUNG | <i>AMH</i> | 19 | 2249366 | 2249366 | T | G | nonsynonymous | NM_000479 | c.T35G | p.V12G |
| 80 | LUNG | <i>PLIN4</i> | 19 | 4511746 | 4511746 | A | T | nonsynonymous | NM_001080400 | c.T2184A | p.N728K |
| 80 | LUNG | <i>CATSPERD</i> | 19 | 5751781 | 5751781 | G | A | nonsynonymous | NM_152784 | c.G1111A | p.V371M |
| 80 | LUNG | <i>IGFLR1</i> | 19 | 36230788 | 36230788 | T | G | nonsynonymous | NM_024660 | c.A544C | p.I182L |
| 80 | LUNG | <i>PNMAL2</i> | 19 | 46998290 | 46998290 | C | T | nonsynonymous | NM_020709 | c.G433A | p.G145R |
| 80 | LUNG | <i>ZC3H4</i> | 19 | 47570199 | 47570199 | G | A | nonsynonymous | NM_015168 | c.C3326T | p.P1109L |
| 80 | LUNG | <i>ZNF160</i> | 19 | 53573236 | 53573236 | C | T | nonsynonymous | NM_001102603 | c.G551A | p.S184N |
| 80 | LUNG | <i>PTPRH</i> | 19 | 55703094 | 55703094 | G | T | nonsynonymous | NM_002842 | c.C2273A | p.A758D |
| 80 | LUNG | <i>PTPRH</i> | 19 | 55708761 | 55708761 | G | T | nonsynonymous | NM_002842 | c.C1714A | p.Q572K |
| 80 | LUNG | <i>PEG3</i> | 19 | 57335015 | 57335015 | C | T | nonsynonymous | NM_001146184 | c.G427A | p.D143N |
| 80 | LUNG | <i>HIRA</i> | 22 | 19344569 | 19344569 | A | G | nonsynonymous | NM_003325 | c.T2240C | p.V747A |
| 80 | LUNG | <i>FOXRED2</i> | 22 | 36900184 | 36900184 | C | T | nonsynonymous | NM_001102371 | c.G1010A | p.R337H |
| 80 | LUNG | <i>STARD8</i> | X | 67937976 | 67937976 | G | A | nonsynonymous | NM_014725 | c.G980A | p.R327Q |
| 80 | LUNG | <i>ARMCX6</i> | X | 100871148 | 100871148 | T | C | nonsynonymous | NM_019007 | c.A463G | p.S155G |
| 80 | LUNG | <i>MAGEC1</i> | X | 140995315 | 140995315 | C | T | nonsynonymous | NM_005462 | c.C2125T | p.H709Y |
| 80 | LUNG | <i>PNMA3</i> | X | 152226542 | 152226542 | T | C | nonsynonymous | NM_013364 | c.T1130C | p.V377A |
| 80 | LUNG | <i>PLXNB3</i> | X | 153041868 | 153041868 | T | A | nonsynonymous | NM_005393 | c.T4787A | p.V1596E |
| 81 | LUNG | <i>DTD2</i> | 14 | 31926584 | 31926584 | G | A | nonsynonymous | NM_080664 | c.C16T | p.R6W |
| 81 | LUNG | <i>CDC27</i> | 17 | 45249335 | 45249335 | T | G | nonsynonymous | NM_001256 | c.A199C | p.T67P |
| 81 | LUNG | <i>ZXDB</i> | X | 57618870 | 57618870 | G | A | nonsynonymous | NM_007157 | c.G389A | p.G130D |

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|----|------|-----------------|----|-----------|-----------|--|-----|---------------|--------------|-----------------|----------------|
| 82 | LUNG | <i>SOGA3</i> | 6 | 127837125 | 127837125 | T | C | nonsynonymous | NM_001012279 | c.A635G | p.E212G |
| 82 | LUNG | <i>CNTNAP3B</i> | 9 | 43915893 | 43915893 | G | C | nonsynonymous | NM_001201380 | c.G3741C | p.M1247I |
| 82 | LUNG | <i>ALDH16A1</i> | 19 | 49965246 | 49965246 | T | A | nonsynonymous | NM_153329 | c.T865A | p.S289T |
| 83 | LUNG | <i>PCDHGA10</i> | 5 | 140795208 | 140795208 | - | A | frameshift | NM_032090 | c.2467dupA | p.V822fs |
| 83 | LUNG | <i>MUC20</i> | 3 | 195452799 | 195452799 | C | T | nonsynonymous | NM_001282506 | c.C1325T | p.T442I |
| 83 | LUNG | <i>PABPC1</i> | 8 | 101719004 | 101719004 | G | A | nonsynonymous | NM_002568 | c.C1477T | p.R493C |
| 83 | LUNG | <i>PPAPDC3</i> | 9 | 134165397 | 134165397 | C | A | nonsynonymous | NM_032728 | c.C13A | p.Q5K |
| 83 | LUNG | <i>LMF1</i> | 16 | 1020944 | 1020944 | C | A | stopgain | NM_022773 | c.G37T | p.E13X |
| 83 | LUNG | <i>FMRI</i> | X | 147027131 | 147027131 | C | A | nonsynonymous | NM_002024 | c.C1732A | p.L578I |
| 86 | LUNG | <i>KRTAP5-1</i> | 11 | 1606121 | 1606150 | CCACAGCC ACCCTTGG ATCCCCCA CAAGAG | - | nonframeshift | NM_001005922 | c.330_359del | p.110_120del |
| 86 | LUNG | <i>CESI</i> | 16 | 55844924 | 55844924 | - | AA | splicing | NM_001025194 | c.1084-2->TT | |
| 86 | LUNG | <i>C6orf223</i> | 6 | 43968412 | 43968412 | C | T | nonsynonymous | NM_153246 | c.C56T | p.T19M |
| 86 | LUNG | <i>CDH23</i> | 10 | 73565980 | 73565980 | C | T | nonsynonymous | NM_022124 | c.C8120T | p.P2707L |
| 86 | LUNG | <i>LATS2</i> | 13 | 21562756 | 21562756 | G | A | nonsynonymous | NM_014572 | c.C1163T | p.A388V |
| 86 | LUNG | <i>RBMX</i> | X | 135960119 | 135960119 | C | T | nonsynonymous | NM_002139 | c.G343A | p.G115R |
| 87 | LUNG | <i>MST1L</i> | 1 | 17087245 | 17087245 | C | - | splicing | NM_001271733 | c.338+1G>- | |
| 87 | LUNG | <i>SLC22A14</i> | 3 | 38349147 | 38349150 | TTTG | - | frameshift | NM_004803 | c.711_714del | p.Y237fs |
| 87 | LUNG | <i>EMCN</i> | 4 | 101401162 | 101401164 | AAC | - | nonframeshift | NM_016242 | c.97_99del | p.33_33del |
| 87 | LUNG | <i>CDKN2AIP</i> | 4 | 184367559 | 184367561 | CTG | - | nonframeshift | NM_017632 | c.722_724del | p.241_242del |
| 87 | LUNG | <i>CUL7</i> | 6 | 43018766 | 43018768 | CTC | - | nonframeshift | NM_014780 | c.1171_1173del | p.391_391del |
| 87 | LUNG | <i>TDRD6</i> | 6 | 46657977 | 46657979 | AGA | - | nonframeshift | NM_001010870 | c.2112_2114del | p.704_705del |
| 87 | LUNG | <i>EME1</i> | 17 | 48452978 | 48452978 | - | AGC | nonframeshift | NM_152463 | c.409_410insAGC | p.K137delinsKQ |

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|----|------|----------------|----|-----------|-----------|---|---|---------------|--------------|----------|----------|
| 87 | LUNG | <i>SH3BGR</i> | 21 | 40883671 | 40883671 | G | A | nonsynonymous | NM_007341 | c.G689A | p.G230E |
| 87 | LUNG | <i>NPPB</i> | 1 | 11918519 | 11918519 | C | T | nonsynonymous | NM_002521 | c.G140A | p.R47H |
| 87 | LUNG | <i>EPHA8</i> | 1 | 22895820 | 22895820 | G | A | nonsynonymous | NM_020526 | c.G133A | p.G45S |
| 87 | LUNG | <i>CIQA</i> | 1 | 22964176 | 22964176 | G | A | nonsynonymous | NM_015991 | c.G67A | p.E23K |
| 87 | LUNG | <i>MSH4</i> | 1 | 76345823 | 76345823 | A | G | nonsynonymous | NM_002440 | c.A1766G | p.Y589C |
| 87 | LUNG | <i>GBP5</i> | 1 | 89733172 | 89733172 | G | A | nonsynonymous | NM_001134486 | c.C356T | p.A119V |
| 87 | LUNG | <i>SORT1</i> | 1 | 109878962 | 109878962 | G | A | nonsynonymous | NM_002959 | c.C1271T | p.S424F |
| 87 | LUNG | <i>EPS8L3</i> | 1 | 110300143 | 110300143 | G | T | nonsynonymous | NM_133181 | c.C929A | p.A310D |
| 87 | LUNG | <i>AP4B1</i> | 1 | 114438448 | 114438448 | T | C | nonsynonymous | NM_001253852 | c.A1723G | p.I575V |
| 87 | LUNG | <i>NBPF14</i> | 1 | 148342488 | 148342488 | T | C | nonsynonymous | NM_001277444 | c.A548G | p.Q183R |
| 87 | LUNG | <i>EOMES</i> | 3 | 27759208 | 27759208 | C | T | nonsynonymous | NM_005442 | c.G1414A | p.V472I |
| 87 | LUNG | <i>HERC6</i> | 4 | 89352440 | 89352440 | A | C | nonsynonymous | NM_017912 | c.A2233C | p.M745L |
| 87 | LUNG | <i>TMEM154</i> | 4 | 153573692 | 153573692 | G | A | nonsynonymous | NM_152680 | c.C362T | p.T121I |
| 87 | LUNG | <i>ANKRD55</i> | 5 | 55398381 | 55398381 | G | A | nonsynonymous | NM_024669 | c.C1663T | p.H555Y |
| 87 | LUNG | <i>PPWD1</i> | 5 | 64883128 | 64883128 | A | T | nonsynonymous | NM_015342 | c.A1846T | p.M616L |
| 87 | LUNG | <i>NUDT12</i> | 5 | 102894730 | 102894730 | C | T | nonsynonymous | NM_031438 | c.G646A | p.V216I |
| 87 | LUNG | <i>MRS2</i> | 6 | 24423277 | 24423277 | T | C | nonsynonymous | NM_001286264 | c.T1229C | p.M410T |
| 87 | LUNG | <i>HLA-A</i> | 6 | 29912108 | 29912108 | G | C | nonsynonymous | NM_002116 | c.G829C | p.E277Q |
| 87 | LUNG | <i>TRIM40</i> | 6 | 30104989 | 30104989 | C | A | nonsynonymous | NM_001286633 | c.C176A | p.P59H |
| 87 | LUNG | <i>GNL1</i> | 6 | 30520367 | 30520367 | C | T | nonsynonymous | NM_005275 | c.G976A | p.E326K |
| 87 | LUNG | <i>DDR1</i> | 6 | 30862440 | 30862440 | A | G | nonsynonymous | NM_013993 | c.A1505G | p.N502S |
| 87 | LUNG | <i>HLA-B</i> | 6 | 31323202 | 31323202 | T | C | nonsynonymous | NM_005514 | c.A787G | p.R263G |
| 87 | LUNG | <i>PRRC2A</i> | 6 | 31605016 | 31605016 | T | C | nonsynonymous | NM_004638 | c.T6248C | p.F2083S |
| 87 | LUNG | <i>CFB</i> | 6 | 31918468 | 31918468 | A | C | nonsynonymous | NM_001710 | c.A1697C | p.E566A |
| 87 | LUNG | <i>GPSM3</i> | 6 | 32159931 | 32159931 | G | C | nonsynonymous | NM_001276501 | c.C139G | p.H47D |

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|----|------|--------------------------|----|-----------|-----------|---|---|---------------|--------------|----------|----------|
| 87 | LUNG | <i>HLA-DRB1</i> | 6 | 32549525 | 32549525 | C | G | nonsynonymous | NM_002124 | c.G461C | p.G154A |
| 87 | LUNG | <i>UNC5CL</i> | 6 | 41000638 | 41000638 | T | C | nonsynonymous | NM_173561 | c.A934G | p.T312A |
| 87 | LUNG | <i>CUL7</i> | 6 | 43006408 | 43006408 | A | G | nonsynonymous | NM_014780 | c.T4463C | p.L1488P |
| 87 | LUNG | <i>TINAG</i> | 6 | 54214623 | 54214623 | C | G | nonsynonymous | NM_014464 | c.C1009G | p.P337A |
| 87 | LUNG | <i>PRDM1</i> | 6 | 106547328 | 106547328 | C | T | nonsynonymous | NM_001198 | c.C565T | p.P189S |
| 87 | LUNG | <i>SDK1</i> | 7 | 4259846 | 4259846 | G | A | nonsynonymous | NM_152744 | c.G5645A | p.R1882Q |
| 87 | LUNG | <i>AQP1</i> | 7 | 30951844 | 30951844 | T | G | nonsynonymous | NM_198098 | c.T320G | p.V107G |
| 87 | LUNG | <i>DPY19L1</i> | 7 | 34989434 | 34989434 | G | A | nonsynonymous | NM_015283 | c.C1178T | p.A393V |
| 87 | LUNG | <i>RIC1</i> | 9 | 5747418 | 5747418 | T | G | nonsynonymous | NM_020829 | c.T1365G | p.S455R |
| 87 | LUNG | <i>CCDC171</i> | 9 | 15874622 | 15874622 | G | T | nonsynonymous | NM_173550 | c.G3561T | p.M1187I |
| 87 | LUNG | <i>SH3GL2</i> | 9 | 17793463 | 17793463 | G | T | nonsynonymous | NM_003026 | c.G827T | p.G276V |
| 87 | LUNG | <i>PGAP2</i> | 11 | 3832568 | 3832568 | G | A | nonsynonymous | NM_001256239 | c.G79A | p.V27I |
| 87 | LUNG | <i>IGSF22</i> | 11 | 18741414 | 18741414 | T | C | nonsynonymous | NM_173588 | c.A545G | p.Q182R |
| 87 | LUNG | <i>DAK</i> | 11 | 61105524 | 61105524 | C | T | nonsynonymous | NM_015533 | c.C115T | p.R39C |
| 87 | LUNG | <i>HYOU1</i> | 11 | 118919271 | 118919271 | G | T | nonsynonymous | NM_001130991 | c.C2170A | p.Q724K |
| 87 | LUNG | <i>TOX4</i> | 14 | 21961285 | 21961285 | C | A | nonsynonymous | NM_014828 | c.C1510A | p.Q504K |
| 87 | LUNG | <i>PTGDR</i> | 14 | 52735290 | 52735290 | C | G | nonsynonymous | NM_000953 | c.C758G | p.A253G |
| 87 | LUNG | <i>OR1D5</i> | 17 | 2966273 | 2966273 | G | A | nonsynonymous | NM_014566 | c.C629T | p.P210L |
| 87 | LUNG | <i>ALOX15</i> | 17 | 4542794 | 4542794 | C | G | nonsynonymous | NM_001140 | c.G268C | p.D90H |
| 87 | LUNG | <i>SYNRG</i> | 17 | 35944801 | 35944801 | C | T | nonsynonymous | NM_007247 | c.G544A | p.D182N |
| 87 | LUNG | <i>LOC1010603 21</i> | 17 | 36288278 | 36288278 | T | A | nonsynonymous | NM_032258 | c.T364A | p.L122M |
| 87 | LUNG | <i>KANSL1</i> | 17 | 44248837 | 44248837 | T | C | nonsynonymous | NM_001193466 | c.A673G | p.N225D |
| 87 | LUNG | <i>KANSL1</i> | 17 | 44249199 | 44249199 | T | G | nonsynonymous | NM_001193466 | c.A311C | p.K104T |
| 87 | LUNG | <i>HEXDC</i> | 17 | 80393680 | 80393680 | G | A | nonsynonymous | NM_173620 | c.G563A | p.R188Q |

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|----|------|-----------------|----|-----------|-----------|--|-----|---------------|--------------|-------------------|----------------|
| 87 | LUNG | <i>PHACTR3</i> | 20 | 58330353 | 58330353 | G | C | nonsynonymous | NM_080672 | c.G475C | p.A159P |
| 87 | LUNG | <i>CD24</i> | Y | 21154426 | 21154426 | G | A | nonsynonymous | NM_001291737 | c.C170T | p.A57V |
| 89 | LUNG | <i>MEGF8</i> | 19 | 42873856 | 42873856 | T | C | nonsynonymous | NM_001271938 | c.T6815C | p.L2272P |
| 8 | LUNG | <i>CCDC66</i> | 3 | 56650054 | 56650054 | - | CTC | nonframeshift | NM_001141947 | c.1816_1817insCTC | p.S606delinsSP |
| 8 | LUNG | <i>IRF5</i> | 7 | 128587352 | 128587381 | ACTCTGCA GCCGCCCA CTCTGCGG CCGCCT | - | nonframeshift | NM_001098630 | c.502_531del | p.168_177del |
| 8 | LUNG | <i>KRTAP5-1</i> | 11 | 1606121 | 1606150 | CCACAGCC ACCCTTGG ATCCCCCA CAAGAG | - | nonframeshift | NM_001005922 | c.330_359del | p.110_120del |
| 8 | LUNG | <i>FAM205A</i> | 9 | 34725069 | 34725069 | T | A | nonsynonymous | NM_001141917 | c.A2168T | p.E723V |
| 8 | LUNG | <i>C9orf84</i> | 9 | 114464401 | 114464401 | C | T | nonsynonymous | NM_173521 | c.G2881A | p.E961K |
| 8 | LUNG | <i>NCOR1</i> | 17 | 16097870 | 16097870 | C | A | nonsynonymous | NM_006311 | c.G14T | p.G5V |
| 8 | LUNG | <i>SREBF1</i> | 17 | 17720424 | 17720424 | G | C | nonsynonymous | NM_004176 | c.C1633G | p.L545V |
| 8 | LUNG | <i>UNC45B</i> | 17 | 33477096 | 33477096 | G | T | nonsynonymous | NM_173167 | c.G235T | p.A79S |
| 8 | LUNG | <i>DOT1L</i> | 19 | 2226686 | 2226686 | C | A | nonsynonymous | NM_032482 | c.C4166A | p.A1389E |
| 8 | LUNG | <i>ZNF805</i> | 19 | 57764540 | 57764540 | G | T | nonsynonymous | NM_001023563 | c.G353T | p.G118V |
| 90 | LUNG | <i>KRTAP5-1</i> | 11 | 1606121 | 1606150 | CCACAGCC ACCCTTGG ATCCCCCA CAAGAG | - | nonframeshift | NM_001005922 | c.330_359del | p.110_120del |
| 90 | LUNG | <i>KRTAP5-5</i> | 11 | 1651191 | 1651199 | GGCTGTGG A | - | nonframeshift | NM_001001480 | c.121_129del | p.41_43del |
| 90 | LUNG | <i>OTOP1</i> | 4 | 4228243 | 4228243 | G | T | nonsynonymous | NM_177998 | c.C349A | p.H117N |

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|----|------|------------------|----|-----------|-----------|-------------------------------|---|---------------|--------------|--------------|--------------|
| 91 | LUNG | <i>LOC554223</i> | 6 | 29760353 | 29760373 | GCGGGCGC CGTGGATG GAGCA | - | nonframeshift | NM_001207043 | c.438_458del | p.146_153del |
| 91 | LUNG | <i>PLEKHN1</i> | 1 | 908389 | 908389 | C | T | nonsynonymous | NM_032129 | c.C1151T | p.P384L |
| 91 | LUNG | <i>IRF6</i> | 1 | 209961970 | 209961970 | C | G | nonsynonymous | NM_006147 | c.G1199C | p.R400P |
| 91 | LUNG | <i>SNRK</i> | 3 | 43389767 | 43389767 | G | T | nonsynonymous | NM_017719 | c.G2016T | p.L672F |
| 91 | LUNG | <i>LPL</i> | 8 | 19797022 | 19797022 | G | C | nonsynonymous | NM_000237 | c.G71C | p.G24A |
| 91 | LUNG | <i>FAM21C</i> | 10 | 46254776 | 46254776 | A | C | nonsynonymous | NM_015262 | c.A1562C | p.Y521S |
| 91 | LUNG | <i>ATRNL1</i> | 10 | 117075090 | 117075090 | T | G | nonsynonymous | NM_207303 | c.T2881G | p.C961G |
| 91 | LUNG | <i>PHF21A</i> | 11 | 45986887 | 45986887 | G | T | nonsynonymous | NM_001101802 | c.C972A | p.S324R |
| 91 | LUNG | <i>KIAA1033</i> | 12 | 105521009 | 105521009 | C | A | nonsynonymous | NM_015275 | c.C1141A | p.Q381K |
| 91 | LUNG | <i>CLIP1</i> | 12 | 122812697 | 122812697 | C | T | nonsynonymous | NM_001247997 | c.G3046A | p.E1016K |
| 91 | LUNG | <i>ETFA</i> | 15 | 76578041 | 76578041 | C | A | nonsynonymous | NM_000126 | c.G601T | p.D201Y |
| 91 | LUNG | <i>AKAP13</i> | 15 | 86287035 | 86287035 | A | C | nonsynonymous | NM_007200 | c.A8371C | p.T2791P |
| 91 | LUNG | <i>MYLK3</i> | 16 | 46744689 | 46744689 | C | A | nonsynonymous | NM_182493 | c.G2127T | p.L709F |
| 91 | LUNG | <i>UTS2R</i> | 17 | 80332848 | 80332848 | C | G | nonsynonymous | NM_018949 | c.C648G | p.F216L |
| 91 | LUNG | <i>NPHS1</i> | 19 | 36336437 | 36336437 | T | C | nonsynonymous | NM_004646 | c.A1763G | p.E588G |
| 91 | LUNG | <i>PNKP</i> | 19 | 50370425 | 50370425 | C | G | nonsynonymous | NM_007254 | c.G37C | p.E13Q |
| 91 | LUNG | <i>CNKSR2</i> | X | 21450741 | 21450741 | G | T | nonsynonymous | NM_014927 | c.G240T | p.L80F |
| 9 | LUNG | <i>FGFR1</i> | 8 | 38273533 | 38273533 | C | A | nonsynonymous | NM_023105 | c.G1442T | p.R481L |
| 9 | LUNG | <i>C9orf85</i> | 9 | 74561983 | 74561983 | G | A | nonsynonymous | NM_182505 | c.G164A | p.R55H |
| 9 | LUNG | <i>OR13A1</i> | 10 | 45799452 | 45799452 | C | A | nonsynonymous | NM_001004297 | c.G419T | p.R140L |
| 9 | LUNG | <i>CLCN7</i> | 16 | 1506156 | 1506156 | C | A | nonsynonymous | NM_001287 | c.G874T | p.G292W |
| 9 | LUNG | <i>KSRI</i> | 17 | 25915518 | 25915518 | C | A | nonsynonymous | NM_014238 | c.C592A | p.P198T |
| 9 | LUNG | <i>RRP1B</i> | 21 | 45107931 | 45107931 | A | C | nonsynonymous | NM_015056 | c.A1676C | p.N559T |

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|-----|-------|-----------------|----|-----------|-----------|----------------------------|-------------------------|---------------|--------------|---------------------------------|-----------------------|
| 9 | LUNG | <i>PLA2G6</i> | 22 | 38565245 | 38565245 | C | A | nonsynonymous | NM_003560 | c.G189T | p.R63S |
| 9 | LUNG | <i>ARSD</i> | X | 2836041 | 2836041 | A | T | nonsynonymous | NM_001669 | c.T667A | p.F223I |
| 9 | LUNG | <i>ARSD</i> | X | 2836047 | 2836047 | C | T | nonsynonymous | NM_001669 | c.G661A | p.G221S |
| 100 | BLOOD | <i>LRBA</i> | 4 | 151727540 | 151727540 | C | A | stopgain | NM_006726 | c.G5401T | p.E1801X |
| 100 | BLOOD | <i>HERC2</i> | 15 | 28483903 | 28483903 | C | A | nonsynonymous | NM_004667 | c.G3593T | p.G1198V |
| 104 | BLOOD | <i>RPL14</i> | 3 | 40503521 | 40503538 | CTGCTGCT GCTGCTGC TG | - | nonframeshift | NM_001034996 | c.446_463del | p.149_155del |
| 104 | BLOOD | <i>KRTAP4-5</i> | 17 | 39305775 | 39305775 | - | GGCAGCA GCTGGGG C | nonframeshift | NM_033188 | c.244_245insGCCCC AGCTGCTGCC | p.Q82delinsRPSC CQ |
| 104 | BLOOD | <i>SRSF2</i> | 17 | 74732959 | 74732959 | G | C | nonsynonymous | NM_003016 | c.C284G | p.P95R |
| 105 | BLOOD | <i>HLA-A</i> | 6 | 29912108 | 29912108 | G | C | nonsynonymous | NM_002116 | c.G829C | p.E277Q |
| 106 | BLOOD | <i>PCDH12</i> | 5 | 141324955 | 141324955 | - | CTGCTGC TG | nonframeshift | NM_016580 | c.3545_3546insCAG CAGCAG | p.R1182delinsSS SR |
| 106 | BLOOD | <i>GSE1</i> | 16 | 85689983 | 85689988 | GAGCGC | - | nonframeshift | NM_014615 | c.1024_1029del | p.342_343del |
| 106 | BLOOD | <i>HDGFRP2</i> | 19 | 4499633 | 4499647 | AGCTGGCC GGGGAGG | - | frameshift | NM_001001520 | c.1721_1722del | p.K574fs |
| 106 | BLOOD | <i>KRTAP4-9</i> | 17 | 39261759 | 39261759 | G | A | nonsynonymous | NM_001146041 | c.G119A | p.C40Y |
| 106 | BLOOD | <i>RBMX</i> | X | 135957672 | 135957672 | A | T | nonsynonymous | NM_002139 | c.T614A | p.V205D |
| 106 | BLOOD | <i>RBMX</i> | X | 135957690 | 135957690 | A | G | nonsynonymous | NM_002139 | c.T596C | p.L199P |
| 106 | BLOOD | <i>RBMX</i> | X | 135957700 | 135957700 | T | C | nonsynonymous | NM_002139 | c.A586G | p.R196G |
| 108 | BLOOD | <i>FERD3L</i> | 7 | 19184746 | 19184746 | - | TCT | nonframeshift | NM_152898 | c.239_240insAGA | p.E80delinsEE |
| 108 | BLOOD | <i>ZYG11A</i> | 1 | 53343641 | 53343641 | G | T | nonsynonymous | NM_001004339 | c.G1749T | p.L583F |
| 108 | BLOOD | <i>UBQLN4</i> | 1 | 156013926 | 156013926 | G | T | nonsynonymous | NM_020131 | c.C989A | p.P330H |

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|-----|-------|----------------|----|-----------|-----------|-----|-----|---------------|--------------|-----------------|----------------|
| 108 | BLOOD | <i>PLEKHA6</i> | 1 | 204226719 | 204226719 | C | A | nonsynonymous | NM_014935 | c.G1286T | p.R429L |
| 108 | BLOOD | <i>HLA-A</i> | 6 | 29910716 | 29910716 | C | G | nonsynonymous | NM_002116 | c.C256G | p.Q86E |
| 108 | BLOOD | <i>SVIL</i> | 10 | 29843718 | 29843718 | G | T | nonsynonymous | NM_021738 | c.C154A | p.H52N |
| 108 | BLOOD | <i>MUC5B</i> | 11 | 1272583 | 1272583 | A | G | nonsynonymous | NM_002458 | c.A14473G | p.T4825A |
| 108 | BLOOD | <i>IFT140</i> | 16 | 1576706 | 1576706 | G | T | nonsynonymous | NM_014714 | c.C2491A | p.R831S |
| 108 | BLOOD | <i>TRPV1</i> | 17 | 3474845 | 3474845 | G | T | nonsynonymous | NM_018727 | c.C2320A | p.L774M |
| 108 | BLOOD | <i>CARD14</i> | 17 | 78157961 | 78157961 | G | A | nonsynonymous | NM_024110 | c.G599A | p.S200N |
| 108 | BLOOD | <i>FGF21</i> | 19 | 49261446 | 49261446 | C | A | nonsynonymous | NM_019113 | c.C599A | p.S200Y |
| 108 | BLOOD | <i>SSC5D</i> | 19 | 56012443 | 56012443 | C | A | nonsynonymous | NM_001144950 | c.C2660A | p.P887H |
| 108 | BLOOD | <i>RBPJL</i> | 20 | 43940243 | 43940243 | C | A | nonsynonymous | NM_014276 | c.C272A | p.P91Q |
| 109 | BLOOD | <i>SYNGR1</i> | 22 | 39777822 | 39777822 | - | CAA | nonframeshift | NM_004711 | c.605_606insCAA | p.P202delinsPN |
| 109 | BLOOD | <i>UBR4</i> | 1 | 19536594 | 19536594 | G | T | nonsynonymous | NM_020765 | c.C149A | p.P50Q |
| 109 | BLOOD | <i>SRRM1</i> | 1 | 24993373 | 24993373 | C | A | nonsynonymous | NM_005839 | c.C1696A | p.P566T |
| 109 | BLOOD | <i>LRP11</i> | 6 | 150164259 | 150164259 | A | C | nonsynonymous | NM_032832 | c.T773G | p.V258G |
| 109 | BLOOD | <i>ERCC2</i> | 19 | 45867348 | 45867348 | C | A | nonsynonymous | NM_000400 | c.G845T | p.R282L |
| 109 | BLOOD | <i>LIG1</i> | 19 | 48620902 | 48620902 | C | A | nonsynonymous | NM_000234 | c.G2576T | p.R859L |
| 110 | BLOOD | <i>SLC4A3</i> | 2 | 220500596 | 220500596 | C | T | nonsynonymous | NM_005070 | c.C2174T | p.T725I |
| 110 | BLOOD | <i>MYO6</i> | 6 | 76624700 | 76624700 | A | C | nonsynonymous | NM_004999 | c.A3829C | p.T1277P |
| 110 | BLOOD | <i>BAZ2A</i> | 12 | 56999708 | 56999708 | G | T | nonsynonymous | NM_013449 | c.C2405A | p.A802D |
| 110 | BLOOD | <i>MYH4</i> | 17 | 10367810 | 10367810 | T | G | nonsynonymous | NM_017533 | c.A627C | p.E209D |
| 111 | BLOOD | <i>MOG</i> | 6 | 29625033 | 29625035 | TCC | - | nonframeshift | NM_206809 | c.47_49del | p.16_17del |
| 111 | BLOOD | <i>RBBP4</i> | 1 | 33138072 | 33138072 | G | A | nonsynonymous | NM_005610 | c.G988A | p.E330K |
| 111 | BLOOD | <i>AGBL5</i> | 2 | 27279584 | 27279584 | C | T | stopgain | NM_021831 | c.C1459T | p.R487X |
| 111 | BLOOD | <i>MUC20</i> | 3 | 195447886 | 195447886 | G | C | nonsynonymous | NM_001282506 | c.G8C | p.C3S |
| 111 | BLOOD | <i>MUC4</i> | 3 | 195507925 | 195507925 | C | T | nonsynonymous | NM_018406 | c.G10526A | p.G3509D |

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|-----|-------|-----------------|----|-----------|-----------|--|-----|---------------|--------------|-----------------|----------------|
| 111 | BLOOD | <i>YTHDC2</i> | 5 | 112849608 | 112849608 | A | T | nonsynonymous | NM_022828 | c.A16T | p.S6C |
| 111 | BLOOD | <i>KIF4B</i> | 5 | 154397114 | 154397114 | A | G | nonsynonymous | NM_001099293 | c.A3695G | p.E1232G |
| 111 | BLOOD | <i>UTRN</i> | 6 | 144747433 | 144747433 | T | C | nonsynonymous | NM_007124 | c.T416C | p.V139A |
| 111 | BLOOD | <i>CUX1</i> | 7 | 101916681 | 101916681 | A | C | nonsynonymous | NM_181500 | c.A1294C | p.T432P |
| 111 | BLOOD | <i>FANK1</i> | 10 | 127697075 | 127697075 | G | A | nonsynonymous | NM_145235 | c.G805A | p.A269T |
| 111 | BLOOD | <i>MUC5B</i> | 11 | 1268932 | 1268932 | G | A | nonsynonymous | NM_002458 | c.G10822A | p.V3608I |
| 111 | BLOOD | <i>TEAD1</i> | 11 | 12904599 | 12904599 | G | A | nonsynonymous | NM_021961 | c.G626A | p.R209H |
| 112 | BLOOD | <i>KRTAP5-1</i> | 11 | 1606121 | 1606150 | CCACAGCC ACCCTTGG ATCCCCCA CAAGAG | - | nonframeshift | NM_001005922 | c.330_359del | p.110_120del |
| 112 | BLOOD | <i>MICALCL</i> | 11 | 12316387 | 12316389 | CTA | - | nonframeshift | NM_032867 | c.1409_1411del | p.470_471del |
| 112 | BLOOD | <i>CROCC</i> | 1 | 17270696 | 17270696 | G | A | nonsynonymous | NM_014675 | c.G1910A | p.R637Q |
| 112 | BLOOD | <i>ZNF717</i> | 3 | 75790880 | 75790880 | A | G | nonsynonymous | NM_001128223 | c.T65C | p.V22A |
| 112 | BLOOD | <i>MUC4</i> | 3 | 195508163 | 195508163 | T | G | nonsynonymous | NM_018406 | c.A10288C | p.T3430P |
| 112 | BLOOD | <i>FAM13A</i> | 4 | 89660254 | 89660254 | A | C | nonsynonymous | NM_014883 | c.T2489G | p.V830G |
| 112 | BLOOD | <i>SUSD3</i> | 9 | 95838089 | 95838089 | C | A | nonsynonymous | NM_145006 | c.C112A | p.P38T |
| 113 | BLOOD | <i>RTL1</i> | 14 | 101350670 | 101350670 | - | TCT | nonframeshift | NM_001134888 | c.455_456insAGA | p.E152delinsEE |
| 113 | BLOOD | <i>HDGFRP2</i> | 19 | 4499633 | 4499647 | AGCTGGCC GGGGAGG | - | frameshift | NM_001001520 | c.1721_1722del | p.K574fs |
| 113 | BLOOD | <i>HLA-A</i> | 6 | 29910716 | 29910716 | C | G | nonsynonymous | NM_002116 | c.C256G | p.Q86E |
| 113 | BLOOD | <i>C7orf50</i> | 7 | 1049637 | 1049637 | T | G | nonsynonymous | NM_001134395 | c.A272C | p.H91P |
| 113 | BLOOD | <i>RBMX</i> | X | 135961560 | 135961560 | C | G | nonsynonymous | NM_002139 | c.G27C | p.K9N |
| 114 | BLOOD | <i>RP1L1</i> | 8 | 10466004 | 10466024 | CTGGGCCT CCCCTTCA | - | nonframeshift | NM_178857 | c.5584_5604del | p.1862_1868del |

| | | | | | | GCCTC | | | | | |
|-----|-------|-----------------|----|-----------|-----------|----------------------------|-----|---------------|--------------|-----------------|----------------|
| 114 | BLOOD | <i>ATAD2</i> | 8 | 124382158 | 124382158 | - | TCA | nonframeshift | NM_014109 | c.833_834insTGA | p.E278delinsDE |
| 114 | BLOOD | <i>TRPM3</i> | 9 | 73458045 | 73458045 | - | A | splicing | NM_206947 | c.218-2->T | |
| 114 | BLOOD | <i>MICALCL</i> | 11 | 12316387 | 12316389 | CTA | - | nonframeshift | NM_032867 | c.1409_1411del | p.470_471del |
| 114 | BLOOD | <i>TAS2R43</i> | 12 | 11244679 | 11244696 | AGCAGTGA GAATTTGG TC | - | nonframeshift | NM_176884 | c.133_150del | p.45_50del |
| 114 | BLOOD | <i>REC8</i> | 14 | 24646406 | 24646406 | - | GAA | nonframeshift | NM_001048205 | c.681_682insGAA | p.E227delinsEE |
| 114 | BLOOD | <i>RFPL1</i> | 22 | 29837567 | 29837569 | TCC | - | nonframeshift | NM_021026 | c.410_412del | p.137_138del |
| 114 | BLOOD | <i>RBMX</i> | X | 135960146 | 135960146 | - | AA | frameshift | NM_002139 | c.315_316insTT | p.P106fs |
| 114 | BLOOD | <i>DLGAP3</i> | 1 | 35351706 | 35351706 | T | G | nonsynonymous | NM_001080418 | c.A1567C | p.T523P |
| 114 | BLOOD | <i>RBMXL1</i> | 1 | 89449298 | 89449298 | C | G | nonsynonymous | NM_019610 | c.G212C | p.G71A |
| 114 | BLOOD | <i>RBMXL1</i> | 1 | 89449390 | 89449390 | T | C | nonsynonymous | NM_019610 | c.A120G | p.I40M |
| 114 | BLOOD | <i>RBMXL1</i> | 1 | 89449434 | 89449434 | T | C | nonsynonymous | NM_019610 | c.A76G | p.T26A |
| 114 | BLOOD | <i>CAND2</i> | 3 | 12857896 | 12857896 | C | T | nonsynonymous | NM_001162499 | c.C1465T | p.R489C |
| 114 | BLOOD | <i>POLN</i> | 4 | 2178018 | 2178018 | G | T | nonsynonymous | NM_181808 | c.C1223A | p.T408K |
| 114 | BLOOD | <i>USP17L25</i> | 4 | 9336450 | 9336450 | T | C | nonsynonymous | NM_001242328 | c.T67C | p.S23P |
| 114 | BLOOD | <i>HPSE</i> | 4 | 84232010 | 84232010 | A | C | nonsynonymous | NM_006665 | c.T707G | p.F236C |
| 114 | BLOOD | <i>UBE2D3</i> | 4 | 103730849 | 103730849 | G | T | nonsynonymous | NM_181891 | c.C100A | p.Q34K |
| 114 | BLOOD | <i>ANK2</i> | 4 | 114276002 | 114276002 | G | T | nonsynonymous | NM_001148 | c.G6228T | p.K2076N |
| 114 | BLOOD | <i>FAM198B</i> | 4 | 159092106 | 159092106 | C | T | nonsynonymous | NM_016613 | c.G422A | p.G141E |
| 114 | BLOOD | <i>KLKB1</i> | 4 | 187171427 | 187171427 | C | A | nonsynonymous | NM_000892 | c.C629A | p.A210E |
| 114 | BLOOD | <i>PCDHA9</i> | 5 | 140229215 | 140229215 | G | T | nonsynonymous | NM_031857 | c.G1135T | p.A379S |
| 114 | BLOOD | <i>PCDHA9</i> | 5 | 140229219 | 140229219 | A | G | nonsynonymous | NM_031857 | c.A1139G | p.D380G |

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|-----|-------|-----------------|----|-----------|-----------|---|---|---------------|--------------|----------|----------|
| 114 | BLOOD | <i>SPDL1</i> | 5 | 169025499 | 169025499 | A | T | nonsynonymous | NM_017785 | c.A1052T | p.E351V |
| 114 | BLOOD | <i>TARP</i> | 7 | 38299727 | 38299727 | T | C | nonsynonymous | NM_001003806 | c.A298G | p.R100G |
| 114 | BLOOD | <i>SLC35G5</i> | 8 | 11189591 | 11189591 | C | T | nonsynonymous | NM_054028 | c.C976T | p.R326W |
| 114 | BLOOD | <i>LETM2</i> | 8 | 38261987 | 38261987 | T | G | nonsynonymous | NM_001286819 | c.T1181G | p.V394G |
| 114 | BLOOD | <i>IMPAD1</i> | 8 | 57876576 | 57876576 | T | C | nonsynonymous | NM_017813 | c.A856G | p.K286E |
| 114 | BLOOD | <i>HAUS6</i> | 9 | 19070278 | 19070278 | G | C | nonsynonymous | NM_017645 | c.C1315G | p.Q439E |
| 114 | BLOOD | <i>AQP7</i> | 9 | 33385248 | 33385248 | G | T | nonsynonymous | NM_001170 | c.C784A | p.L262I |
| 114 | BLOOD | <i>CBWD6</i> | 9 | 69238234 | 69238234 | G | T | nonsynonymous | NM_001085457 | c.C658A | p.L220I |
| 114 | BLOOD | <i>BRINP1</i> | 9 | 121929828 | 121929828 | C | T | nonsynonymous | NM_014618 | c.G1820A | p.R607Q |
| 114 | BLOOD | <i>CNTRL</i> | 9 | 123907526 | 123907526 | G | T | nonsynonymous | NM_007018 | c.G3173T | p.R1058L |
| 114 | BLOOD | <i>USP20</i> | 9 | 132637027 | 132637027 | C | T | nonsynonymous | NM_001008563 | c.C1913T | p.T638M |
| 114 | BLOOD | <i>OGDHL</i> | 10 | 50960232 | 50960232 | T | A | nonsynonymous | NM_018245 | c.A541T | p.I181F |
| 114 | BLOOD | <i>MRPS16</i> | 10 | 75010635 | 75010635 | G | C | nonsynonymous | NM_016065 | c.C389G | p.T130R |
| 114 | BLOOD | <i>SYT7</i> | 11 | 61295435 | 61295435 | T | C | nonsynonymous | NM_004200 | c.A574G | p.K192E |
| 114 | BLOOD | <i>GJB6</i> | 13 | 20797025 | 20797025 | A | T | nonsynonymous | NM_001110219 | c.T595A | p.S199T |
| 114 | BLOOD | <i>OR4K13</i> | 14 | 20502506 | 20502506 | G | C | nonsynonymous | NM_001004714 | c.C412G | p.P138A |
| 114 | BLOOD | <i>TEP1</i> | 14 | 20854625 | 20854625 | C | T | nonsynonymous | NM_007110 | c.G2842A | p.E948K |
| 114 | BLOOD | <i>RTL1</i> | 14 | 101351011 | 101351011 | T | G | nonsynonymous | NM_001134888 | c.A115C | p.S39R |
| 114 | BLOOD | <i>KRTAP1-1</i> | 17 | 39197274 | 39197274 | C | T | nonsynonymous | NM_030967 | c.G376A | p.E126K |
| 114 | BLOOD | <i>KRTAP4-9</i> | 17 | 39261759 | 39261759 | G | A | nonsynonymous | NM_001146041 | c.G119A | p.C40Y |
| 114 | BLOOD | <i>KRT38</i> | 17 | 39594980 | 39594980 | C | T | nonsynonymous | NM_006771 | c.G863A | p.R288H |
| 114 | BLOOD | <i>SLC35G4</i> | 18 | 11609994 | 11609994 | C | T | nonsynonymous | NM_001282300 | c.C400T | p.R134C |
| 114 | BLOOD | <i>SLC35G4</i> | 18 | 11610024 | 11610024 | A | G | nonsynonymous | NM_001282300 | c.A430G | p.I144V |
| 114 | BLOOD | <i>SLC35G4</i> | 18 | 11610349 | 11610349 | G | A | nonsynonymous | NM_001282300 | c.G755A | p.S252N |
| 114 | BLOOD | <i>SLC35G4</i> | 18 | 11610382 | 11610382 | C | A | nonsynonymous | NM_001282300 | c.C788A | p.T263N |

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|-----|-------|-----------------|----|-----------|-----------|---|---|---------------|--------------|----------|----------|
| 114 | BLOOD | <i>FBN3</i> | 19 | 8201323 | 8201323 | G | A | nonsynonymous | NM_032447 | c.C1294T | p.R432C |
| 114 | BLOOD | <i>SIPR5</i> | 19 | 10624838 | 10624838 | C | T | nonsynonymous | NM_001166215 | c.G850A | p.V284I |
| 114 | BLOOD | <i>ZNF429</i> | 19 | 21712573 | 21712573 | C | G | nonsynonymous | NM_001001415 | c.C117G | p.N39K |
| 114 | BLOOD | <i>FBL</i> | 19 | 40330874 | 40330874 | G | A | nonsynonymous | NM_001436 | c.C377T | p.S126L |
| 114 | BLOOD | <i>FCGBP</i> | 19 | 40392802 | 40392802 | C | T | nonsynonymous | NM_003890 | c.G7702A | p.A2568T |
| 114 | BLOOD | <i>CBLC</i> | 19 | 45281265 | 45281265 | A | G | nonsynonymous | NM_012116 | c.A77G | p.Q26R |
| 114 | BLOOD | <i>CPTIC</i> | 19 | 50216032 | 50216032 | C | G | nonsynonymous | NM_001199752 | c.C2059G | p.P687A |
| 114 | BLOOD | <i>KLK13</i> | 19 | 51563718 | 51563718 | C | G | nonsynonymous | NM_015596 | c.G211C | p.V71L |
| 114 | BLOOD | <i>SIGLEC10</i> | 19 | 51919594 | 51919594 | C | T | nonsynonymous | NM_033130 | c.G724A | p.V242I |
| 114 | BLOOD | <i>SIGLEC10</i> | 19 | 51919602 | 51919602 | C | T | nonsynonymous | NM_033130 | c.G716A | p.R239K |
| 114 | BLOOD | <i>NLRP2</i> | 19 | 55494283 | 55494283 | C | G | nonsynonymous | NM_001174081 | c.C1217G | p.T406R |
| 114 | BLOOD | <i>GP6</i> | 19 | 55525763 | 55525763 | A | C | nonsynonymous | NM_001083899 | c.T1550G | p.M517R |
| 114 | BLOOD | <i>DOPEY2</i> | 21 | 37618055 | 37618055 | C | G | nonsynonymous | NM_005128 | c.C3777G | p.I1259M |
| 114 | BLOOD | <i>TMPRSS2</i> | 21 | 42866297 | 42866297 | G | A | nonsynonymous | NM_005656 | c.C224T | p.T75I |
| 114 | BLOOD | <i>SLC25A18</i> | 22 | 18069962 | 18069962 | C | T | nonsynonymous | NM_031481 | c.C470T | p.S157L |
| 114 | BLOOD | <i>CRYBB3</i> | 22 | 25597401 | 25597401 | C | G | nonsynonymous | NM_004076 | c.C38G | p.A13G |
| 114 | BLOOD | <i>RFPL2</i> | 22 | 32590379 | 32590379 | C | T | nonsynonymous | NM_001098527 | c.G218A | p.S73N |
| 114 | BLOOD | <i>ELFN2</i> | 22 | 37770812 | 37770812 | C | A | nonsynonymous | NM_052906 | c.G763T | p.V255L |
| 114 | BLOOD | <i>NAGA</i> | 22 | 42457046 | 42457046 | A | G | nonsynonymous | NM_000262 | c.T983C | p.M328T |
| 114 | BLOOD | <i>TRMU</i> | 22 | 46751480 | 46751480 | C | T | nonsynonymous | NM_001282782 | c.C671T | p.A224V |
| 114 | BLOOD | <i>RBMX</i> | X | 135956342 | 135956342 | C | G | nonsynonymous | NM_002139 | c.G1135C | p.G379R |
| 114 | BLOOD | <i>RBMX</i> | X | 135956408 | 135956408 | A | G | nonsynonymous | NM_002139 | c.T1069C | p.Y357H |
| 114 | BLOOD | <i>RBMX</i> | X | 135956462 | 135956462 | G | C | nonsynonymous | NM_002139 | c.C1015G | p.R339G |
| 114 | BLOOD | <i>RBMX</i> | X | 135956467 | 135956467 | C | T | nonsynonymous | NM_002139 | c.G1010A | p.S337N |
| 114 | BLOOD | <i>RBMX</i> | X | 135956506 | 135956506 | C | G | nonsynonymous | NM_002139 | c.G971C | p.R324P |

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|-----|-------|-----------------|----|-----------|-----------|----------------------------------|--|---------------|--------------|---|-------------------------------|
| 114 | BLOOD | <i>RBMX</i> | X | 135958704 | 135958704 | G | C | nonsynonymous | NM_002139 | c.C499G | p.P167A |
| 114 | BLOOD | <i>RBMX</i> | X | 135958730 | 135958730 | C | A | nonsynonymous | NM_002139 | c.G473T | p.G158V |
| 114 | BLOOD | <i>RBMX</i> | X | 135960119 | 135960119 | C | T | nonsynonymous | NM_002139 | c.G343A | p.G115R |
| 115 | BLOOD | <i>UBE2D3</i> | 4 | 103730849 | 103730849 | G | T | nonsynonymous | NM_181891 | c.C100A | p.Q34K |
| 115 | BLOOD | <i>GOLGA8M</i> | 15 | 28948511 | 28948511 | T | C | nonsynonymous | NM_001282468 | c.A1322G | p.Q441R |
| 115 | BLOOD | <i>OR1D5</i> | 17 | 2966273 | 2966273 | G | A | nonsynonymous | NM_014566 | c.C629T | p.P210L |
| 115 | BLOOD | <i>ARSD</i> | X | 2836037 | 2836037 | G | C | nonsynonymous | NM_001669 | c.C671G | p.S224C |
| 116 | BLOOD | <i>CFAP74</i> | 1 | 1900106 | 1900106 | - | CTC | nonframeshift | NM_001080484 | c.1212_1213insGAG | p.K405delinsEK |
| 116 | BLOOD | <i>PRDM2</i> | 1 | 14105121 | 14105121 | - | GAA | nonframeshift | NM_012231 | c.831_832insGAA | p.D277delinsDE |
| 116 | BLOOD | <i>OVGP1</i> | 1 | 111957502 | 111957525 | TCACAGAC TGATGACT CACAGGGG | - | nonframeshift | NM_002557 | c.1598_1621del | p.533_541del |
| 116 | BLOOD | <i>FAM120B</i> | 6 | 170627589 | 170627589 | - | CTGAACC CAGGCAA GAAGTTC CCACGTG TTCAGAC C | nonframeshift | NM_032448 | c.1111_1112insCTG AACCCAGGCAAG AAGTTCCACGTG TTCAGACC | p.S371delinsSEP RQEVPTCSDP |
| 116 | BLOOD | <i>CREB3L2</i> | 7 | 137612914 | 137612916 | TGG | - | nonframeshift | NM_194071 | c.299_301del | p.100_101del |
| 116 | BLOOD | <i>APLP2</i> | 11 | 129991653 | 129991658 | GAAGAG | - | nonframeshift | NM_001642 | c.661_666del | p.221_222del |
| 116 | BLOOD | <i>C17orf97</i> | 17 | 263619 | 263624 | CCCAAG | - | nonframeshift | NM_001013672 | c.985_990del | p.329_330del |
| 116 | BLOOD | <i>SYNGR1</i> | 22 | 39777822 | 39777822 | - | CAA | nonframeshift | NM_004711 | c.605_606insCAA | p.P202delinsPN |
| 116 | BLOOD | <i>OR2T33</i> | 1 | 248436582 | 248436582 | T | C | nonsynonymous | NM_001004695 | c.A535G | p.T179A |
| 116 | BLOOD | <i>FAM53A</i> | 4 | 1657303 | 1657303 | G | C | nonsynonymous | NM_001174070 | c.C284G | p.A95G |
| 116 | BLOOD | <i>CDSN</i> | 6 | 31084964 | 31084964 | T | C | nonsynonymous | NM_001264 | c.A428G | p.N143S |

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|-----|-------|-----------------|----|-----------|-----------|---|-------|---------------|--------------|-------------------|--------------|
| 116 | BLOOD | <i>HLA-DRB1</i> | 6 | 32551948 | 32551948 | G | T | nonsynonymous | NM_002124 | c.C308A | p.A103E |
| 116 | BLOOD | <i>HBS1L</i> | 6 | 135363180 | 135363180 | G | A | nonsynonymous | NM_006620 | c.C194T | p.S65F |
| 116 | BLOOD | <i>MUC17</i> | 7 | 100680256 | 100680256 | A | C | nonsynonymous | NM_001040105 | c.A5559C | p.E1853D |
| 116 | BLOOD | <i>ANKS6</i> | 9 | 101498824 | 101498824 | G | A | nonsynonymous | NM_173551 | c.C2593T | p.P865S |
| 116 | BLOOD | <i>PKN3</i> | 9 | 131477654 | 131477654 | C | A | nonsynonymous | NM_013355 | c.C1723A | p.L575M |
| 116 | BLOOD | <i>KIAA1217</i> | 10 | 24762587 | 24762587 | G | A | nonsynonymous | NM_019590 | c.G1277A | p.R426H |
| 116 | BLOOD | <i>PIDD1</i> | 11 | 800630 | 800630 | G | A | nonsynonymous | NM_145886 | c.C1954T | p.R652W |
| 116 | BLOOD | <i>PHF21A</i> | 11 | 45986887 | 45986887 | G | T | nonsynonymous | NM_001101802 | c.C972A | p.S324R |
| 116 | BLOOD | <i>OR9G1</i> | 11 | 56468440 | 56468440 | G | T | nonsynonymous | NM_001005213 | c.G577T | p.G193C |
| 116 | BLOOD | <i>AHNAK</i> | 11 | 62285721 | 62285721 | G | T | nonsynonymous | NM_001620 | c.C16168A | p.P5390T |
| 116 | BLOOD | <i>CDC42BPG</i> | 11 | 64603647 | 64603647 | G | T | nonsynonymous | NM_017525 | c.C1610A | p.A537D |
| 116 | BLOOD | <i>WDR66</i> | 12 | 122359408 | 122359408 | G | A | nonsynonymous | NM_144668 | c.G197A | p.G66E |
| 116 | BLOOD | <i>IQGAP1</i> | 15 | 90984854 | 90984854 | T | G | nonsynonymous | NM_003870 | c.T766G | p.S256A |
| 116 | BLOOD | <i>IGFALS</i> | 16 | 1841013 | 1841013 | C | T | nonsynonymous | NM_004970 | c.G1406A | p.R469H |
| 116 | BLOOD | <i>ELP5</i> | 17 | 7160247 | 7160247 | G | A | nonsynonymous | NM_203414 | c.G529A | p.V177M |
| 116 | BLOOD | <i>PLIN4</i> | 19 | 4512890 | 4512890 | G | A | nonsynonymous | NM_001080400 | c.C1040T | p.T347I |
| 116 | BLOOD | <i>ARHGEF18</i> | 19 | 7527187 | 7527187 | G | T | nonsynonymous | NM_001130955 | c.G2038T | p.G680W |
| 116 | BLOOD | <i>MCOLN1</i> | 19 | 7589933 | 7589933 | G | C | nonsynonymous | NM_020533 | c.G118C | p.D40H |
| 116 | BLOOD | <i>BAGE</i> | 21 | 11097574 | 11097574 | T | A | nonsynonymous | NM_001187 | c.A88T | p.R30W |
| 117 | BLOOD | <i>KTI12</i> | 1 | 52499071 | 52499097 | GCCCGCCA CCTGAGGT CCCGCGAT CGG | - | nonframeshift | NM_138417 | c.337_363del | p.113_121del |
| 117 | BLOOD | <i>CDCP2</i> | 1 | 54605318 | 54605318 | - | GG | frameshift | NM_201546 | c.1224_1225insCC | p.M409fs |
| 117 | BLOOD | <i>PRSS48</i> | 4 | 152201018 | 152201018 | - | CAGGT | frameshift | NM_183375 | c.123_124insCAGGT | p.W41fs |

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|-----|-------|-----------------|----|-----------|-----------|-----|--------|---------------|--------------|------------------------|----------------------|
| 117 | BLOOD | <i>KDM6B</i> | 17 | 7750177 | 7750177 | - | ACCACC | nonframeshift | NM_001080424 | c.752_753insACCAC C | p.L251delinsLPP C |
| 117 | BLOOD | <i>RFPL1</i> | 22 | 29837567 | 29837569 | TCC | - | nonframeshift | NM_021026 | c.410_412del | p.137_138del |
| 117 | BLOOD | <i>ARHGEF16</i> | 1 | 3389757 | 3389757 | A | G | nonsynonymous | NM_014448 | c.A1138G | p.N380D |
| 117 | BLOOD | <i>PALMD</i> | 1 | 100155386 | 100155386 | G | A | nonsynonymous | NM_017734 | c.G1570A | p.A524T |
| 117 | BLOOD | <i>AQP12A</i> | 2 | 241631798 | 241631798 | G | C | nonsynonymous | NM_198998 | c.G431C | p.R144P |
| 117 | BLOOD | <i>AQP12A</i> | 2 | 241631839 | 241631839 | G | A | nonsynonymous | NM_198998 | c.G472A | p.A158T |
| 117 | BLOOD | <i>IL17RC</i> | 3 | 9975054 | 9975054 | T | C | nonsynonymous | NM_153461 | c.T2153C | p.F718S |
| 117 | BLOOD | <i>MUC4</i> | 3 | 195505813 | 195505813 | T | C | nonsynonymous | NM_018406 | c.A12638G | p.D4213G |
| 117 | BLOOD | <i>ZNF732</i> | 4 | 265955 | 265955 | T | C | nonsynonymous | NM_001137608 | c.A688G | p.I230V |
| 117 | BLOOD | <i>MTHFD2L</i> | 4 | 75067064 | 75067064 | A | C | nonsynonymous | NM_001144978 | c.A689C | p.D230A |
| 117 | BLOOD | <i>PRR3</i> | 6 | 30529700 | 30529700 | C | T | nonsynonymous | NM_025263 | c.C259T | p.R87W |
| 117 | BLOOD | <i>CYP21A2</i> | 6 | 32006886 | 32006886 | G | A | nonsynonymous | NM_000500 | c.G308A | p.R103K |
| 117 | BLOOD | <i>HLA-DQB1</i> | 6 | 32629935 | 32629935 | C | G | nonsynonymous | NM_001243961 | c.G470C | p.G157A |
| 117 | BLOOD | <i>LACE1</i> | 6 | 108843576 | 108843576 | C | T | nonsynonymous | NM_145315 | c.C1394T | p.T465M |
| 117 | BLOOD | <i>SYNE1</i> | 6 | 152711428 | 152711428 | C | T | nonsynonymous | NM_182961 | c.G8164A | p.V2722I |
| 117 | BLOOD | <i>C9orf129</i> | 9 | 96081433 | 96081433 | C | T | nonsynonymous | NM_001098808 | c.G389A | p.R130H |
| 117 | BLOOD | <i>GSN</i> | 9 | 124083579 | 124083579 | G | A | nonsynonymous | NM_000177 | c.G1378A | p.V460M |
| 117 | BLOOD | <i>UPF3A</i> | 13 | 115047496 | 115047496 | G | C | nonsynonymous | NM_023011 | c.G208C | p.V70L |
| 117 | BLOOD | <i>TGM1</i> | 14 | 24724663 | 24724663 | C | T | nonsynonymous | NM_000359 | c.G1552A | p.V518M |
| 117 | BLOOD | <i>PSTPIP1</i> | 15 | 77328211 | 77328211 | G | A | nonsynonymous | NM_003978 | c.G1054A | p.E352K |
| 117 | BLOOD | <i>TPSB2</i> | 16 | 1279438 | 1279438 | C | T | nonsynonymous | NM_024164 | c.G253A | p.A85T |
| 117 | BLOOD | <i>PKD1L2</i> | 16 | 81204576 | 81204576 | C | T | nonsynonymous | NM_001278423 | c.G827A | p.R276Q |
| 117 | BLOOD | <i>XAF1</i> | 17 | 6663899 | 6663899 | G | T | stopgain | NM_017523 | c.G400T | p.E134X |
| 117 | BLOOD | <i>CFAP52</i> | 17 | 9497560 | 9497560 | C | T | nonsynonymous | NM_145054 | c.C458T | p.A153V |

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|-----|-------|------------------|----|-----------|-----------|-----|-------|---------------|--------------|-------------------|----------------|
| 117 | BLOOD | <i>SEZ6</i> | 17 | 27283247 | 27283247 | C | G | nonsynonymous | NM_178860 | c.G2882C | p.R961P |
| 117 | BLOOD | <i>CDC27</i> | 17 | 45249335 | 45249335 | T | G | nonsynonymous | NM_001256 | c.A199C | p.T67P |
| 117 | BLOOD | <i>ONECUT2</i> | 18 | 55143711 | 55143711 | A | G | nonsynonymous | NM_004852 | c.A1271G | p.N424S |
| 117 | BLOOD | <i>FCGBP</i> | 19 | 40370296 | 40370296 | G | C | nonsynonymous | NM_003890 | c.C12370G | p.Q4124E |
| 117 | BLOOD | <i>FCGBP</i> | 19 | 40392802 | 40392802 | C | T | nonsynonymous | NM_003890 | c.G7702A | p.A2568T |
| 117 | BLOOD | <i>CGB7</i> | 19 | 49558216 | 49558216 | C | T | nonsynonymous | NM_033142 | c.G65A | p.R22K |
| 117 | BLOOD | <i>ZNF814</i> | 19 | 58385748 | 58385748 | G | A | nonsynonymous | NM_001144989 | c.C1010T | p.A337V |
| 117 | BLOOD | <i>LCA5L</i> | 21 | 40794945 | 40794945 | G | C | nonsynonymous | NM_152505 | c.C794G | p.S265C |
| 117 | BLOOD | <i>KRTAP10-7</i> | 21 | 46020721 | 46020721 | G | A | nonsynonymous | NM_198689 | c.G185A | p.R62H |
| 117 | BLOOD | <i>BPIFC</i> | 22 | 32811904 | 32811904 | C | T | nonsynonymous | NM_174932 | c.G1399A | p.E467K |
| 117 | BLOOD | <i>IL3RA</i> | X | 1499944 | 1499944 | C | G | nonsynonymous | NM_002183 | c.C1009G | p.R337G |
| 117 | BLOOD | <i>ASMTL</i> | X | 1531648 | 1531648 | C | T | nonsynonymous | NM_004192 | c.G1622A | p.R541K |
| 117 | BLOOD | <i>AKAP17A</i> | X | 1719897 | 1719897 | C | G | nonsynonymous | NM_005088 | c.C1498G | p.P500A |
| 117 | BLOOD | <i>ARSD</i> | X | 2833638 | 2833638 | C | T | nonsynonymous | NM_001669 | c.G959A | p.G320D |
| 117 | BLOOD | <i>ARSD</i> | X | 2836181 | 2836181 | A | T | nonsynonymous | NM_001669 | c.T527A | p.M176K |
| 117 | BLOOD | <i>ARSD</i> | X | 2836184 | 2836184 | C | T | nonsynonymous | NM_001669 | c.G524A | p.G175D |
| 118 | BLOOD | <i>FAM90A1</i> | 12 | 8374781 | 8374781 | - | ACG | nonframeshift | NM_018088 | c.1031_1032insCGT | p.T344delinsTV |
| 118 | BLOOD | <i>DND1</i> | 5 | 140052407 | 140052407 | G | A | nonsynonymous | NM_194249 | c.C227T | p.P76L |
| 118 | BLOOD | <i>CNTNAP3</i> | 9 | 39287976 | 39287976 | C | T | splicing | NM_033655 | c.85+1G>A | |
| 118 | BLOOD | <i>CLTCL1</i> | 22 | 19263266 | 19263266 | C | A | nonsynonymous | NM_007098 | c.G130T | p.V44F |
| 119 | BLOOD | <i>OR7G3</i> | 19 | 9236698 | 9236698 | - | ATGGT | frameshift | NM_001001958 | c.928_929insACCAT | p.S310fs |
| 119 | BLOOD | <i>MUC20</i> | 3 | 195447886 | 195447886 | G | C | nonsynonymous | NM_001282506 | c.G8C | p.C3S |
| 119 | BLOOD | <i>UNC13C</i> | 15 | 54614160 | 54614160 | A | T | nonsynonymous | NM_001080534 | c.A4292T | p.K1431I |
| 119 | BLOOD | <i>CCDC94</i> | 19 | 4254465 | 4254465 | G | C | nonsynonymous | NM_018074 | c.G384C | p.E128D |
| 140 | BLOOD | <i>HOMEZ</i> | 14 | 23744827 | 23744829 | TCC | - | nonframeshift | NM_020834 | c.1608_1610del | p.536_537del |

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|-----|-------|---------------|----|-----------|-----------|--|----|---------------|--------------|------------------|--------------|
| 140 | BLOOD | <i>GPR135</i> | 14 | 59930916 | 59930916 | - | CA | frameshift | NM_022571 | c.1028_1029insTG | p.C343fs |
| 140 | BLOOD | <i>CTSA</i> | 20 | 44520238 | 44520240 | CTG | - | nonframeshift | NM_001127695 | c.31_33del | p.11_11del |
| 140 | BLOOD | <i>COL8A2</i> | 1 | 36564201 | 36564201 | C | A | stopgain | NM_005202 | c.G1081T | p.G361X |
| 140 | BLOOD | <i>DMAPI</i> | 1 | 44685725 | 44685725 | T | C | nonsynonymous | NM_019100 | c.T1088C | p.M363T |
| 140 | BLOOD | <i>APH1A</i> | 1 | 150238593 | 150238593 | G | C | nonsynonymous | NM_001243772 | c.C525G | p.C175W |
| 140 | BLOOD | <i>FCRL1</i> | 1 | 157768014 | 157768014 | G | T | nonsynonymous | NM_052938 | c.C1051A | p.P351T |
| 140 | BLOOD | <i>HTR3D</i> | 3 | 183754300 | 183754300 | G | A | nonsynonymous | NM_001145143 | c.G335A | p.R112H |
| 140 | BLOOD | <i>MUC4</i> | 3 | 195505788 | 195505788 | G | C | nonsynonymous | NM_018406 | c.C12663G | p.H4221Q |
| 140 | BLOOD | <i>MUC4</i> | 3 | 195506051 | 195506051 | G | A | nonsynonymous | NM_018406 | c.C12400T | p.L4134F |
| 140 | BLOOD | <i>MUC4</i> | 3 | 195507166 | 195507166 | A | G | nonsynonymous | NM_018406 | c.T11285C | p.L3762P |
| 140 | BLOOD | <i>MUC4</i> | 3 | 195507242 | 195507242 | C | A | nonsynonymous | NM_018406 | c.G11209T | p.A3737S |
| 140 | BLOOD | <i>MUC4</i> | 3 | 195508115 | 195508115 | T | G | nonsynonymous | NM_018406 | c.A10336C | p.T3446P |
| 140 | BLOOD | <i>MUC4</i> | 3 | 195508538 | 195508538 | C | A | nonsynonymous | NM_018406 | c.G9913T | p.V3305L |
| 140 | BLOOD | <i>MUC4</i> | 3 | 195509476 | 195509476 | A | G | nonsynonymous | NM_018406 | c.T8975C | p.L2992P |
| 140 | BLOOD | <i>MUC4</i> | 3 | 195512219 | 195512219 | C | T | nonsynonymous | NM_018406 | c.G6232A | p.A2078T |
| 140 | BLOOD | <i>ZNF732</i> | 4 | 265807 | 265807 | C | A | nonsynonymous | NM_001137608 | c.G836T | p.C279F |
| 140 | BLOOD | <i>SCRIB</i> | 8 | 144886763 | 144886763 | G | A | nonsynonymous | NM_015356 | c.C2984T | p.A995V |
| 140 | BLOOD | <i>MUC5B</i> | 11 | 1253976 | 1253976 | A | G | nonsynonymous | NM_002458 | c.A2041G | p.S681G |
| 140 | BLOOD | <i>NCOR1</i> | 17 | 16097870 | 16097870 | C | A | nonsynonymous | NM_006311 | c.G14T | p.G5V |
| 140 | BLOOD | <i>CDC27</i> | 17 | 45249335 | 45249335 | T | G | nonsynonymous | NM_001256 | c.A199C | p.T67P |
| 140 | BLOOD | <i>MYBPC2</i> | 19 | 50939077 | 50939077 | G | A | nonsynonymous | NM_004533 | c.G154A | p.G52S |
| 141 | BLOOD | <i>IRF5</i> | 7 | 128587352 | 128587381 | ACTCTGCA GCCGCCCA CTCTGCGG CCGCCT | - | nonframeshift | NM_001098630 | c.502_531del | p.168_177del |

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|-----|-------|-----------------|----|-----------|-----------|-----|--------|---------------|--------------|------------------------|-----------------|
| 141 | BLOOD | <i>SPTBN1</i> | 2 | 54876983 | 54876983 | C | T | nonsynonymous | NM_003128 | c.C5434T | p.H1812Y |
| 141 | BLOOD | <i>MUC4</i> | 3 | 195510361 | 195510361 | G | A | nonsynonymous | NM_018406 | c.C8090T | p.A2697V |
| 141 | BLOOD | <i>MUC4</i> | 3 | 195510622 | 195510622 | G | T | nonsynonymous | NM_018406 | c.C7829A | p.P2610H |
| 153 | BLOOD | <i>CCDC13</i> | 3 | 42775098 | 42775098 | G | A | nonsynonymous | NM_144719 | c.C1375T | p.L459F |
| 153 | BLOOD | <i>CMYA5</i> | 5 | 79028819 | 79028819 | T | G | nonsynonymous | NM_153610 | c.T4231G | p.S1411A |
| 153 | BLOOD | <i>CCDC62</i> | 12 | 123286003 | 123286003 | G | A | nonsynonymous | NM_201435 | c.G1310A | p.C437Y |
| 153 | BLOOD | <i>PIK3R5</i> | 17 | 8784957 | 8784957 | C | G | nonsynonymous | NM_001142633 | c.G2372C | p.G791A |
| 153 | BLOOD | <i>CLTCL1</i> | 22 | 19241688 | 19241688 | C | T | nonsynonymous | NM_007098 | c.G313A | p.A105T |
| 153 | BLOOD | <i>ARSD</i> | X | 2836181 | 2836181 | A | T | nonsynonymous | NM_001669 | c.T527A | p.M176K |
| 155 | BLOOD | <i>RBMX</i> | X | 135960146 | 135960146 | - | AA | frameshift | NM_002139 | c.315_316insTT | p.P106fs |
| 155 | BLOOD | <i>C1orf159</i> | 1 | 1022530 | 1022530 | C | G | nonsynonymous | NM_017891 | c.G299C | p.R100P |
| 155 | BLOOD | <i>MUC4</i> | 3 | 195515510 | 195515510 | A | C | nonsynonymous | NM_018406 | c.T2941G | p.Y981D |
| 155 | BLOOD | <i>KNDC1</i> | 10 | 134999607 | 134999607 | G | A | nonsynonymous | NM_152643 | c.G755A | p.R252Q |
| 155 | BLOOD | <i>AP4E1</i> | 15 | 51201042 | 51201042 | G | C | nonsynonymous | NM_007347 | c.G67C | p.G23R |
| 155 | BLOOD | <i>PDXK</i> | 21 | 45175924 | 45175924 | G | A | nonsynonymous | NM_003681 | c.G919A | p.V307I |
| 155 | BLOOD | <i>RBMX</i> | X | 135960119 | 135960119 | C | T | nonsynonymous | NM_002139 | c.G343A | p.G115R |
| 156 | BLOOD | <i>MUC5B</i> | 11 | 1253980 | 1253980 | A | G | nonsynonymous | NM_002458 | c.A2045G | p.D682G |
| 157 | BLOOD | <i>DDHD1</i> | 14 | 53619480 | 53619480 | - | GCCGCC | nonframeshift | NM_001160148 | c.336_337insGGCGG C | p.S113delinsGGS |
| 157 | BLOOD | <i>PRKCSH</i> | 19 | 11558341 | 11558343 | GAG | - | nonframeshift | NM_002743 | c.937_939del | p.313_313del |
| 158 | BLOOD | <i>MUC20</i> | 3 | 195447886 | 195447886 | G | C | nonsynonymous | NM_001282506 | c.G8C | p.C3S |
| 158 | BLOOD | <i>NRBP2</i> | 8 | 144921093 | 144921093 | C | T | nonsynonymous | NM_178564 | c.G706A | p.A236T |
| 159 | BLOOD | <i>OBSCN</i> | 1 | 228547680 | 228547680 | G | T | nonsynonymous | NM_052843 | c.G19087T | p.G6363C |
| 159 | BLOOD | <i>ALK</i> | 2 | 29474110 | 29474110 | C | A | nonsynonymous | NM_004304 | c.G2065T | p.G689W |
| 159 | BLOOD | <i>DNAH5</i> | 5 | 13844951 | 13844951 | C | T | nonsynonymous | NM_001369 | c.G5266A | p.E1756K |

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|-----|-------|-----------------|----|-----------|-----------|-------------------------------|-----|---------------|--------------|-------------------|-----------------|
| 159 | BLOOD | <i>GOLGA6L2</i> | 15 | 23685085 | 23685085 | G | A | nonsynonymous | NM_001304388 | c.C2537T | p.A846V |
| 159 | BLOOD | <i>PIGQ</i> | 16 | 632277 | 632277 | G | T | stopgain | NM_004204 | c.G1561T | p.E521X |
| 159 | BLOOD | <i>FLII</i> | 17 | 18160290 | 18160290 | C | A | nonsynonymous | NM_002018 | c.G107T | p.R36L |
| 160 | BLOOD | <i>ARHGEF26</i> | 3 | 153839950 | 153839950 | G | T | nonsynonymous | NM_001251962 | c.G169T | p.G57W |
| 160 | BLOOD | <i>DCAF10</i> | 9 | 37801359 | 37801359 | C | A | nonsynonymous | NM_024345 | c.C496A | p.R166S |
| 160 | BLOOD | <i>GPSM1</i> | 9 | 139230436 | 139230436 | C | A | nonsynonymous | NM_001145638 | c.C304A | p.R102S |
| 160 | BLOOD | <i>MUC5B</i> | 11 | 1253976 | 1253976 | A | G | nonsynonymous | NM_002458 | c.A2041G | p.S681G |
| 160 | BLOOD | <i>MUC5B</i> | 11 | 1253980 | 1253980 | A | G | nonsynonymous | NM_002458 | c.A2045G | p.D682G |
| 161 | BLOOD | <i>IGSF3</i> | 1 | 117122285 | 117122285 | - | TCC | nonframeshift | NM_001007237 | c.3062_3063insGGA | p.D1021delinsED |
| 161 | BLOOD | <i>FAM90A1</i> | 12 | 8374781 | 8374781 | - | ACG | nonframeshift | NM_018088 | c.1031_1032insCGT | p.T344delinsTV |
| 161 | BLOOD | <i>NPEPPS</i> | 17 | 45669428 | 45669428 | - | A | splicing | NM_006310 | c.1365+2->A | |
| 161 | BLOOD | <i>MEGF6</i> | 1 | 3407505 | 3407505 | G | T | nonsynonymous | NM_001409 | c.C4535A | p.P1512H |
| 161 | BLOOD | <i>HIVEP3</i> | 1 | 41978599 | 41978599 | G | T | stopgain | NM_024503 | c.C6293A | p.S2098X |
| 161 | BLOOD | <i>ACTR1B</i> | 2 | 98278410 | 98278410 | C | A | splicing | NM_005735 | c.49-1G>T | |
| 161 | BLOOD | <i>MAML3</i> | 4 | 141074078 | 141074078 | G | T | nonsynonymous | NM_018717 | c.C404A | p.P135Q |
| 161 | BLOOD | <i>PRDM13</i> | 6 | 100062001 | 100062001 | C | A | nonsynonymous | NM_021620 | c.C1490A | p.S497Y |
| 161 | BLOOD | <i>PCLO</i> | 7 | 82585792 | 82585792 | G | A | nonsynonymous | NM_033026 | c.C4477T | p.H1493Y |
| 161 | BLOOD | <i>N4BP1</i> | 16 | 48595458 | 48595458 | T | C | nonsynonymous | NM_153029 | c.A1096G | p.K366E |
| 161 | BLOOD | <i>SMCHD1</i> | 18 | 2796072 | 2796072 | G | T | stopgain | NM_015295 | c.G5845T | p.E1949X |
| 161 | BLOOD | <i>ZSCAN18</i> | 19 | 58596587 | 58596587 | G | T | nonsynonymous | NM_023926 | c.C998A | p.P333Q |
| 162 | BLOOD | <i>RPIL1</i> | 8 | 10466004 | 10466024 | CTGGGCCT CCCCTTCA GCCTC | - | nonframeshift | NM_178857 | c.5584_5604del | p.1862_1868del |
| 162 | BLOOD | <i>AHNAK</i> | 11 | 62303555 | 62303555 | - | CTC | nonframeshift | NM_001620 | c.15_16insGAG | p.T6delinsET |
| 162 | BLOOD | <i>APLP2</i> | 11 | 129991653 | 129991658 | GAAGAG | - | nonframeshift | NM_001642 | c.661_666del | p.221_222del |

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|-----|-------|-----------------|----|-----------|-----------|-----|---|---------------|--------------|----------------|--------------|
| 162 | BLOOD | <i>HOMEZ</i> | 14 | 23744801 | 23744803 | CAT | - | nonframeshift | NM_020834 | c.1634_1636del | p.545_546del |
| 162 | BLOOD | <i>PTPRU</i> | 1 | 29606578 | 29606578 | C | T | nonsynonymous | NM_005704 | c.C1793T | p.P598L |
| 162 | BLOOD | <i>ATOH8</i> | 2 | 85981841 | 85981841 | T | G | nonsynonymous | NM_032827 | c.T529G | p.S177A |
| 162 | BLOOD | <i>TTN</i> | 2 | 179594107 | 179594107 | G | C | nonsynonymous | NM_001267550 | c.C18776G | p.T6259S |
| 162 | BLOOD | <i>WNT10A</i> | 2 | 219754822 | 219754822 | G | A | nonsynonymous | NM_025216 | c.G493A | p.G165R |
| 162 | BLOOD | <i>CDC25A</i> | 3 | 48218913 | 48218913 | G | A | nonsynonymous | NM_001789 | c.C704T | p.S235L |
| 162 | BLOOD | <i>MUC4</i> | 3 | 195511123 | 195511123 | G | C | nonsynonymous | NM_018406 | c.C7328G | p.T2443R |
| 162 | BLOOD | <i>KIAA1211</i> | 4 | 57181261 | 57181261 | G | T | nonsynonymous | NM_020722 | c.G1593T | p.Q531H |
| 162 | BLOOD | <i>FAT2</i> | 5 | 150901601 | 150901601 | C | T | nonsynonymous | NM_001447 | c.G10553A | p.R3518H |
| 162 | BLOOD | <i>FAM193B</i> | 5 | 176959535 | 176959535 | G | T | nonsynonymous | NM_001190946 | c.C1184A | p.S395Y |
| 162 | BLOOD | <i>CSMD1</i> | 8 | 3047604 | 3047604 | G | T | nonsynonymous | NM_033225 | c.C5228A | p.S1743Y |
| 162 | BLOOD | <i>ZNF395</i> | 8 | 28210842 | 28210842 | C | A | nonsynonymous | NM_018660 | c.G667T | p.G223W |
| 162 | BLOOD | <i>GSDMD</i> | 8 | 144644266 | 144644266 | C | T | nonsynonymous | NM_001166237 | c.C961T | p.R321W |
| 162 | BLOOD | <i>SPATC1</i> | 8 | 145094857 | 145094857 | G | A | nonsynonymous | NM_198572 | c.G259A | p.E87K |
| 162 | BLOOD | <i>VPS13A</i> | 9 | 79938036 | 79938036 | C | T | nonsynonymous | NM_033305 | c.C5884T | p.R1962C |
| 162 | BLOOD | <i>PTPDC1</i> | 9 | 96860820 | 96860820 | G | A | nonsynonymous | NM_001253830 | c.G1810A | p.V604I |
| 162 | BLOOD | <i>MUSK</i> | 9 | 113457722 | 113457722 | T | C | nonsynonymous | NM_005592 | c.T398C | p.I133T |
| 162 | BLOOD | <i>RALGDS</i> | 9 | 135982548 | 135982548 | G | C | nonsynonymous | NM_006266 | c.C1337G | p.T446S |
| 162 | BLOOD | <i>DNLZ</i> | 9 | 139256513 | 139256513 | G | A | nonsynonymous | NM_001080849 | c.C488T | p.A163V |
| 162 | BLOOD | <i>FAM208B</i> | 10 | 5788304 | 5788304 | C | A | nonsynonymous | NM_017782 | c.C2920A | p.Q974K |
| 162 | BLOOD | <i>DLG5</i> | 10 | 79593768 | 79593768 | C | A | nonsynonymous | NM_004747 | c.G1652T | p.R551L |
| 162 | BLOOD | <i>MUC2</i> | 11 | 1092884 | 1092884 | C | T | nonsynonymous | NM_002457 | c.C4703T | p.T1568M |
| 162 | BLOOD | <i>ARHGEF17</i> | 11 | 73021626 | 73021626 | T | G | nonsynonymous | NM_014786 | c.T1943G | p.I648S |
| 162 | BLOOD | <i>RSF1</i> | 11 | 77413015 | 77413015 | T | A | nonsynonymous | NM_016578 | c.A1259T | p.Q420L |
| 162 | BLOOD | <i>BSX</i> | 11 | 122852212 | 122852212 | G | T | stopgain | NM_001098169 | c.C168A | p.Y56X |

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|-----|-------|------------------|----|-----------|-----------|-----|---|---------------|--------------|----------------|--------------|
| 162 | BLOOD | <i>GOLGA6L2</i> | 15 | 23685517 | 23685517 | C | T | nonsynonymous | NM_001304388 | c.G2105A | p.C702Y |
| 162 | BLOOD | <i>PAK6</i> | 15 | 40564621 | 40564621 | C | A | nonsynonymous | NM_001128629 | c.C1055A | p.P352H |
| 162 | BLOOD | <i>POLR2M</i> | 15 | 57999080 | 57999080 | G | T | stopgain | NM_015532 | c.G40T | p.E14X |
| 162 | BLOOD | <i>DHRS7C</i> | 17 | 9694460 | 9694460 | C | A | stopgain | NM_001220493 | c.G142T | p.G48X |
| 162 | BLOOD | <i>B3GNTL1</i> | 17 | 80918997 | 80918997 | G | T | nonsynonymous | NM_001009905 | c.C661A | p.R221S |
| 162 | BLOOD | <i>KMT2B</i> | 19 | 36210416 | 36210416 | C | A | nonsynonymous | NM_014727 | c.C409A | p.L137M |
| 162 | BLOOD | <i>BLVRB</i> | 19 | 40957315 | 40957315 | C | A | nonsynonymous | NM_000713 | c.G419T | p.R140L |
| 162 | BLOOD | <i>ARSD</i> | X | 2833605 | 2833605 | C | T | stopgain | NM_001669 | c.G992A | p.W331X |
| 162 | BLOOD | <i>ARSD</i> | X | 2835863 | 2835863 | G | T | nonsynonymous | NM_001669 | c.C845A | p.A282D |
| 162 | BLOOD | <i>CFAP47</i> | X | 36254097 | 36254097 | G | T | nonsynonymous | NM_001304548 | c.G7061T | p.G2354V |
| 163 | BLOOD | <i>GOLGA2</i> | 9 | 131020796 | 131020798 | CCT | - | nonframeshift | NM_004486 | c.2144_2146del | p.715_716del |
| 163 | BLOOD | <i>SMYD1</i> | 2 | 88409879 | 88409879 | C | T | nonsynonymous | NM_198274 | c.C1321T | p.R441W |
| 163 | BLOOD | <i>CCDC74A</i> | 2 | 132288337 | 132288337 | C | T | nonsynonymous | NM_138770 | c.C481T | p.R161C |
| 163 | BLOOD | <i>MCF2L2</i> | 3 | 182994679 | 182994679 | C | A | stopgain | NM_015078 | c.G1843T | p.G615X |
| 163 | BLOOD | <i>MUC4</i> | 3 | 195512686 | 195512686 | G | T | nonsynonymous | NM_018406 | c.C5765A | p.P1922H |
| 163 | BLOOD | <i>TMEM144</i> | 4 | 159158784 | 159158784 | C | A | nonsynonymous | NM_018342 | c.C671A | p.A224E |
| 163 | BLOOD | <i>C7orf76</i> | 7 | 96115627 | 96115627 | G | C | nonsynonymous | NM_001201450 | c.C115G | p.R39G |
| 163 | BLOOD | <i>SSPO</i> | 7 | 149506147 | 149506147 | G | A | nonsynonymous | NM_198455 | c.G9139A | p.G3047S |
| 163 | BLOOD | <i>COL17A1</i> | 10 | 105792717 | 105792717 | G | A | nonsynonymous | NM_000494 | c.C4304T | p.A1435V |
| 163 | BLOOD | <i>MUC2</i> | 11 | 1093072 | 1093072 | G | C | nonsynonymous | NM_002457 | c.G4891C | p.A1631P |
| 163 | BLOOD | <i>C14orf105</i> | 14 | 57948374 | 57948374 | A | C | nonsynonymous | NM_018168 | c.T398G | p.V133G |
| 163 | BLOOD | <i>TPSD1</i> | 16 | 1306971 | 1306971 | A | G | nonsynonymous | NM_012217 | c.A428G | p.H143R |
| 163 | BLOOD | <i>SRCIN1</i> | 17 | 36707424 | 36707424 | G | T | nonsynonymous | NM_025248 | c.C2929A | p.P977T |
| 163 | BLOOD | <i>NPC1</i> | 18 | 21124945 | 21124945 | C | G | nonsynonymous | NM_000271 | c.G1926C | p.M642I |
| 163 | BLOOD | <i>SLC39A3</i> | 19 | 2733188 | 2733188 | C | T | nonsynonymous | NM_144564 | c.G506A | p.R169H |

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|-----|-------|-----------------|----|-----------|-----------|---------------------|-----|---------------|--------------|-----------------|----------------|
| 163 | BLOOD | <i>COL5A3</i> | 19 | 10077022 | 10077022 | T | G | nonsynonymous | NM_015719 | c.A4750C | p.T1584P |
| 163 | BLOOD | <i>HOMER3</i> | 19 | 19042920 | 19042920 | C | A | nonsynonymous | NM_001145722 | c.G555T | p.W185C |
| 163 | BLOOD | <i>ASB12</i> | X | 63444970 | 63444970 | C | A | nonsynonymous | NM_130388 | c.G561T | p.L187F |
| 163 | BLOOD | <i>OPHN1</i> | X | 67333031 | 67333031 | G | T | nonsynonymous | NM_002547 | c.C1412A | p.S471Y |
| 163 | BLOOD | <i>RBMX</i> | X | 135958704 | 135958704 | G | C | nonsynonymous | NM_002139 | c.C499G | p.P167A |
| 163 | BLOOD | <i>RBMX</i> | X | 135958730 | 135958730 | C | A | nonsynonymous | NM_002139 | c.G473T | p.G158V |
| 164 | BLOOD | <i>ESPNL</i> | 2 | 239039312 | 239039312 | C | T | nonsynonymous | NM_194312 | c.C1957T | p.R653W |
| 164 | BLOOD | <i>RP1L1</i> | 8 | 10467628 | 10467628 | G | A | nonsynonymous | NM_178857 | c.C3980T | p.T1327I |
| 164 | BLOOD | <i>RP1L1</i> | 8 | 10467629 | 10467629 | T | C | nonsynonymous | NM_178857 | c.A3979G | p.T1327A |
| 164 | BLOOD | <i>SCRIB</i> | 8 | 144874877 | 144874877 | C | G | splicing | NM_015356 | c.4177+1G>C | |
| 164 | BLOOD | <i>KRT18</i> | 12 | 53343366 | 53343366 | A | T | nonsynonymous | NM_199187 | c.A409T | p.R137W |
| 164 | BLOOD | <i>KRT16</i> | 17 | 39768742 | 39768742 | C | T | nonsynonymous | NM_005557 | c.G199A | p.G67S |
| 164 | BLOOD | <i>NPC1</i> | 18 | 21124945 | 21124945 | C | G | nonsynonymous | NM_000271 | c.G1926C | p.M642I |
| 165 | BLOOD | <i>CDKN2AIP</i> | 4 | 184367559 | 184367561 | CTG | - | nonframeshift | NM_017632 | c.722_724del | p.241_242del |
| 165 | BLOOD | <i>HAVCR1</i> | 5 | 156479558 | 156479572 | TTGGAACA GTCGTCA | - | nonframeshift | NM_012206 | c.473_487del | p.158_163del |
| 165 | BLOOD | <i>C9orf43</i> | 9 | 116187645 | 116187645 | - | GCA | nonframeshift | NM_152786 | c.887_888insGCA | p.R296delinsRQ |
| 165 | BLOOD | <i>DOCK3</i> | 3 | 51266162 | 51266162 | A | G | nonsynonymous | NM_004947 | c.A1718G | p.N573S |
| 165 | BLOOD | <i>TLR9</i> | 3 | 52257055 | 52257055 | C | T | nonsynonymous | NM_017442 | c.G1277A | p.R426H |
| 165 | BLOOD | <i>CACNA2D3</i> | 3 | 55108169 | 55108169 | C | G | nonsynonymous | NM_018398 | c.C3212G | p.P1071R |
| 165 | BLOOD | <i>TMF1</i> | 3 | 69096928 | 69096928 | A | T | nonsynonymous | NM_007114 | c.T928A | p.F310I |
| 165 | BLOOD | <i>PPIC</i> | 5 | 122359589 | 122359589 | A | G | nonsynonymous | NM_000943 | c.T620C | p.V207A |
| 165 | BLOOD | <i>PCDHB12</i> | 5 | 140590139 | 140590139 | G | A | nonsynonymous | NM_018932 | c.G1660A | p.A554T |
| 165 | BLOOD | <i>RARS</i> | 5 | 167945045 | 167945045 | T | G | nonsynonymous | NM_002887 | c.T1851G | p.C617W |
| 165 | BLOOD | <i>SPDL1</i> | 5 | 169028316 | 169028316 | C | A | nonsynonymous | NM_017785 | c.C1357A | p.R453S |

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|-----|-------|----------------|----|-----------|-----------|---------------|-----|---------------|--------------|-------------------|----------------|
| 165 | BLOOD | <i>WDR86</i> | 7 | 151106512 | 151106512 | C | A | splicing | NM_001284260 | c.163+1G>T | |
| 165 | BLOOD | <i>TBC1D2</i> | 9 | 100961731 | 100961731 | G | A | nonsynonymous | NM_018421 | c.C2686T | p.R896W |
| 165 | BLOOD | <i>MUC2</i> | 11 | 1079757 | 1079757 | G | A | nonsynonymous | NM_002457 | c.G974A | p.R325H |
| 165 | BLOOD | <i>MUC5B</i> | 11 | 1264022 | 1264022 | C | T | nonsynonymous | NM_002458 | c.C5912T | p.T1971I |
| 165 | BLOOD | <i>MUC5B</i> | 11 | 1266039 | 1266039 | A | T | nonsynonymous | NM_002458 | c.A7929T | p.R2643S |
| 165 | BLOOD | <i>MUC5B</i> | 11 | 1267250 | 1267250 | C | A | nonsynonymous | NM_002458 | c.C9140A | p.T3047N |
| 170 | BLOOD | <i>NOL7</i> | 6 | 13620991 | 13620991 | - | A | frameshift | NM_016167 | c.707dupA | p.Q236fs |
| 170 | BLOOD | <i>GARS</i> | 7 | 30634583 | 30634585 | CTG | - | nonframeshift | NM_002047 | c.46_48del | p.16_16del |
| 170 | BLOOD | <i>FAM90A1</i> | 12 | 8374781 | 8374781 | - | ACG | nonframeshift | NM_018088 | c.1031_1032insCGT | p.T344delinsTV |
| 170 | BLOOD | <i>GMCL1</i> | 2 | 70098897 | 70098897 | A | G | nonsynonymous | NM_178439 | c.A1385G | p.D462G |
| 170 | BLOOD | <i>CAPN5</i> | 11 | 76796027 | 76796027 | T | C | nonsynonymous | NM_004055 | c.T95C | p.F32S |
| 171 | BLOOD | <i>RBM5</i> | 3 | 50155888 | 50155889 | GA | - | frameshift | NM_005778 | c.2447_2448del | p.*816fs |
| 171 | BLOOD | <i>FAM90A1</i> | 12 | 8374781 | 8374781 | - | ACG | nonframeshift | NM_018088 | c.1031_1032insCGT | p.T344delinsTV |
| 171 | BLOOD | <i>RETSAT</i> | 2 | 85570442 | 85570442 | C | T | nonsynonymous | NM_017750 | c.G1756A | p.A586T |
| 171 | BLOOD | <i>ANKRD36</i> | 2 | 97877478 | 97877478 | G | A | nonsynonymous | NM_001164315 | c.G3469A | p.V1157M |
| 171 | BLOOD | <i>TKT</i> | 3 | 53260819 | 53260819 | C | T | nonsynonymous | NM_001064 | c.G1649A | p.R550H |
| 171 | BLOOD | <i>ANXA11</i> | 10 | 81930624 | 81930624 | G | A | nonsynonymous | NM_145869 | c.C103T | p.P35S |
| 171 | BLOOD | <i>PDPR</i> | 16 | 70182390 | 70182390 | T | G | nonsynonymous | NM_017990 | c.T1986G | p.N662K |
| 171 | BLOOD | <i>MINK1</i> | 17 | 4790467 | 4790467 | G | T | stopgain | NM_015716 | c.G1012T | p.E338X |
| 171 | BLOOD | <i>KCNJ18</i> | 17 | 21319369 | 21319369 | G | A | nonsynonymous | NM_021012 | c.G715A | p.E239K |
| 171 | BLOOD | <i>VNIR2</i> | 19 | 53761857 | 53761857 | G | T | nonsynonymous | NM_173856 | c.G229T | p.V77F |
| 171 | BLOOD | <i>ARSD</i> | X | 2835863 | 2835863 | G | T | nonsynonymous | NM_001669 | c.C845A | p.A282D |
| 172 | BLOOD | <i>ODF1</i> | 8 | 103572984 | 103572992 | TGCAGCCC C | - | nonframeshift | NM_024410 | c.625_633del | p.209_211del |
| 172 | BLOOD | <i>CDSN</i> | 6 | 31084964 | 31084964 | T | C | nonsynonymous | NM_001264 | c.A428G | p.N143S |

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|-----|-------|-----------------|----|-----------|-----------|---|-----|---------------|--------------|-----------------|----------------|
| 172 | BLOOD | <i>HLA-DRB5</i> | 6 | 32489708 | 32489708 | C | A | nonsynonymous | NM_002125 | c.G344T | p.G115V |
| 172 | BLOOD | <i>HLA-DQB1</i> | 6 | 32629935 | 32629935 | C | G | nonsynonymous | NM_001243961 | c.G470C | p.G157A |
| 172 | BLOOD | <i>USP17L7</i> | 8 | 11990617 | 11990617 | C | A | nonsynonymous | NM_001256869 | c.G902T | p.R301L |
| 172 | BLOOD | <i>OPLAH</i> | 8 | 145107390 | 145107390 | C | T | nonsynonymous | NM_017570 | c.G3265A | p.V1089I |
| 172 | BLOOD | <i>INO80C</i> | 18 | 33077807 | 33077807 | G | C | nonsynonymous | NM_194281 | c.C32G | p.T11S |
| 172 | BLOOD | <i>GNAS</i> | 20 | 57429568 | 57429568 | A | C | nonsynonymous | NM_001077490 | c.A1061C | p.H354P |
| 172 | BLOOD | <i>OGFR</i> | 20 | 61444633 | 61444633 | G | A | nonsynonymous | NM_007346 | c.G1666A | p.E556K |
| 172 | BLOOD | <i>OGFR</i> | 20 | 61444637 | 61444637 | G | C | nonsynonymous | NM_007346 | c.G1670C | p.S557T |
| 173 | BLOOD | <i>BCL6B</i> | 17 | 6928019 | 6928019 | - | CAG | nonframeshift | NM_181844 | c.701_702insCAG | p.S234delinsSS |
| 173 | BLOOD | <i>NCOR1</i> | 17 | 16097870 | 16097870 | C | A | nonsynonymous | NM_006311 | c.G14T | p.G5V |
| 173 | BLOOD | <i>TBX21</i> | 17 | 45820022 | 45820022 | A | C | nonsynonymous | NM_013351 | c.A538C | p.T180P |
| 174 | BLOOD | <i>SERP1</i> | 3 | 150263867 | 150263867 | G | A | nonsynonymous | NM_014445 | c.C56T | p.T19I |
| 174 | BLOOD | <i>VOPPI</i> | 7 | 55588791 | 55588791 | G | T | nonsynonymous | NM_030796 | c.C87A | p.F29L |
| 174 | BLOOD | <i>TAS2R43</i> | 12 | 11244687 | 11244687 | G | C | nonsynonymous | NM_176884 | c.C142G | p.L48V |
| 176 | BLOOD | <i>MARCKS</i> | 6 | 114181210 | 114181210 | A | - | frameshift | NM_002356 | c.454delA | p.K152fs |
| 177 | BLOOD | <i>ODF1</i> | 8 | 103573011 | 103573037 | TGCAACCC CTGCAGCC CCTGCAAC CCG | - | nonframeshift | NM_024410 | c.652_678del | p.218_226del |
| 177 | BLOOD | <i>KRTAP5-5</i> | 11 | 1651191 | 1651199 | GGCTGTGG A | - | nonframeshift | NM_001001480 | c.121_129del | p.41_43del |
| 177 | BLOOD | <i>PRAMEF2</i> | 1 | 12918997 | 12918997 | A | C | nonsynonymous | NM_023014 | c.A133C | p.S45R |
| 177 | BLOOD | <i>CADPS2</i> | 7 | 122028750 | 122028750 | A | T | nonsynonymous | NM_017954 | c.T3051A | p.D1017E |
| 177 | BLOOD | <i>KRTAP4-6</i> | 17 | 39296135 | 39296135 | G | A | nonsynonymous | NM_030976 | c.C605T | p.S202F |
| 177 | BLOOD | <i>ARSD</i> | X | 2833643 | 2833643 | C | A | nonsynonymous | NM_001669 | c.G954T | p.Q318H |

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|-----|-------|------------------|----|-----------|-----------|-------------------------------|-----|---------------|--------------|-----------------|----------------|
| 178 | BLOOD | <i>GYPC</i> | 2 | 127413885 | 127413885 | C | T | nonsynonymous | NM_002101 | c.C46T | p.L16F |
| 180 | BLOOD | <i>LOC554223</i> | 6 | 29760353 | 29760373 | GCGGGCGC CGTGGATG GAGCA | - | nonframeshift | NM_001207043 | c.438_458del | p.146_153del |
| 180 | BLOOD | <i>DCST2</i> | 1 | 154995909 | 154995909 | C | T | nonsynonymous | NM_144622 | c.G1895A | p.R632H |
| 180 | BLOOD | <i>SYVNI</i> | 11 | 64898164 | 64898164 | T | G | nonsynonymous | NM_172230 | c.A1073C | p.H358P |
| 182 | BLOOD | <i>SLC22A14</i> | 3 | 38349147 | 38349150 | TTTG | - | frameshift | NM_004803 | c.711_714del | p.Y237fs |
| 182 | BLOOD | <i>ZNF662</i> | 3 | 42955840 | 42955842 | AAG | - | nonframeshift | NM_207404 | c.275_277del | p.92_93del |
| 182 | BLOOD | <i>HAVCR1</i> | 5 | 156479568 | 156479568 | - | GTT | nonframeshift | NM_012206 | c.476_477insAAC | p.T159delinsTT |
| 182 | BLOOD | <i>SAMD11</i> | 1 | 878744 | 878744 | G | C | nonsynonymous | NM_152486 | c.G1676C | p.G559A |
| 182 | BLOOD | <i>ACAP3</i> | 1 | 1238571 | 1238571 | G | C | nonsynonymous | NM_030649 | c.C196G | p.Q66E |
| 182 | BLOOD | <i>PHACTR4</i> | 1 | 28806965 | 28806965 | G | C | nonsynonymous | NM_001048183 | c.G1609C | p.A537P |
| 182 | BLOOD | <i>CSMD2</i> | 1 | 33999413 | 33999413 | G | T | nonsynonymous | NM_001281956 | c.C9974A | p.T3325N |
| 182 | BLOOD | <i>GLIS1</i> | 1 | 54060428 | 54060428 | C | T | nonsynonymous | NM_147193 | c.G148A | p.G50S |
| 182 | BLOOD | <i>OMA1</i> | 1 | 58971748 | 58971748 | T | A | nonsynonymous | NM_145243 | c.A1349T | p.D450V |
| 182 | BLOOD | <i>ANGPTL3</i> | 1 | 63063616 | 63063616 | C | T | nonsynonymous | NM_014495 | c.C379T | p.L127F |
| 182 | BLOOD | <i>DDX20</i> | 1 | 112298755 | 112298755 | C | T | nonsynonymous | NM_007204 | c.C209T | p.S70L |
| 182 | BLOOD | <i>NBPF8</i> | 1 | 148342488 | 148342488 | T | C | nonsynonymous | NM_001277444 | c.A548G | p.Q183R |
| 182 | BLOOD | <i>TRIM71</i> | 3 | 32860251 | 32860251 | C | T | nonsynonymous | NM_001039111 | c.C679T | p.H227Y |
| 182 | BLOOD | <i>ITGA9</i> | 3 | 37670679 | 37670679 | G | A | nonsynonymous | NM_002207 | c.G1691A | p.R564Q |
| 182 | BLOOD | <i>POMGNT2</i> | 3 | 43122847 | 43122847 | C | T | nonsynonymous | NM_032806 | c.G77A | p.R26H |
| 182 | BLOOD | <i>DCPIA</i> | 3 | 53381488 | 53381488 | G | C | nonsynonymous | NM_018403 | c.C57G | p.H19Q |
| 182 | BLOOD | <i>CMYA5</i> | 5 | 79029531 | 79029531 | A | G | nonsynonymous | NM_153610 | c.A4943G | p.Q1648R |
| 182 | BLOOD | <i>FAT2</i> | 5 | 150923405 | 150923405 | A | G | nonsynonymous | NM_001447 | c.T7283C | p.F2428S |
| 189 | BLOOD | <i>MIR205HG</i> | 1 | 209605637 | 209605648 | AGCAGCAG | - | nonframeshift | NM_001104548 | c.252_263del | p.84_88del |

| | | | | | | CAGC | | | | | |
|-----|-------|------------------|----|-----------|-----------|---------------------|---|---------------|--------------|--------------|--------------|
| 189 | BLOOD | <i>HAVCR1</i> | 5 | 156479558 | 156479572 | TTGGAACA GTCGTCA | - | nonframeshift | NM_012206 | c.473_487del | p.158_163del |
| 189 | BLOOD | <i>PRDM16</i> | 1 | 3328948 | 3328948 | C | G | nonsynonymous | NM_022114 | c.C2187G | p.F729L |
| 189 | BLOOD | <i>SRRM1</i> | 1 | 24977901 | 24977901 | C | T | nonsynonymous | NM_005839 | c.C523T | p.R175C |
| 189 | BLOOD | <i>CEP85</i> | 1 | 26570657 | 26570657 | G | T | nonsynonymous | NM_022778 | c.G56T | p.S19I |
| 189 | BLOOD | <i>GPATCH3</i> | 1 | 27224190 | 27224190 | G | A | nonsynonymous | NM_022078 | c.C478T | p.R160W |
| 189 | BLOOD | <i>HS6ST1</i> | 2 | 129075797 | 129075797 | A | C | nonsynonymous | NM_004807 | c.T341G | p.V114G |
| 189 | BLOOD | <i>UGT1A9</i> | 2 | 234581382 | 234581382 | A | G | nonsynonymous | NM_021027 | c.A802G | p.N268D |
| 189 | BLOOD | <i>MUC4</i> | 3 | 195507228 | 195507228 | G | C | nonsynonymous | NM_018406 | c.C11223G | p.H3741Q |
| 189 | BLOOD | <i>CRIPAK</i> | 4 | 1389005 | 1389005 | T | C | nonsynonymous | NM_175918 | c.T706C | p.C236R |
| 189 | BLOOD | <i>BEND4</i> | 4 | 42122289 | 42122289 | T | C | nonsynonymous | NM_207406 | c.A1169G | p.N390S |
| 189 | BLOOD | <i>PRR27</i> | 4 | 71024463 | 71024463 | G | C | nonsynonymous | NM_214711 | c.G494C | p.G165A |
| 189 | BLOOD | <i>SMARCA5</i> | 4 | 144457793 | 144457793 | T | G | nonsynonymous | NM_003601 | c.T1457G | p.V486G |
| 189 | BLOOD | <i>SLC30A5</i> | 5 | 68425283 | 68425283 | A | G | nonsynonymous | NM_022902 | c.A2137G | p.I713V |
| 189 | BLOOD | <i>SLC35G5</i> | 8 | 11189591 | 11189591 | C | T | nonsynonymous | NM_054028 | c.C976T | p.R326W |
| 189 | BLOOD | <i>ANKRD20A4</i> | 9 | 69424115 | 69424115 | C | G | nonsynonymous | NM_001098805 | c.C2411G | p.T804R |
| 189 | BLOOD | <i>MCM10</i> | 10 | 13234360 | 13234360 | C | T | nonsynonymous | NM_182751 | c.C1625T | p.A542V |
| 189 | BLOOD | <i>C10orf111</i> | 10 | 15138762 | 15138762 | C | A | nonsynonymous | NM_153244 | c.G62T | p.G21V |
| 189 | BLOOD | <i>EIF5AL1</i> | 10 | 81272814 | 81272814 | G | C | nonsynonymous | NM_001099692 | c.G409C | p.V137L |
| 189 | BLOOD | <i>COL17A1</i> | 10 | 105816892 | 105816892 | C | T | nonsynonymous | NM_000494 | c.G1306A | p.G436R |
| 189 | BLOOD | <i>TACC2</i> | 10 | 123843357 | 123843357 | G | T | nonsynonymous | NM_206862 | c.G1342T | p.A448S |
| 189 | BLOOD | <i>TACC2</i> | 10 | 123844815 | 123844815 | T | G | nonsynonymous | NM_206862 | c.T2800G | p.S934A |
| 189 | BLOOD | <i>MTIF3</i> | 13 | 28014173 | 28014173 | T | C | nonsynonymous | NM_001166261 | c.A413G | p.Q138R |

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|-----|-------|----------------|----|-----------|-----------|--|--------|---------------|--------------|--------------------------|----------------------|
| 189 | BLOOD | <i>COL4A2</i> | 13 | 111082772 | 111082772 | G | T | nonsynonymous | NM_001846 | c.G574T | p.V192F |
| 190 | BLOOD | <i>PRSS48</i> | 4 | 152201018 | 152201018 | - | CAGGT | frameshift | NM_183375 | c.123_124insCAGGT | p.W41fs |
| 190 | BLOOD | <i>ATAD5</i> | 17 | 29161956 | 29161961 | CAATGT | - | nonframeshift | NM_024857 | c.857_862del | p.286_288del |
| 190 | BLOOD | <i>SH3BGR</i> | 21 | 40883671 | 40883671 | - | AGA | nonframeshift | NM_007341 | c.689_690insAGA | p.G230delinsGE |
| 190 | BLOOD | <i>OR4K1</i> | 14 | 20404385 | 20404385 | T | C | nonsynonymous | NM_001004063 | c.T560C | p.L187P |
| 190 | BLOOD | <i>TBC1D16</i> | 17 | 77984286 | 77984286 | C | T | nonsynonymous | NM_019020 | c.G452A | p.R151H |
| 190 | BLOOD | <i>ARSD</i> | X | 2836037 | 2836037 | G | C | nonsynonymous | NM_001669 | c.C671G | p.S224C |
| 190 | BLOOD | <i>TCEANC</i> | X | 13681679 | 13681679 | G | T | nonsynonymous | NM_001297563 | c.G1052T | p.W351L |
| 190 | BLOOD | <i>ZMYM3</i> | X | 70470545 | 70470545 | C | A | nonsynonymous | NM_001171162 | c.G810T | p.M270I |
| 191 | BLOOD | <i>TLLI0</i> | 1 | 1116223 | 1116223 | G | - | frameshift | NM_001130045 | c.738delG | p.P246fs |
| 191 | BLOOD | <i>IRF5</i> | 7 | 128587352 | 128587381 | ACTCTGCA GCCGCCCA CTCTGCGG CCGCCT | - | nonframeshift | NM_001098630 | c.502_531del | p.168_177del |
| 191 | BLOOD | <i>SGK223</i> | 8 | 8176387 | 8176387 | - | GGGGCG | nonframeshift | NM_001080826 | c.3497_3498insCGC CCC | p.P1166delinsPA P |
| 191 | BLOOD | <i>PUM2</i> | 2 | 20518348 | 20518348 | C | T | nonsynonymous | NM_001282790 | c.G110A | p.G37D |
| 191 | BLOOD | <i>CLHC1</i> | 2 | 55407644 | 55407644 | A | T | splicing | NM_152385 | c.1384+2T>A | |
| 191 | BLOOD | <i>VRK2</i> | 2 | 58276070 | 58276070 | T | C | nonsynonymous | NM_001288837 | c.T104C | p.I35T |
| 191 | BLOOD | <i>ZKSCAN7</i> | 3 | 44598871 | 44598871 | G | A | nonsynonymous | NM_001288590 | c.G332A | p.R111Q |
| 191 | BLOOD | <i>MUC20</i> | 3 | 195447886 | 195447886 | G | C | nonsynonymous | NM_001282506 | c.G8C | p.C3S |
| 191 | BLOOD | <i>PRMT9</i> | 4 | 148559898 | 148559898 | C | T | nonsynonymous | NM_001304458 | c.G1984A | p.V662I |
| 191 | BLOOD | <i>LARS</i> | 5 | 145512479 | 145512479 | T | C | nonsynonymous | NM_020117 | c.A2378G | p.N793S |
| 191 | BLOOD | <i>SPINK5</i> | 5 | 147498551 | 147498551 | A | G | nonsynonymous | NM_006846 | c.A2243G | p.E748G |
| 191 | BLOOD | <i>SLC26A4</i> | 7 | 107341628 | 107341628 | T | C | nonsynonymous | NM_000441 | c.T1790C | p.L597S |

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|-----|-------|-----------------|----|-----------|-----------|--------|-----|---------------|--------------|-------------------|----------------|
| 191 | BLOOD | <i>CLCN1</i> | 7 | 143039510 | 143039510 | G | C | nonsynonymous | NM_000083 | c.G1842C | p.K614N |
| 191 | BLOOD | <i>HMBOX1</i> | 8 | 28828018 | 28828018 | A | G | nonsynonymous | NM_024567 | c.A482G | p.K161R |
| 191 | BLOOD | <i>CCDC171</i> | 9 | 15564100 | 15564100 | C | T | nonsynonymous | NM_173550 | c.C14T | p.T5I |
| 191 | BLOOD | <i>TAF1L</i> | 9 | 32633036 | 32633036 | C | T | nonsynonymous | NM_153809 | c.G2542A | p.D848N |
| 191 | BLOOD | <i>PRSS3</i> | 9 | 33796799 | 33796799 | A | T | nonsynonymous | NM_007343 | c.A370T | p.T124S |
| 191 | BLOOD | <i>MYO7A</i> | 11 | 76910750 | 76910750 | A | G | nonsynonymous | NM_000260 | c.A4739G | p.Y1580C |
| 191 | BLOOD | <i>C11orf53</i> | 11 | 111156438 | 111156438 | G | A | nonsynonymous | NM_198498 | c.G370A | p.D124N |
| 191 | BLOOD | <i>FOXRED1</i> | 11 | 126141370 | 126141370 | A | C | nonsynonymous | NM_017547 | c.A124C | p.K42Q |
| 191 | BLOOD | <i>SCAMP4</i> | 19 | 1918134 | 1918134 | G | A | nonsynonymous | NM_079834 | c.G145A | p.A49T |
| 192 | BLOOD | <i>NOLA</i> | 18 | 31523144 | 31523144 | - | A | splicing | NM_003787 | c.1429-2->T | |
| 192 | BLOOD | <i>EEA1</i> | 12 | 93196332 | 93196332 | C | T | nonsynonymous | NM_003566 | c.G2518A | p.E840K |
| 193 | BLOOD | <i>FOXE1</i> | 9 | 100616701 | 100616706 | GCCGCC | - | nonframeshift | NM_004473 | c.505_510del | p.169_170del |
| 193 | BLOOD | <i>FAM90A1</i> | 12 | 8374781 | 8374781 | - | ACG | nonframeshift | NM_018088 | c.1031_1032insCGT | p.T344delinsTV |
| 193 | BLOOD | <i>OGFR</i> | 20 | 61444633 | 61444633 | G | A | nonsynonymous | NM_007346 | c.G1666A | p.E556K |
| 193 | BLOOD | <i>OGFR</i> | 20 | 61444637 | 61444637 | G | C | nonsynonymous | NM_007346 | c.G1670C | p.S557T |
| 193 | BLOOD | <i>PLAC4</i> | 21 | 42551311 | 42551311 | A | G | nonsynonymous | NM_182832 | c.T245C | p.I82T |
| 195 | BLOOD | <i>NPHS1</i> | 19 | 36336437 | 36336437 | T | C | nonsynonymous | NM_004646 | c.A1763G | p.E588G |
| 196 | BLOOD | <i>MST1L</i> | 1 | 17087245 | 17087245 | C | - | splicing | NM_001271733 | c.338+1G>- | |
| 196 | BLOOD | <i>UGT2B28</i> | 4 | 70155416 | 70155416 | G | A | nonsynonymous | NM_053039 | c.G1036A | p.A346T |
| 196 | BLOOD | <i>APC</i> | 5 | 112175240 | 112175240 | G | C | nonsynonymous | NM_000038 | c.G3949C | p.E1317Q |
| 196 | BLOOD | <i>OGFR</i> | 20 | 61444633 | 61444633 | G | A | nonsynonymous | NM_007346 | c.G1666A | p.E556K |
| 196 | BLOOD | <i>OGFR</i> | 20 | 61444637 | 61444637 | G | C | nonsynonymous | NM_007346 | c.G1670C | p.S557T |
| 197 | BLOOD | <i>NUTM2F</i> | 9 | 97080945 | 97080947 | AGA | - | nonframeshift | NM_017561 | c.2071_2073del | p.691_691del |
| 204 | BLOOD | <i>MUC4</i> | 3 | 195507242 | 195507242 | C | A | nonsynonymous | NM_018406 | c.G11209T | p.A3737S |
| 204 | BLOOD | <i>UPF3A</i> | 13 | 115047496 | 115047496 | G | C | nonsynonymous | NM_023011 | c.G208C | p.V70L |

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|-----|-------|-----------------|----|-----------|-----------|------------------|-----|---------------|--------------|-------------------|-----------------|
| 204 | BLOOD | <i>RFPLAAL1</i> | 19 | 56284130 | 56284130 | G | A | nonsynonymous | NM_001277397 | c.G449A | p.R150H |
| 204 | BLOOD | <i>ZNF814</i> | 19 | 58385546 | 58385546 | G | T | nonsynonymous | NM_001144989 | c.C1212A | p.D404E |
| 207 | BLOOD | <i>IL9R</i> | X | 155239827 | 155239827 | A | G | nonsynonymous | NM_002186 | c.A1319G | p.N440S |
| 208 | BLOOD | <i>MIR205HG</i> | 1 | 209605637 | 209605648 | AGCAGCAG CAGC | - | nonframeshift | NM_001104548 | c.252_263del | p.84_88del |
| 209 | BLOOD | <i>IGSF3</i> | 1 | 117122285 | 117122285 | - | TCC | nonframeshift | NM_001007237 | c.3062_3063insGGA | p.D1021delinsED |
| 209 | BLOOD | <i>SLC12A9</i> | 7 | 100454610 | 100454610 | C | - | frameshift | NM_020246 | c.569delC | p.A190fs |
| 209 | BLOOD | <i>FOXE1</i> | 9 | 100616701 | 100616706 | GCCGCC | - | nonframeshift | NM_004473 | c.505_510del | p.169_170del |
| 209 | BLOOD | <i>LRRC49</i> | 15 | 71276481 | 71276483 | CAA | - | nonframeshift | NM_017691 | c.1054_1056del | p.352_352del |
| 209 | BLOOD | <i>FAM83G</i> | 17 | 18874685 | 18874685 | - | GGT | nonframeshift | NM_001039999 | c.2458_2459insACC | p.R820delinsHR |
| 209 | BLOOD | <i>RERE</i> | 1 | 8420748 | 8420748 | G | C | nonsynonymous | NM_012102 | c.C2819G | p.P940R |
| 209 | BLOOD | <i>RPS6KA1</i> | 1 | 26898674 | 26898674 | C | T | nonsynonymous | NM_002953 | c.C1837T | p.P613S |
| 209 | BLOOD | <i>SMPDL3B</i> | 1 | 28285131 | 28285131 | G | A | nonsynonymous | NM_014474 | c.G1150A | p.G384S |
| 209 | BLOOD | <i>AZIN2</i> | 1 | 33585779 | 33585779 | T | C | nonsynonymous | NM_052998 | c.T1379C | p.M460T |
| 209 | BLOOD | <i>PLK3</i> | 1 | 45268781 | 45268781 | C | T | nonsynonymous | NM_004073 | c.C904T | p.R302C |
| 209 | BLOOD | <i>HOOK1</i> | 1 | 60331623 | 60331623 | G | A | nonsynonymous | NM_015888 | c.G1824A | p.M608I |
| 209 | BLOOD | <i>CNTN4</i> | 3 | 3078995 | 3078995 | G | A | nonsynonymous | NM_001206955 | c.G2075A | p.R692Q |
| 209 | BLOOD | <i>CMYA5</i> | 5 | 79084811 | 79084811 | A | G | nonsynonymous | NM_153610 | c.A11573G | p.K3858R |
| 209 | BLOOD | <i>ADGRV1</i> | 5 | 89969880 | 89969880 | A | G | nonsynonymous | NM_032119 | c.A4939G | p.I1647V |
| 209 | BLOOD | <i>HOXA7</i> | 7 | 27196116 | 27196116 | C | T | nonsynonymous | NM_006896 | c.G49A | p.G17R |
| 209 | BLOOD | <i>CDK13</i> | 7 | 40132656 | 40132656 | G | A | nonsynonymous | NM_003718 | c.G3508A | p.V1170M |
| 209 | BLOOD | <i>POM121</i> | 7 | 72416688 | 72416688 | T | C | nonsynonymous | NM_172020 | c.T2870C | p.L957P |
| 209 | BLOOD | <i>MUC3A</i> | 7 | 100550873 | 100550873 | G | A | nonsynonymous | NM_005960 | c.G1454A | p.R485H |
| 209 | BLOOD | <i>ST7</i> | 7 | 116862976 | 116862976 | G | T | nonsynonymous | NM_021908 | c.G1700T | p.R567L |
| 209 | BLOOD | <i>PARP12</i> | 7 | 139737538 | 139737538 | T | C | nonsynonymous | NM_022750 | c.A1301G | p.H434R |

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|-----|-------|------------------|----|-----------|-----------|---|---|---------------|--------------|-----------|----------|
| 209 | BLOOD | <i>PARP12</i> | 7 | 139757751 | 139757751 | T | C | nonsynonymous | NM_022750 | c.A410G | p.Y137C |
| 209 | BLOOD | <i>TAS2R38</i> | 7 | 141673087 | 141673087 | A | C | nonsynonymous | NM_176817 | c.T403G | p.W135G |
| 209 | BLOOD | <i>MGAM</i> | 7 | 141796153 | 141796153 | T | G | nonsynonymous | NM_004668 | c.T4942G | p.W1648G |
| 209 | BLOOD | <i>OR2A2</i> | 7 | 143807454 | 143807454 | T | A | nonsynonymous | NM_001005480 | c.T779A | p.V260D |
| 209 | BLOOD | <i>SSPO</i> | 7 | 149480669 | 149480669 | C | T | nonsynonymous | NM_198455 | c.C2375T | p.P792L |
| 209 | BLOOD | <i>SSPO</i> | 7 | 149492449 | 149492449 | C | T | nonsynonymous | NM_198455 | c.C6338T | p.A2113V |
| 209 | BLOOD | <i>SSPO</i> | 7 | 149522406 | 149522406 | G | A | nonsynonymous | NM_198455 | c.G14033A | p.C4678Y |
| 209 | BLOOD | <i>SSPO</i> | 7 | 149522447 | 149522447 | C | T | nonsynonymous | NM_198455 | c.C14074T | p.R4692C |
| 209 | BLOOD | <i>AGAP3</i> | 7 | 150817086 | 150817086 | G | A | nonsynonymous | NM_001281300 | c.G298A | p.G100S |
| 209 | BLOOD | <i>PABPC1</i> | 8 | 101719004 | 101719004 | G | A | nonsynonymous | NM_002568 | c.C1477T | p.R493C |
| 209 | BLOOD | <i>PABPC1</i> | 8 | 101719138 | 101719138 | C | T | nonsynonymous | NM_002568 | c.G1424A | p.R475Q |
| 209 | BLOOD | <i>PABPC1</i> | 8 | 101719201 | 101719201 | A | G | nonsynonymous | NM_002568 | c.T1361C | p.I454T |
| 209 | BLOOD | <i>PABPC1</i> | 8 | 101721812 | 101721812 | G | A | nonsynonymous | NM_002568 | c.C1120T | p.R374C |
| 209 | BLOOD | <i>SORL1</i> | 11 | 121444958 | 121444958 | A | G | nonsynonymous | NM_003105 | c.A3346G | p.I1116V |
| 209 | BLOOD | <i>ZNF202</i> | 11 | 123600380 | 123600380 | C | T | nonsynonymous | NM_001301780 | c.G556A | p.A186T |
| 209 | BLOOD | <i>TP53BP1</i> | 15 | 43705457 | 43705457 | T | A | nonsynonymous | NM_005657 | c.A5150T | p.E1717V |
| 209 | BLOOD | <i>TP53BP1</i> | 15 | 43705458 | 43705458 | C | A | stopgain | NM_005657 | c.G5149T | p.E1717X |
| 209 | BLOOD | <i>SECISBP2L</i> | 15 | 49320832 | 49320832 | T | C | nonsynonymous | NM_001193489 | c.A712G | p.T238A |
| 209 | BLOOD | <i>DMXL2</i> | 15 | 51790979 | 51790979 | T | C | nonsynonymous | NM_015263 | c.A4442G | p.D1481G |
| 209 | BLOOD | <i>TICRR</i> | 15 | 90145114 | 90145114 | T | A | nonsynonymous | NM_152259 | c.T2474A | p.V825E |
| 209 | BLOOD | <i>CIB1</i> | 15 | 90775542 | 90775542 | C | A | nonsynonymous | NM_006384 | c.G104T | p.C35F |
| 209 | BLOOD | <i>CHD9</i> | 16 | 53281210 | 53281210 | G | A | nonsynonymous | NM_025134 | c.G3460A | p.E1154K |
| 209 | BLOOD | <i>CDH3</i> | 16 | 68718642 | 68718642 | G | A | nonsynonymous | NM_001793 | c.G1339A | p.V447I |
| 209 | BLOOD | <i>USP6</i> | 17 | 5066289 | 5066289 | C | T | nonsynonymous | NM_001304284 | c.C3026T | p.S1009F |
| 209 | BLOOD | <i>RABEP1</i> | 17 | 5284690 | 5284690 | G | A | nonsynonymous | NM_004703 | c.G2377A | p.V793I |

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|-----|-------|------------------|----|-----------|-----------|------------------|---|---------------|--------------|------------|---------------|
| 209 | BLOOD | <i>NLRP1</i> | 17 | 5425076 | 5425076 | A | G | nonsynonymous | NM_033004 | c.T3551C | p.M1184T |
| 209 | BLOOD | <i>MYH13</i> | 17 | 10265747 | 10265747 | A | G | nonsynonymous | NM_003802 | c.T278C | p.M93T |
| 209 | BLOOD | <i>FLCN</i> | 17 | 17131217 | 17131217 | A | C | nonsynonymous | NM_144997 | c.T235G | p.S79A |
| 209 | BLOOD | <i>MADCAM1</i> | 19 | 501762 | 501762 | A | C | nonsynonymous | NM_130760 | c.A761C | p.Q254P |
| 209 | BLOOD | <i>MADCAM1</i> | 19 | 501767 | 501767 | C | T | nonsynonymous | NM_130760 | c.C766T | p.P256S |
| 209 | BLOOD | <i>ATP4A</i> | 19 | 36049278 | 36049278 | T | G | nonsynonymous | NM_000704 | c.A1486C | p.T496P |
| 210 | BLOOD | <i>MCF2L2</i> | 3 | 183006997 | 183006997 | G | A | nonsynonymous | NM_015078 | c.C1687T | p.R563C |
| 210 | BLOOD | <i>SYT15</i> | 10 | 46965864 | 46965864 | G | C | nonsynonymous | NM_031912 | c.C673G | p.Q225E |
| 210 | BLOOD | <i>HDHD1</i> | X | 7023678 | 7023678 | G | A | nonsynonymous | NM_012080 | c.C263T | p.T88M |
| 211 | BLOOD | <i>PPFIBP2</i> | 11 | 7618803 | 7618803 | A | C | nonsynonymous | NM_003621 | c.A385C | p.T129P |
| 211 | BLOOD | <i>UPF3A</i> | 13 | 115047496 | 115047496 | G | C | nonsynonymous | NM_023011 | c.G208C | p.V70L |
| 212 | BLOOD | <i>FBN3</i> | 19 | 8212017 | 8212017 | G | A | nonsynonymous | NM_032447 | c.C221T | p.T74I |
| 212 | BLOOD | <i>PLAC4</i> | 21 | 42551222 | 42551222 | T | G | nonsynonymous | NM_182832 | c.A334C | p.I112L |
| 213 | BLOOD | <i>ZDHHC11</i> | 5 | 843723 | 843723 | C | A | nonsynonymous | NM_024786 | c.G620T | p.R207M |
| 213 | BLOOD | <i>SOGA3</i> | 6 | 127837125 | 127837125 | T | C | nonsynonymous | NM_001012279 | c.A635G | p.E212G |
| 213 | BLOOD | <i>CHST15</i> | 10 | 125804260 | 125804260 | G | A | nonsynonymous | NM_001270765 | c.C722T | p.A241V |
| 214 | BLOOD | <i>ROBO3</i> | 11 | 124749145 | 124749145 | G | A | nonsynonymous | NM_022370 | c.G3593A | p.R1198H |
| 215 | BLOOD | <i>LARP7</i> | 4 | 113578482 | 113578482 | - | A | frameshift | NM_001267039 | c.1770dupA | p.X590delinsX |
| 215 | BLOOD | <i>PDCD6</i> | 5 | 271858 | 271869 | CCGGCCCT GGGG | - | nonframeshift | NM_013232 | c.23_34del | p.8_12del |
| 216 | BLOOD | <i>MUC4</i> | 3 | 195507874 | 195507874 | G | T | nonsynonymous | NM_018406 | c.C10577A | p.T3526N |
| 216 | BLOOD | <i>PDCL</i> | 9 | 125585356 | 125585356 | T | C | nonsynonymous | NM_005388 | c.A293G | p.H98R |
| 217 | BLOOD | <i>LOC441155</i> | 6 | 66014503 | 66014503 | G | A | nonsynonymous | NM_001271675 | c.G2089A | p.A697T |
| 217 | BLOOD | <i>TUBB8</i> | 10 | 94025 | 94025 | T | C | nonsynonymous | NM_177987 | c.A307G | p.K103E |
| 217 | BLOOD | <i>MADCAM1</i> | 19 | 501762 | 501762 | A | C | nonsynonymous | NM_130760 | c.A761C | p.Q254P |

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|-----|-------|-----------------|----|-----------|-----------|------------------------------|--------|---------------|--------------|--------------------------|-----------------|
| 218 | BLOOD | <i>CCDC180</i> | 9 | 100092968 | 100092968 | - | GAGGAG | nonframeshift | NM_020893 | c.2325_2326insGAG GAG | p.E775delinsEEE |
| 218 | BLOOD | <i>FAM90A1</i> | 12 | 8374781 | 8374781 | - | ACG | nonframeshift | NM_018088 | c.1031_1032insCGT | p.T344delinsTV |
| 218 | BLOOD | <i>NOP9</i> | 14 | 24769849 | 24769849 | - | GAG | nonframeshift | NM_174913 | c.483_484insGAG | p.A161delinsAE |
| 218 | BLOOD | <i>MOB3A</i> | 19 | 2078334 | 2078354 | AGATGAGG TTGACGCG GTAA | - | nonframeshift | NM_130807 | c.206_226del | p.69_76del |
| 218 | BLOOD | <i>OR7G3</i> | 19 | 9236698 | 9236698 | - | ATGGT | frameshift | NM_001001958 | c.928_929insACCAT | p.S310fs |
| 218 | BLOOD | <i>GDF15</i> | 19 | 18499305 | 18499305 | - | CGT | nonframeshift | NM_004864 | c.487_488insCGT | p.P163delinsPS |
| 218 | BLOOD | <i>IL17RB</i> | 3 | 53889368 | 53889368 | G | A | nonsynonymous | NM_018725 | c.G529A | p.G177R |
| 218 | BLOOD | <i>MAPK10</i> | 4 | 87028378 | 87028378 | T | A | nonsynonymous | NM_138982 | c.A364T | p.N122Y |
| 218 | BLOOD | <i>PGGT1B</i> | 5 | 114552604 | 114552604 | G | A | nonsynonymous | NM_005023 | c.C910T | p.R304C |
| 218 | BLOOD | <i>DAGLB</i> | 7 | 6449794 | 6449794 | A | G | nonsynonymous | NM_139179 | c.T1787C | p.I596T |
| 218 | BLOOD | <i>C9orf84</i> | 9 | 114456228 | 114456228 | C | T | nonsynonymous | NM_173521 | c.G3124A | p.E1042K |
| 218 | BLOOD | <i>MEGF9</i> | 9 | 123476257 | 123476257 | G | A | nonsynonymous | NM_001080497 | c.C380T | p.P127L |
| 218 | BLOOD | <i>DPP7</i> | 9 | 140008769 | 140008769 | C | G | nonsynonymous | NM_013379 | c.G247C | p.A83P |
| 218 | BLOOD | <i>CARS</i> | 11 | 3050622 | 3050622 | G | A | nonsynonymous | NM_001751 | c.C604T | p.L202F |
| 218 | BLOOD | <i>MRGPRE</i> | 11 | 3249686 | 3249686 | G | A | nonsynonymous | NM_001039165 | c.C344T | p.A115V |
| 218 | BLOOD | <i>CATSPER2</i> | 15 | 43927973 | 43927973 | C | T | nonsynonymous | NM_172095 | c.G1073A | p.R358Q |
| 218 | BLOOD | <i>TCF12</i> | 15 | 57525037 | 57525037 | G | A | nonsynonymous | NM_003205 | c.G953A | p.G318E |
| 218 | BLOOD | <i>MED16</i> | 19 | 868105 | 868105 | G | A | nonsynonymous | NM_005481 | c.C2630T | p.P877L |
| 218 | BLOOD | <i>RPL18A</i> | 19 | 17972120 | 17972120 | G | A | nonsynonymous | NM_000980 | c.G37A | p.V13M |
| 218 | BLOOD | <i>RBMX</i> | X | 135960230 | 135960230 | C | T | nonsynonymous | NM_002139 | c.G232A | p.A78T |
| 219 | BLOOD | <i>KRTAP1-1</i> | 17 | 39197423 | 39197437 | CAGCAGCT TGGCTGG | - | nonframeshift | NM_030967 | c.213_227del | p.71_76del |

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|-----|-------|------------------|----|-----------|-----------|---------------------------------|-----|---------------|--------------|-------------------|----------------|
| 219 | BLOOD | <i>HDGFRP2</i> | 19 | 4499633 | 4499647 | AGCTGGCC GGGGAGG | - | frameshift | NM_001001520 | c.1721_1722del | p.K574fs |
| 219 | BLOOD | <i>ATG4B</i> | 2 | 242606080 | 242606080 | G | A | nonsynonymous | NM_013325 | c.G559A | p.V187I |
| 219 | BLOOD | <i>HLA-DRB1</i> | 6 | 32551948 | 32551948 | G | T | nonsynonymous | NM_002124 | c.C308A | p.A103E |
| 219 | BLOOD | <i>KRTAP4-11</i> | 17 | 39274021 | 39274021 | T | C | nonsynonymous | NM_033059 | c.A547G | p.S183G |
| 219 | BLOOD | <i>EFHC2</i> | X | 44094685 | 44094685 | G | T | nonsynonymous | NM_025184 | c.C1289A | p.S430Y |
| 220 | BLOOD | <i>CCDC144NL</i> | 17 | 20796704 | 20796704 | C | - | splicing | NM_001004306 | c.415+1G>- | |
| 220 | BLOOD | <i>DNAH1</i> | 3 | 52406252 | 52406252 | A | G | nonsynonymous | NM_015512 | c.A6676G | p.I2226V |
| 220 | BLOOD | <i>PLD1</i> | 3 | 171321041 | 171321041 | C | T | nonsynonymous | NM_002662 | c.G3052A | p.D1018N |
| 220 | BLOOD | <i>TLR10</i> | 4 | 38776925 | 38776925 | T | C | nonsynonymous | NM_030956 | c.A287G | p.K96R |
| 220 | BLOOD | <i>ZNF716</i> | 7 | 57528739 | 57528739 | G | A | nonsynonymous | NM_001159279 | c.G572A | p.G191D |
| 220 | BLOOD | <i>AKAP17A</i> | X | 1719897 | 1719897 | C | G | nonsynonymous | NM_005088 | c.C1498G | p.P500A |
| 221 | BLOOD | <i>ANKRD36</i> | 2 | 97877478 | 97877478 | G | A | nonsynonymous | NM_001164315 | c.G3469A | p.V1157M |
| 221 | BLOOD | <i>EPN2</i> | 17 | 19237487 | 19237487 | A | G | nonsynonymous | NM_014964 | c.A1846G | p.M616V |
| 222 | BLOOD | <i>PDPR</i> | 16 | 70182390 | 70182390 | T | G | nonsynonymous | NM_017990 | c.T1986G | p.N662K |
| 222 | BLOOD | <i>RBMX</i> | X | 135960230 | 135960230 | C | T | nonsynonymous | NM_002139 | c.G232A | p.A78T |
| 223 | BLOOD | <i>FAM90A1</i> | 12 | 8374781 | 8374781 | - | ACG | nonframeshift | NM_018088 | c.1031_1032insCGT | p.T344delinsTV |
| 223 | BLOOD | <i>FAM86B2</i> | 8 | 12287957 | 12287957 | C | T | nonsynonymous | NM_001137610 | c.G244A | p.E82K |
| 223 | BLOOD | <i>RBMX</i> | X | 135957716 | 135957716 | A | G | nonsynonymous | NM_001164803 | c.T245C | p.M82T |
| 224 | BLOOD | <i>MICA</i> | 6 | 31380161 | 31380161 | - | CT | frameshift | NM_001177519 | c.952_953insCT | p.G318fs |
| 224 | BLOOD | <i>HDGFRP2</i> | 19 | 4499633 | 4499647 | AGCTGGCC GGGGAGG | - | frameshift | NM_001001520 | c.1721_1722del | p.K574fs |
| 225 | BLOOD | <i>KTI12</i> | 1 | 52499071 | 52499097 | GCCCCCA CCTGAGGT CCCGCGAT | - | nonframeshift | NM_138417 | c.337_363del | p.113_121del |

| | | | | | | CGG | | | | | |
|-----|-------|-----------------|----|-----------|-----------|---|--------|---------------|--------------|------------------------|-----------------|
| 225 | BLOOD | <i>APOBR</i> | 16 | 28507398 | 28507424 | GGGACAGC CTCAGGAG GGGAGGAG GCC | - | nonframeshift | NM_018690 | c.1036_1062del | p.346_354del |
| 225 | BLOOD | <i>CPTP</i> | 1 | 1262875 | 1262875 | G | C | nonsynonymous | NM_001029885 | c.G377C | p.R126P |
| 225 | BLOOD | <i>GPA33</i> | 1 | 167038174 | 167038174 | G | A | nonsynonymous | NM_005814 | c.C400T | p.R134C |
| 225 | BLOOD | <i>MEOX2</i> | 7 | 15725823 | 15725823 | G | T | nonsynonymous | NM_005924 | c.C205A | p.H69N |
| 225 | BLOOD | <i>ANO2</i> | 12 | 5744355 | 5744355 | C | G | nonsynonymous | NM_001278596 | c.G1794C | p.E598D |
| 225 | BLOOD | <i>SMCHD1</i> | 18 | 2769780 | 2769780 | C | T | nonsynonymous | NM_015295 | c.C4808T | p.T1603I |
| 226 | BLOOD | <i>RPL14</i> | 3 | 40503520 | 40503520 | - | CTGCTG | nonframeshift | NM_001034996 | c.445_446insCTGCT G | p.T149delinsTAA |
| 226 | BLOOD | <i>POU4F2</i> | 4 | 147560458 | 147560466 | GGCGGCGG C | - | nonframeshift | NM_004575 | c.166_174del | p.56_58del |
| 226 | BLOOD | <i>CCDC125</i> | 5 | 68578843 | 68578845 | CTT | - | nonframeshift | NM_176816 | c.1247_1249del | p.416_417del |
| 226 | BLOOD | <i>CHST15</i> | 10 | 125780753 | 125780753 | G | - | frameshift | NM_001270765 | c.1366delC | p.R456fs |
| 226 | BLOOD | <i>TNRC6A</i> | 16 | 24788423 | 24788434 | GCAGCCAC AGCC | - | nonframeshift | NM_014494 | c.333_344del | p.111_115del |
| 226 | BLOOD | <i>TNFRSF25</i> | 1 | 6525267 | 6525267 | G | C | nonsynonymous | NM_003790 | c.C176G | p.A59G |
| 226 | BLOOD | <i>CLCN6</i> | 1 | 11897135 | 11897135 | G | A | nonsynonymous | NM_001286 | c.G2060A | p.R687Q |
| 226 | BLOOD | <i>BMP8A</i> | 1 | 39988084 | 39988084 | G | A | nonsynonymous | NM_181809 | c.G878A | p.R293H |
| 226 | BLOOD | <i>IL5RA</i> | 3 | 3143391 | 3143391 | G | A | nonsynonymous | NM_175726 | c.C352T | p.L118F |
| 226 | BLOOD | <i>CMTM6</i> | 3 | 32544147 | 32544147 | T | C | nonsynonymous | NM_017801 | c.A91G | p.M31V |
| 226 | BLOOD | <i>DIAPH1</i> | 5 | 140955835 | 140955835 | C | T | nonsynonymous | NM_005219 | c.G1423A | p.E475K |

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|-----|-------|------------------|----|-----------|-----------|---------------|---|---------------|--------------|--------------|------------|
| 226 | BLOOD | <i>FAT2</i> | 5 | 150901601 | 150901601 | C | T | nonsynonymous | NM_001447 | c.G10553A | p.R3518H |
| 226 | BLOOD | <i>ABCC10</i> | 6 | 43400500 | 43400500 | G | A | nonsynonymous | NM_001198934 | c.G782A | p.R261H |
| 226 | BLOOD | <i>MMS22L</i> | 6 | 97702450 | 97702450 | C | G | nonsynonymous | NM_198468 | c.G1102C | p.G368R |
| 226 | BLOOD | <i>RP1L1</i> | 8 | 10467605 | 10467605 | C | T | nonsynonymous | NM_178857 | c.G4003A | p.G1335R |
| 226 | BLOOD | <i>RP1L1</i> | 8 | 10467637 | 10467637 | T | C | nonsynonymous | NM_178857 | c.A3971G | p.E1324G |
| 226 | BLOOD | <i>HRCT1</i> | 9 | 35906583 | 35906583 | T | A | nonsynonymous | NM_001039792 | c.T299A | p.L100H |
| 226 | BLOOD | <i>ZNF79</i> | 9 | 130207072 | 130207072 | G | A | nonsynonymous | NM_007135 | c.G1093A | p.A365T |
| 226 | BLOOD | <i>SETX</i> | 9 | 135206512 | 135206512 | G | A | nonsynonymous | NM_015046 | c.C1025T | p.P342L |
| 226 | BLOOD | <i>GPRIN2</i> | 10 | 46999209 | 46999209 | G | A | nonsynonymous | NM_014696 | c.G329A | p.R110Q |
| 226 | BLOOD | <i>MUC2</i> | 11 | 1103250 | 1103250 | A | T | nonsynonymous | NM_002457 | c.A7988T | p.H2663L |
| 226 | BLOOD | <i>PELI3</i> | 11 | 66243148 | 66243148 | C | T | nonsynonymous | NM_145065 | c.C920T | p.A307V |
| 226 | BLOOD | <i>TPCN2</i> | 11 | 68854029 | 68854029 | C | T | nonsynonymous | NM_139075 | c.C2042T | p.S681L |
| 226 | BLOOD | <i>GJB2</i> | 13 | 20763341 | 20763341 | C | T | nonsynonymous | NM_004004 | c.G380A | p.R127H |
| 226 | BLOOD | <i>SLC46A3</i> | 13 | 29287326 | 29287326 | C | A | nonsynonymous | NM_181785 | c.G551T | p.G184V |
| 226 | BLOOD | <i>TEX26</i> | 13 | 31513900 | 31513900 | T | C | nonsynonymous | NM_152325 | c.T131C | p.V44A |
| 226 | BLOOD | <i>TP53BP1</i> | 15 | 43772082 | 43772082 | C | G | nonsynonymous | NM_005657 | c.G618C | p.R206S |
| 226 | BLOOD | <i>IGF1R</i> | 15 | 99459939 | 99459939 | G | A | nonsynonymous | NM_000875 | c.G2035A | p.D679N |
| 226 | BLOOD | <i>DNAH2</i> | 17 | 7667277 | 7667277 | C | T | nonsynonymous | NM_020877 | c.C3107T | p.A1036V |
| 226 | BLOOD | <i>DRG2</i> | 17 | 18003923 | 18003923 | C | T | nonsynonymous | NM_001388 | c.C581T | p.T194M |
| 226 | BLOOD | <i>LGALS9B</i> | 17 | 20370767 | 20370767 | G | C | nonsynonymous | NM_001042685 | c.C17G | p.S6C |
| 226 | BLOOD | <i>C20orf196</i> | 20 | 5843778 | 5843778 | G | A | nonsynonymous | NM_001303477 | c.G287A | p.R96Q |
| 226 | BLOOD | <i>KRTAP23-1</i> | 21 | 31720791 | 31720791 | T | C | nonsynonymous | NM_181624 | c.A134G | p.Q45R |
| 252 | BLOOD | <i>PDE4DIP</i> | 1 | 144923729 | 144923729 | T | - | frameshift | NM_014644 | c.729delA | p.E243fs |
| 252 | BLOOD | <i>KRTAP5-5</i> | 11 | 1651191 | 1651199 | GGCTGTGG A | - | nonframeshift | NM_001001480 | c.121_129del | p.41_43del |

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|-----|-------|------------------|----|-----------|-----------|---|---|---------------|--------------|-----------|----------|
| 252 | BLOOD | <i>NBPF8</i> | 1 | 148342488 | 148342488 | T | C | nonsynonymous | NM_001277444 | c.A548G | p.Q183R |
| 252 | BLOOD | <i>TTC21A</i> | 3 | 39178808 | 39178808 | G | A | nonsynonymous | NM_145755 | c.G3401A | p.R1134Q |
| 252 | BLOOD | <i>MUC4</i> | 3 | 195512606 | 195512606 | G | C | nonsynonymous | NM_018406 | c.C5845G | p.H1949D |
| 252 | BLOOD | <i>REST</i> | 4 | 57796639 | 57796639 | T | C | nonsynonymous | NM_005612 | c.T1615C | p.S539P |
| 252 | BLOOD | <i>AKAP2</i> | 9 | 112900355 | 112900355 | C | T | nonsynonymous | NM_001136562 | c.C1838T | p.A613V |
| 252 | BLOOD | <i>ORM2</i> | 9 | 117095379 | 117095379 | G | C | nonsynonymous | NM_000608 | c.G571C | p.E191Q |
| 252 | BLOOD | <i>GTF3C5</i> | 9 | 135932235 | 135932235 | G | A | nonsynonymous | NM_012087 | c.G1333A | p.D445N |
| 252 | BLOOD | <i>BLOC1S2</i> | 10 | 102046406 | 102046406 | G | A | nonsynonymous | NM_001282439 | c.C11T | p.A4V |
| 252 | BLOOD | <i>TEP1</i> | 14 | 20864781 | 20864781 | G | C | nonsynonymous | NM_007110 | c.C1658G | p.A553G |
| 252 | BLOOD | <i>IFT140</i> | 16 | 1633330 | 1633330 | C | T | nonsynonymous | NM_014714 | c.G1417A | p.A473T |
| 252 | BLOOD | <i>METTL22</i> | 16 | 8729067 | 8729067 | C | T | stopgain | NM_024109 | c.C598T | p.R200X |
| 252 | BLOOD | <i>CACNG3</i> | 16 | 24358069 | 24358069 | G | A | nonsynonymous | NM_006539 | c.G226A | p.V76M |
| 252 | BLOOD | <i>PDPR</i> | 16 | 70182390 | 70182390 | T | G | nonsynonymous | NM_017990 | c.T1986G | p.N662K |
| 252 | BLOOD | <i>GLOD4</i> | 17 | 673330 | 673330 | T | C | nonsynonymous | NM_016080 | c.A698G | p.D233G |
| 252 | BLOOD | <i>CCDC144NL</i> | 17 | 20769954 | 20769954 | T | G | nonsynonymous | NM_001004306 | c.A478C | p.T160P |
| 252 | BLOOD | <i>ZNF90</i> | 19 | 20229721 | 20229721 | A | G | nonsynonymous | NM_007138 | c.A1358G | p.Y453C |
| 252 | BLOOD | <i>DHRX</i> | X | 2139186 | 2139186 | C | T | nonsynonymous | NM_145177 | c.G889A | p.E297K |
| 252 | BLOOD | <i>ARSD</i> | X | 2836181 | 2836181 | A | T | nonsynonymous | NM_001669 | c.T527A | p.M176K |
| 252 | BLOOD | <i>ARSD</i> | X | 2836184 | 2836184 | C | T | nonsynonymous | NM_001669 | c.G524A | p.G175D |
| 252 | BLOOD | <i>ARSD</i> | X | 2836211 | 2836211 | A | T | nonsynonymous | NM_001669 | c.T497A | p.L166Q |
| 252 | BLOOD | <i>ARSD</i> | X | 2836238 | 2836238 | G | A | nonsynonymous | NM_001669 | c.C470T | p.S157F |
| 252 | BLOOD | <i>IRAK1</i> | X | 153285152 | 153285152 | C | A | stopgain | NM_001569 | c.G112T | p.E38X |
| 253 | BLOOD | <i>MARCKS</i> | 6 | 114181209 | 114181209 | - | A | frameshift | NM_002356 | c.454dupA | p.P151fs |

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|-----|-------|-----------------|----|-----------|-----------|--|---------------|---------------|--------------|---------------------------|----------------------|
| 253 | BLOOD | <i>KRTAP5-5</i> | 11 | 1651199 | 1651228 | AGGCTGTG GGGGCTGT GGCTCCGG CTGTGC | - | nonframeshift | NM_001001480 | c.129_158del | p.43_53del |
| 253 | BLOOD | <i>NCOA3</i> | 20 | 46279815 | 46279823 | GCAGCAGC A | - | nonframeshift | NM_001174087 | c.3738_3746del | p.1246_1249del |
| 253 | BLOOD | <i>MUC4</i> | 3 | 195515387 | 195515387 | T | C | nonsynonymous | NM_018406 | c.A3064G | p.T1022A |
| 253 | BLOOD | <i>RASSF7</i> | 11 | 563400 | 563400 | C | T | nonsynonymous | NM_003475 | c.C956T | p.P319L |
| 253 | BLOOD | <i>SLC26A11</i> | 17 | 78211381 | 78211381 | G | A | nonsynonymous | NM_001166347 | c.G973A | p.A325T |
| 253 | BLOOD | <i>ARSD</i> | X | 2836181 | 2836181 | A | T | nonsynonymous | NM_001669 | c.T527A | p.M176K |
| 253 | BLOOD | <i>ARSD</i> | X | 2836184 | 2836184 | C | T | nonsynonymous | NM_001669 | c.G524A | p.G175D |
| 253 | BLOOD | <i>ARSD</i> | X | 2836211 | 2836211 | A | T | nonsynonymous | NM_001669 | c.T497A | p.L166Q |
| 254 | BLOOD | <i>RPL14</i> | 3 | 40503520 | 40503520 | - | CTGCTGC TG | nonframeshift | NM_001034996 | c.445_446insCTGCT GCTG | p.T149delinsTAA A |
| 254 | BLOOD | <i>ZNF814</i> | 19 | 58385748 | 58385748 | G | A | nonsynonymous | NM_001144989 | c.C1010T | p.A337V |
| 255 | BLOOD | <i>OR7G3</i> | 19 | 9236698 | 9236698 | - | ATGGT | frameshift | NM_001001958 | c.928_929insACCAT | p.S310fs |
| 255 | BLOOD | <i>MTUS1</i> | 8 | 17601155 | 17601155 | G | C | nonsynonymous | NM_001001924 | c.C2245G | p.R749G |
| 256 | BLOOD | <i>MUC4</i> | 3 | 195505836 | 195505836 | G | C | nonsynonymous | NM_018406 | c.C12615G | p.H4205Q |
| 257 | BLOOD | <i>PCDHGA10</i> | 5 | 140795208 | 140795208 | - | A | frameshift | NM_032090 | c.2467dupA | p.V822fs |
| 257 | BLOOD | <i>UPF3A</i> | 13 | 115047496 | 115047496 | G | C | nonsynonymous | NM_023011 | c.G208C | p.V70L |
| 258 | BLOOD | <i>KTI12</i> | 1 | 52499071 | 52499097 | GCCCCCA CCTGAGGT CCCGCGAT CGG | - | nonframeshift | NM_138417 | c.337_363del | p.113_121del |
| 258 | BLOOD | <i>CDKN2AIP</i> | 4 | 184367559 | 184367561 | CTG | - | nonframeshift | NM_017632 | c.722_724del | p.241_242del |
| 258 | BLOOD | <i>FREMI</i> | 9 | 14792791 | 14792793 | TCT | - | nonframeshift | NM_144966 | c.3929_3931del | p.1310_1311del |

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|-----|-------|-----------------|----|-----------|-----------|----------------------------|-----|---------------|--------------|-----------------|----------------|
| 258 | BLOOD | <i>TP53AIP1</i> | 11 | 128807650 | 128807650 | - | C | frameshift | NM_022112 | c.63dupG | p.Q22fs |
| 258 | BLOOD | <i>HDGFRP2</i> | 19 | 4499633 | 4499647 | AGCTGGCC GGGGAGG | - | frameshift | NM_001001520 | c.1721_1722del | p.K574fs |
| 258 | BLOOD | <i>TSKS</i> | 19 | 50249933 | 50249950 | CTGCTTCTC CTCCGGCT C | - | nonframeshift | NM_021733 | c.769_786del | p.257_262del |
| 258 | BLOOD | <i>SH3BGR</i> | 21 | 40883671 | 40883671 | - | AGA | nonframeshift | NM_007341 | c.689_690insAGA | p.G230delinsGE |
| 258 | BLOOD | <i>HSPG2</i> | 1 | 22176661 | 22176661 | C | T | nonsynonymous | NM_005529 | c.G7319A | p.R2440Q |
| 258 | BLOOD | <i>HFM1</i> | 1 | 91809014 | 91809014 | C | T | nonsynonymous | NM_001017975 | c.G2308A | p.D770N |
| 258 | BLOOD | <i>COL11A1</i> | 1 | 103444970 | 103444970 | A | T | nonsynonymous | NM_001854 | c.T2578A | p.F860I |
| 258 | BLOOD | <i>OR6B2</i> | 2 | 240969179 | 240969179 | A | G | nonsynonymous | NM_001005853 | c.T668C | p.L223P |
| 258 | BLOOD | <i>ZNF852</i> | 3 | 44540724 | 44540724 | G | A | stopgain | NM_001287349 | c.C1543T | p.R515X |
| 258 | BLOOD | <i>ROBO1</i> | 3 | 78717048 | 78717048 | G | A | nonsynonymous | NM_002941 | c.C1951T | p.P651S |
| 258 | BLOOD | <i>KIAA1211</i> | 4 | 57182721 | 57182721 | C | T | nonsynonymous | NM_020722 | c.C3053T | p.P1018L |
| 258 | BLOOD | <i>SLC38A9</i> | 5 | 54993761 | 54993761 | C | T | nonsynonymous | NM_173514 | c.G26A | p.R9K |
| 258 | BLOOD | <i>TNRC18</i> | 7 | 5372669 | 5372669 | C | A | stopgain | NM_001080495 | c.G5731T | p.E1911X |
| 258 | BLOOD | <i>REXO2</i> | 11 | 114310379 | 114310379 | G | A | nonsynonymous | NM_015523 | c.G129A | p.M43I |
| 258 | BLOOD | <i>ZNF202</i> | 11 | 123596886 | 123596886 | G | A | nonsynonymous | NM_001301780 | c.C1766T | p.S589L |
| 258 | BLOOD | <i>TAS2R43</i> | 12 | 11244687 | 11244687 | G | C | nonsynonymous | NM_176884 | c.C142G | p.L48V |
| 258 | BLOOD | <i>MDP1</i> | 14 | 24683304 | 24683304 | C | A | nonsynonymous | NM_138476 | c.G457T | p.G153W |
| 258 | BLOOD | <i>SPNS3</i> | 17 | 4337410 | 4337410 | G | A | nonsynonymous | NM_182538 | c.G148A | p.V50I |
| 258 | BLOOD | <i>ALOX15</i> | 17 | 4542755 | 4542755 | T | C | nonsynonymous | NM_001140 | c.A307G | p.N103D |
| 258 | BLOOD | <i>ALOX15</i> | 17 | 4542757 | 4542757 | C | A | nonsynonymous | NM_001140 | c.G305T | p.G102V |
| 258 | BLOOD | <i>LGALS9B</i> | 17 | 20370767 | 20370767 | G | C | nonsynonymous | NM_001042685 | c.C17G | p.S6C |
| 258 | BLOOD | <i>KRTAP4-8</i> | 17 | 39254133 | 39254133 | G | T | nonsynonymous | NM_031960 | c.C204A | p.S68R |

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|-----|-------|------------------|----|-----------|-----------|---------------|-----|---------------|--------------|-------------------|----------------|
| 258 | BLOOD | <i>KDM4B</i> | 19 | 5110826 | 5110826 | G | T | nonsynonymous | NM_015015 | c.G1112T | p.R371L |
| 258 | BLOOD | <i>CYP4F2</i> | 19 | 15989730 | 15989730 | T | C | nonsynonymous | NM_001082 | c.A1414G | p.T472A |
| 258 | BLOOD | <i>PSG4</i> | 19 | 43702178 | 43702178 | C | T | nonsynonymous | NM_002780 | c.G680A | p.R227H |
| 258 | BLOOD | <i>CGB7</i> | 19 | 49558216 | 49558216 | C | T | nonsynonymous | NM_033142 | c.G65A | p.R22K |
| 258 | BLOOD | <i>NLRP2</i> | 19 | 55494951 | 55494951 | T | C | nonsynonymous | NM_001174081 | c.T1885C | p.S629P |
| 258 | BLOOD | <i>STAU1</i> | 20 | 47770473 | 47770473 | G | T | nonsynonymous | NM_017453 | c.C341A | p.P114Q |
| 258 | BLOOD | <i>KRTAP10-6</i> | 21 | 46012181 | 46012181 | C | T | nonsynonymous | NM_198688 | c.G185A | p.R62H |
| 258 | BLOOD | <i>RBMX</i> | X | 135956467 | 135956467 | C | T | nonsynonymous | NM_002139 | c.G1010A | p.S337N |
| 259 | BLOOD | <i>NADK</i> | 1 | 1684347 | 1684347 | - | CCT | nonframeshift | NM_023018 | c.1336_1337insAGG | p.G446delinsEG |
| 259 | BLOOD | <i>GDF10</i> | 10 | 48438647 | 48438649 | GCA | - | nonframeshift | NM_004962 | c.62_64del | p.21_22del |
| 259 | BLOOD | <i>EIF5</i> | 14 | 103804756 | 103804756 | - | CAC | nonframeshift | NM_001969 | c.532_533insCAC | p.T178delinsTP |
| 259 | BLOOD | <i>RBMX</i> | X | 135960146 | 135960146 | - | AA | frameshift | NM_002139 | c.315_316insTT | p.P106fs |
| 259 | BLOOD | <i>CC2D2A</i> | 4 | 15539735 | 15539735 | G | C | nonsynonymous | NM_001080522 | c.G1978C | p.V660L |
| 259 | BLOOD | <i>ZFP41</i> | 8 | 144332084 | 144332084 | C | T | nonsynonymous | NM_173832 | c.C74T | p.A25V |
| 259 | BLOOD | <i>LTB4R2</i> | 14 | 24780334 | 24780334 | C | T | nonsynonymous | NM_019839 | c.C464T | p.P155L |
| 259 | BLOOD | <i>ARSD</i> | X | 2836211 | 2836211 | A | T | nonsynonymous | NM_001669 | c.T497A | p.L166Q |
| 259 | BLOOD | <i>ARSD</i> | X | 2836238 | 2836238 | G | A | nonsynonymous | NM_001669 | c.C470T | p.S157F |
| 259 | BLOOD | <i>ZXDB</i> | X | 57619097 | 57619097 | G | A | nonsynonymous | NM_007157 | c.G616A | p.G206R |
| 259 | BLOOD | <i>RBMX</i> | X | 135960119 | 135960119 | C | T | nonsynonymous | NM_002139 | c.G343A | p.G115R |
| 259 | BLOOD | <i>RBMX</i> | X | 135961560 | 135961560 | C | G | nonsynonymous | NM_002139 | c.G27C | p.K9N |
| 260 | BLOOD | <i>FAM90A1</i> | 12 | 8374781 | 8374781 | - | ACG | nonframeshift | NM_018088 | c.1031_1032insCGT | p.T344delinsTV |
| 261 | BLOOD | <i>MAP3K1</i> | 5 | 56177849 | 56177851 | CAA | - | nonframeshift | NM_005921 | c.2822_2824del | p.941_942del |
| 261 | BLOOD | <i>MSH3</i> | 5 | 79950709 | 79950717 | GCAGCGGC C | - | nonframeshift | NM_002439 | c.163_171del | p.55_57del |
| 261 | BLOOD | <i>LOC286238</i> | 9 | 91262343 | 91262343 | - | TGG | nonframeshift | NM_001100111 | c.299_300insCCA | p.H100delinsHH |

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|-----|-------|-----------------|----|-----------|-----------|--------|--------|---------------|--------------|--------------------------|-----------------|
| 261 | BLOOD | <i>OR13C2</i> | 9 | 107367665 | 107367666 | GC | - | frameshift | NM_001004481 | c.243_244del | p.T81fs |
| 261 | BLOOD | <i>OR52D1</i> | 11 | 5510540 | 5510540 | - | GGCT | frameshift | NM_001005163 | c.604_605insGGCT | p.G202fs |
| 261 | BLOOD | <i>A2M</i> | 12 | 9246177 | 9246181 | TATGG | - | splicing | | | |
| 261 | BLOOD | <i>ACINI</i> | 14 | 23548783 | 23548783 | - | GAACGT | nonframeshift | NM_014977 | c.1934_1935insACG TTC | p.S645delinsSRS |
| 261 | BLOOD | <i>REC8</i> | 14 | 24646406 | 24646406 | - | GAA | nonframeshift | NM_001048205 | c.681_682insGAA | p.E227delinsEE |
| 261 | BLOOD | <i>THSD4</i> | 15 | 72063463 | 72063468 | ATGACT | - | nonframeshift | NM_024817 | c.2830_2835del | p.944_945del |
| 261 | BLOOD | <i>ATAD5</i> | 17 | 29161956 | 29161961 | CAATGT | - | nonframeshift | NM_024857 | c.857_862del | p.286_288del |
| 261 | BLOOD | <i>EME1</i> | 17 | 48452978 | 48452978 | - | AGC | nonframeshift | NM_152463 | c.409_410insAGC | p.K137delinsKQ |
| 261 | BLOOD | <i>SMG8</i> | 17 | 57288573 | 57288575 | ACA | - | nonframeshift | NM_018149 | c.1161_1163del | p.387_388del |
| 261 | BLOOD | <i>BBS5</i> | 2 | 170354138 | 170354138 | G | A | nonsynonymous | NM_152384 | c.G620A | p.R207H |
| 261 | BLOOD | <i>KLHL41</i> | 2 | 170367151 | 170367151 | T | G | nonsynonymous | NM_006063 | c.T863G | p.L288R |
| 261 | BLOOD | <i>KIAA1715</i> | 2 | 176812382 | 176812382 | G | C | nonsynonymous | NM_030650 | c.C532G | p.P178A |
| 261 | BLOOD | <i>TTN</i> | 2 | 179481618 | 179481618 | C | G | nonsynonymous | NM_001267550 | c.G47998C | p.D16000H |
| 261 | BLOOD | <i>ZNF142</i> | 2 | 219505465 | 219505465 | G | A | nonsynonymous | NM_001105537 | c.C4516T | p.R1506W |
| 261 | BLOOD | <i>COL4A3</i> | 2 | 228147228 | 228147228 | C | T | nonsynonymous | NM_000091 | c.C2636T | p.P879L |
| 261 | BLOOD | <i>CCDC174</i> | 3 | 14703205 | 14703205 | G | A | nonsynonymous | NM_016474 | c.G476A | p.S159N |
| 261 | BLOOD | <i>PDCD6IP</i> | 3 | 33906856 | 33906856 | C | T | nonsynonymous | NM_013374 | c.C2366T | p.T789M |
| 261 | BLOOD | <i>FLNB</i> | 3 | 58145348 | 58145348 | T | C | nonsynonymous | NM_001457 | c.T6956C | p.I2319T |
| 261 | BLOOD | <i>ACOX3</i> | 4 | 8416586 | 8416586 | T | G | nonsynonymous | NM_003501 | c.A448C | p.M150L |
| 261 | BLOOD | <i>DCHS2</i> | 4 | 155219540 | 155219540 | C | A | nonsynonymous | NM_017639 | c.G4561T | p.A1521S |
| 261 | BLOOD | <i>PCDHGA11</i> | 5 | 140802677 | 140802677 | G | A | nonsynonymous | NM_018914 | c.G1883A | p.R628H |
| 261 | BLOOD | <i>ARPC1B</i> | 7 | 98991711 | 98991711 | T | G | nonsynonymous | NM_005720 | c.T1049G | p.M350R |
| 261 | BLOOD | <i>ALKBH4</i> | 7 | 102098340 | 102098340 | C | T | nonsynonymous | NM_017621 | c.G410A | p.R137Q |
| 261 | BLOOD | <i>ST7</i> | 7 | 116862976 | 116862976 | G | T | nonsynonymous | NM_021908 | c.G1700T | p.R567L |

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|-----|-------|------------------|----|-----------|-----------|---|---|---------------|--------------|----------|----------|
| 261 | BLOOD | <i>PDIA4</i> | 7 | 148708977 | 148708977 | C | G | nonsynonymous | NM_004911 | c.G940C | p.G314R |
| 261 | BLOOD | <i>RNF20</i> | 9 | 104313033 | 104313033 | G | A | nonsynonymous | NM_019592 | c.G1238A | p.R413K |
| 261 | BLOOD | <i>DNLZ</i> | 9 | 139257489 | 139257489 | T | C | nonsynonymous | NM_001080849 | c.A320G | p.H107R |
| 261 | BLOOD | <i>SEC16A</i> | 9 | 139371031 | 139371031 | C | T | nonsynonymous | NM_014866 | c.G1037A | p.R346H |
| 261 | BLOOD | <i>OPALIN</i> | 10 | 98105840 | 98105840 | G | A | nonsynonymous | NM_033207 | c.C284T | p.T95M |
| 261 | BLOOD | <i>TLL2</i> | 10 | 98172999 | 98172999 | C | T | nonsynonymous | NM_012465 | c.G998A | p.R333Q |
| 261 | BLOOD | <i>RAB11FIP2</i> | 10 | 119774577 | 119774577 | G | A | nonsynonymous | NM_014904 | c.C1310T | p.P437L |
| 261 | BLOOD | <i>USH1C</i> | 11 | 17523037 | 17523037 | T | A | nonsynonymous | NM_005709 | c.A1372T | p.I458F |
| 261 | BLOOD | <i>MAPK8IP1</i> | 11 | 45924283 | 45924283 | C | T | nonsynonymous | NM_005456 | c.C965T | p.A322V |
| 261 | BLOOD | <i>MYBPC3</i> | 11 | 47364189 | 47364189 | C | T | nonsynonymous | NM_000256 | c.G1564A | p.A522T |
| 261 | BLOOD | <i>FTH1</i> | 11 | 61732941 | 61732941 | T | C | nonsynonymous | NM_002032 | c.A161G | p.K54R |
| 261 | BLOOD | <i>CNTN5</i> | 11 | 99690461 | 99690461 | A | G | nonsynonymous | NM_014361 | c.A242G | p.N81S |
| 261 | BLOOD | <i>LAG3</i> | 12 | 6884505 | 6884505 | G | T | nonsynonymous | NM_002286 | c.G848T | p.R283L |
| 261 | BLOOD | <i>ABCC9</i> | 12 | 22017410 | 22017410 | C | T | nonsynonymous | NM_005691 | c.G2200A | p.V734I |
| 261 | BLOOD | <i>KRT18</i> | 12 | 53344632 | 53344632 | A | G | nonsynonymous | NM_199187 | c.A599G | p.E200G |
| 261 | BLOOD | <i>LRR1Q1</i> | 12 | 85450426 | 85450426 | G | A | nonsynonymous | NM_001079910 | c.G1855A | p.E619K |
| 261 | BLOOD | <i>BRCA2</i> | 13 | 32972626 | 32972626 | A | T | stopgain | NM_000059 | c.A9976T | p.K3326X |
| 261 | BLOOD | <i>OR11H2</i> | 14 | 20181502 | 20181502 | C | T | nonsynonymous | NM_001197287 | c.G574A | p.V192I |
| 261 | BLOOD | <i>TSSK4</i> | 14 | 24675730 | 24675730 | C | T | nonsynonymous | NM_174944 | c.C241T | p.R81W |
| 261 | BLOOD | <i>OTUB2</i> | 14 | 94510318 | 94510318 | T | A | nonsynonymous | NM_023112 | c.T220A | p.F74I |
| 261 | BLOOD | <i>AHNAK2</i> | 14 | 105415229 | 105415229 | T | C | nonsynonymous | NM_138420 | c.A6559G | p.M2187V |
| 261 | BLOOD | <i>TRPM1</i> | 15 | 31318422 | 31318422 | C | G | nonsynonymous | NM_001252024 | c.G3549C | p.Q1183H |
| 261 | BLOOD | <i>TRPM1</i> | 15 | 31352749 | 31352749 | G | T | nonsynonymous | NM_001252024 | c.C1261A | p.P421T |
| 261 | BLOOD | <i>TRPM1</i> | 15 | 31362148 | 31362148 | C | G | nonsynonymous | NM_001252030 | c.G299C | p.G100A |
| 261 | BLOOD | <i>ATP8B4</i> | 15 | 50226359 | 50226359 | G | C | nonsynonymous | NM_024837 | c.C1308G | p.F436L |

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|-----|-------|----------------|----|-----------|-----------|---------------------|-----|---------------|--------------|-------------------|----------------|
| 261 | BLOOD | <i>GLDN</i> | 15 | 51675988 | 51675988 | C | T | nonsynonymous | NM_181789 | c.C440T | p.P147L |
| 261 | BLOOD | <i>ADAMTS7</i> | 15 | 79056129 | 79056129 | C | T | nonsynonymous | NM_014272 | c.G4652A | p.G1551D |
| 261 | BLOOD | <i>ALPK3</i> | 15 | 85360231 | 85360231 | C | T | nonsynonymous | NM_020778 | c.C154T | p.P52S |
| 261 | BLOOD | <i>TELO2</i> | 16 | 1550113 | 1550113 | G | A | nonsynonymous | NM_016111 | c.G950A | p.S317N |
| 261 | BLOOD | <i>ZC3H7A</i> | 16 | 11873171 | 11873171 | C | T | nonsynonymous | NM_014153 | c.G157A | p.V53I |
| 261 | BLOOD | <i>PHKB</i> | 16 | 47732476 | 47732476 | C | T | nonsynonymous | NM_000293 | c.C3121T | p.R1041W |
| 261 | BLOOD | <i>TAF1C</i> | 16 | 84217062 | 84217062 | C | T | nonsynonymous | NM_005679 | c.G272A | p.C91Y |
| 261 | BLOOD | <i>ERBB2</i> | 17 | 37879585 | 37879585 | A | G | nonsynonymous | NM_004448 | c.A1960G | p.I654V |
| 261 | BLOOD | <i>KRT13</i> | 17 | 39661684 | 39661684 | C | T | nonsynonymous | NM_153490 | c.G119A | p.G40E |
| 261 | BLOOD | <i>KCNH4</i> | 17 | 40315733 | 40315733 | C | T | nonsynonymous | NM_012285 | c.G2368A | p.G790S |
| 261 | BLOOD | <i>COL1A1</i> | 17 | 48263689 | 48263689 | C | T | nonsynonymous | NM_000088 | c.G3994A | p.D1332N |
| 261 | BLOOD | <i>MARCH10</i> | 17 | 60813550 | 60813550 | G | A | nonsynonymous | NM_152598 | c.C1679T | p.T560I |
| 261 | BLOOD | <i>TRIM47</i> | 17 | 73872893 | 73872893 | G | C | nonsynonymous | NM_033452 | c.C677G | p.A226G |
| 261 | BLOOD | <i>RITN</i> | 18 | 67802501 | 67802501 | T | C | nonsynonymous | NM_173630 | c.A2804G | p.H935R |
| 261 | BLOOD | <i>MGME1</i> | 20 | 17968871 | 17968871 | C | T | nonsynonymous | NM_052865 | c.C794T | p.T265I |
| 261 | BLOOD | <i>BCAS1</i> | 20 | 52645167 | 52645167 | C | A | nonsynonymous | NM_003657 | c.G487T | p.V163F |
| 261 | BLOOD | <i>DLG3</i> | X | 69669260 | 69669260 | G | A | nonsynonymous | NM_021120 | c.G460A | p.V154I |
| 262 | BLOOD | <i>FAM90A1</i> | 12 | 8374781 | 8374781 | - | ACG | nonframeshift | NM_018088 | c.1031_1032insCGT | p.T344delinsTV |
| 262 | BLOOD | <i>LATS2</i> | 13 | 21563179 | 21563179 | G | A | nonsynonymous | NM_014572 | c.C740T | p.P247L |
| 263 | BLOOD | <i>MCC</i> | 5 | 112824048 | 112824048 | - | GCC | nonframeshift | NM_001085377 | c.63_64insGGC | p.S22delinsGS |
| 263 | BLOOD | <i>HERC2</i> | 15 | 28517492 | 28517492 | C | A | nonsynonymous | NM_004667 | c.G952T | p.D318Y |
| 263 | BLOOD | <i>DYRK1B</i> | 19 | 40316422 | 40316422 | T | G | nonsynonymous | NM_004714 | c.A1823C | p.D608A |
| 264 | BLOOD | <i>PNRC1</i> | 6 | 89790781 | 89790781 | C | - | frameshift | NM_006813 | c.168delC | p.F56fs |
| 264 | BLOOD | <i>VPS13A</i> | 9 | 79999548 | 79999562 | TGATGATG ATGATGA | - | nonframeshift | NM_015186 | c.9237_9251del | p.3079_3084del |

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|-----|-------|-----------------|----|-----------|-----------|--|---|---------------|--------------|----------------|--------------|
| 264 | BLOOD | <i>MSTIL</i> | 1 | 17087465 | 17087465 | G | A | nonsynonymous | NM_001271733 | c.C200T | p.P67L |
| 264 | BLOOD | <i>ANAPC1</i> | 2 | 112614429 | 112614429 | G | A | stopgain | NM_022662 | c.C1393T | p.Q465X |
| 264 | BLOOD | <i>STK36</i> | 2 | 219561254 | 219561254 | G | A | nonsynonymous | NM_015690 | c.G2516A | p.R839Q |
| 264 | BLOOD | <i>MUC4</i> | 3 | 195511123 | 195511123 | G | C | nonsynonymous | NM_018406 | c.C7328G | p.T2443R |
| 264 | BLOOD | <i>CDKL3</i> | 5 | 133642326 | 133642326 | T | C | nonsynonymous | NM_001113575 | c.A1432G | p.R478G |
| 264 | BLOOD | <i>ENTPD8</i> | 9 | 140331113 | 140331113 | C | T | nonsynonymous | NM_001033113 | c.G646A | p.V216M |
| 264 | BLOOD | <i>FAM21C</i> | 10 | 46254776 | 46254776 | A | C | nonsynonymous | NM_015262 | c.A1562C | p.Y521S |
| 264 | BLOOD | <i>AHNAK2</i> | 14 | 105415229 | 105415229 | T | C | nonsynonymous | NM_138420 | c.A6559G | p.M2187V |
| 264 | BLOOD | <i>MVD</i> | 16 | 88721810 | 88721810 | C | T | nonsynonymous | NM_002461 | c.G694A | p.V232M |
| 264 | BLOOD | <i>AANAT</i> | 17 | 74465916 | 74465916 | C | T | nonsynonymous | NM_001088 | c.C488T | p.A163V |
| 266 | BLOOD | <i>GSPT1</i> | 16 | 12009531 | 12009539 | CCGCCGCC G | - | nonframeshift | NM_001130006 | c.39_47del | p.13_16del |
| 266 | BLOOD | <i>OR8J3</i> | 11 | 55904942 | 55904942 | A | T | nonsynonymous | NM_001004064 | c.T253A | p.F85I |
| 267 | BLOOD | <i>CCDC17</i> | 1 | 46086436 | 46086436 | T | C | nonsynonymous | NM_001114938 | c.A1669G | p.I557V |
| 267 | BLOOD | <i>CDC27</i> | 17 | 45234430 | 45234430 | A | G | nonsynonymous | NM_001256 | c.T691C | p.S231P |
| 269 | BLOOD | <i>HDGFRP2</i> | 19 | 4499633 | 4499647 | AGCTGGCC GGGGAGG | - | frameshift | NM_001001520 | c.1721_1722del | p.K574fs |
| 269 | BLOOD | <i>GPR63</i> | 6 | 97246697 | 97246697 | A | T | nonsynonymous | NM_001143957 | c.T911A | p.I304N |
| 269 | BLOOD | <i>ATP6V0A2</i> | 12 | 124228404 | 124228404 | C | G | nonsynonymous | NM_012463 | c.C1111G | p.R371G |
| 269 | BLOOD | <i>MGA</i> | 15 | 42052632 | 42052632 | C | T | nonsynonymous | NM_001164273 | c.C7303T | p.R2435W |
| 269 | BLOOD | <i>CASC3</i> | 17 | 38318036 | 38318036 | A | G | nonsynonymous | NM_007359 | c.A328G | p.N110D |
| 27 | BLOOD | <i>KTHI2</i> | 1 | 52499071 | 52499097 | GCCCCCA CCTGAGGT CCCGCGAT CGG | - | nonframeshift | NM_138417 | c.337_363del | p.113_121del |

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|-----|-------|------------------|----|-----------|-----------|---------------------|-------------------------|---------------|--------------|---------------------------------|-----------------------|
| 27 | BLOOD | <i>KRTAP4-5</i> | 17 | 39305775 | 39305775 | - | GGCAGCA GCTGGGG C | nonframeshift | NM_033188 | c.244_245insGCCCC AGCTGCTGCC | p.Q82delinsRPSC CQ |
| 271 | BLOOD | <i>KRTAP17-1</i> | 17 | 39471753 | 39471767 | GCCCCCGC AGCCAGA | - | nonframeshift | NM_031964 | c.136_150del | p.46_50del |
| 27 | BLOOD | <i>MUC20</i> | 3 | 195447886 | 195447886 | G | C | nonsynonymous | NM_001282506 | c.G8C | p.C3S |
| 271 | BLOOD | <i>PCDHGB1</i> | 5 | 140731059 | 140731059 | C | A | nonsynonymous | NM_018922 | c.C1232A | p.T411K |
| 271 | BLOOD | <i>GOLGA6B</i> | 15 | 72954796 | 72954796 | G | T | nonsynonymous | NM_018652 | c.G1051T | p.V351L |
| 271 | BLOOD | <i>HIC1</i> | 17 | 1961863 | 1961863 | C | T | nonsynonymous | NM_001098202 | c.C1936T | p.P646S |
| 271 | BLOOD | <i>NLRP13</i> | 19 | 56410271 | 56410271 | C | T | nonsynonymous | NM_176810 | c.G2822A | p.C941Y |
| 271 | BLOOD | <i>ZNF814</i> | 19 | 58385748 | 58385748 | G | A | nonsynonymous | NM_001144989 | c.C1010T | p.A337V |
| 272 | BLOOD | <i>FAM90A1</i> | 12 | 8374781 | 8374781 | - | ACG | nonframeshift | NM_018088 | c.1031_1032insCGT | p.T344delinsTV |
| 272 | BLOOD | <i>RFPL1</i> | 22 | 29837567 | 29837569 | TCC | - | nonframeshift | NM_021026 | c.410_412del | p.137_138del |
| 272 | BLOOD | <i>PASK</i> | 2 | 242063458 | 242063458 | C | T | nonsynonymous | NM_001252120 | c.G2810A | p.R937H |
| 272 | BLOOD | <i>BTD</i> | 3 | 15686731 | 15686731 | A | C | nonsynonymous | NM_000060 | c.A1368C | p.Q456H |
| 272 | BLOOD | <i>UBP1</i> | 3 | 33467159 | 33467159 | G | C | nonsynonymous | NM_014517 | c.C188G | p.P63R |
| 272 | BLOOD | <i>PPM1M</i> | 3 | 52282458 | 52282458 | C | G | nonsynonymous | NM_144641 | c.C903G | p.H301Q |
| 272 | BLOOD | <i>ZNF705G</i> | 8 | 7218632 | 7218632 | C | T | nonsynonymous | NM_001164457 | c.G139A | p.G47R |
| 272 | BLOOD | <i>RP1L1</i> | 8 | 10465990 | 10465990 | T | C | nonsynonymous | NM_178857 | c.A5618G | p.D1873G |
| 272 | BLOOD | <i>VPS13B</i> | 8 | 100844858 | 100844858 | C | T | nonsynonymous | NM_017890 | c.C9667T | p.R3223W |
| 272 | BLOOD | <i>ZC3H3</i> | 8 | 144620660 | 144620660 | G | A | nonsynonymous | NM_015117 | c.C877T | p.R293W |
| 272 | BLOOD | <i>OR2C1</i> | 16 | 3406838 | 3406838 | G | A | nonsynonymous | NM_012368 | c.G898A | p.A300T |
| 272 | BLOOD | <i>CDH16</i> | 16 | 66951619 | 66951619 | T | G | nonsynonymous | NM_004062 | c.A55C | p.K19Q |
| 272 | BLOOD | <i>CDC27</i> | 17 | 45234657 | 45234657 | T | C | nonsynonymous | NM_001256 | c.A569G | p.N190S |
| 272 | BLOOD | <i>CDC27</i> | 17 | 45234707 | 45234707 | T | A | nonsynonymous | NM_001256 | c.A519T | p.L173F |

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|-----|-------|-----------------|----|-----------|-----------|---|----|---------------|--------------|------------------|------------|
| 272 | BLOOD | <i>RNF126</i> | 19 | 651684 | 651684 | C | T | nonsynonymous | NM_194460 | c.G370A | p.A124T |
| 272 | BLOOD | <i>ZNF831</i> | 20 | 57766673 | 57766673 | C | T | nonsynonymous | NM_178457 | c.C599T | p.S200F |
| 272 | BLOOD | <i>OGFR</i> | 20 | 61444633 | 61444633 | G | A | nonsynonymous | NM_007346 | c.G1666A | p.E556K |
| 272 | BLOOD | <i>OGFR</i> | 20 | 61444637 | 61444637 | G | C | nonsynonymous | NM_007346 | c.G1670C | p.S557T |
| 272 | BLOOD | <i>ARSD</i> | X | 2835989 | 2835989 | A | C | nonsynonymous | NM_001669 | c.T719G | p.F240C |
| 28 | BLOOD | <i>DNAAF5</i> | 7 | 803464 | 803464 | - | GG | frameshift | NM_017802 | c.1636_1637insGG | p.L546fs |
| 28 | BLOOD | <i>KRTAP4-1</i> | 17 | 39340796 | 39340852 | CGGCAGCA GCTGGACA TACCACAG CTGGGGTG GCAGGTGG TCTGACAG CAGAGTGG G | - | nonframeshift | NM_033060 | c.246_254del | p.82_85del |
| 28 | BLOOD | <i>UBXN6</i> | 19 | 4446594 | 4446594 | - | T | frameshift | NM_025241 | c.822_823insA | p.R275fs |
| 28 | BLOOD | <i>ANKRD36</i> | 2 | 97820417 | 97820417 | T | G | nonsynonymous | NM_001164315 | c.T1199G | p.L400R |
| 28 | BLOOD | <i>TRMT44</i> | 4 | 8469974 | 8469974 | G | A | nonsynonymous | NM_152544 | c.G1828A | p.D610N |
| 28 | BLOOD | <i>WDR27</i> | 6 | 170068122 | 170068122 | G | A | stopgain | NM_182552 | c.C616T | p.R206X |
| 28 | BLOOD | <i>CNTNAP3B</i> | 9 | 43822704 | 43822704 | G | A | nonsynonymous | NM_001201380 | c.G1258A | p.V420I |
| 28 | BLOOD | <i>PCK2</i> | 14 | 24573075 | 24573075 | G | A | nonsynonymous | NM_004563 | c.G1825A | p.D609N |
| 28 | BLOOD | <i>CDK5RI</i> | 17 | 30814736 | 30814736 | G | A | nonsynonymous | NM_003885 | c.G98A | p.S33N |
| 28 | BLOOD | <i>TMEM150B</i> | 19 | 55824247 | 55824247 | A | G | nonsynonymous | NM_001085488 | c.T682C | p.S228P |
| 28 | BLOOD | <i>PANX2</i> | 22 | 50616193 | 50616193 | G | C | nonsynonymous | NM_052839 | c.G1052C | p.C351S |
| 28 | BLOOD | <i>SLC25A5</i> | X | 118603729 | 118603729 | G | A | nonsynonymous | NM_001152 | c.G217A | p.G73S |
| 308 | BLOOD | <i>CLDN16</i> | 3 | 190106072 | 190106072 | G | - | frameshift | NM_006580 | c.164delG | p.R55fs |

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|-----|-------|------------------|----|-----------|-----------|--|-----|---------------|--------------|-------------------|----------------|
| 308 | BLOOD | <i>ASPN</i> | 9 | 95237025 | 95237027 | TCA | - | nonframeshift | NM_017680 | c.153_155del | p.51_52del |
| 308 | BLOOD | <i>FAM83G</i> | 17 | 18874685 | 18874685 | - | GGT | nonframeshift | NM_001039999 | c.2458_2459insACC | p.R820delinsHR |
| 308 | BLOOD | <i>GPR50</i> | X | 150349558 | 150349569 | CACCACTG GCCA | - | nonframeshift | NM_004224 | c.1503_1514del | p.501_505del |
| 308 | BLOOD | <i>WDR63</i> | 1 | 85537631 | 85537631 | C | G | nonsynonymous | NM_145172 | c.C7G | p.P3A |
| 308 | BLOOD | <i>DNLZ</i> | 9 | 139257508 | 139257508 | G | A | nonsynonymous | NM_001080849 | c.C301T | p.P101S |
| 308 | BLOOD | <i>C9orf142</i> | 9 | 139887803 | 139887803 | G | C | nonsynonymous | NM_183241 | c.G430C | p.E144Q |
| 308 | BLOOD | <i>MUC5B</i> | 11 | 1272059 | 1272059 | G | C | nonsynonymous | NM_002458 | c.G13949C | p.R4650T |
| 308 | BLOOD | <i>ATG2A</i> | 11 | 64668420 | 64668420 | G | A | nonsynonymous | NM_015104 | c.C4264T | p.R1422C |
| 308 | BLOOD | <i>ITM2B</i> | 13 | 48833050 | 48833050 | A | G | nonsynonymous | NM_021999 | c.A682G | p.T228A |
| 308 | BLOOD | <i>EDNRB</i> | 13 | 78492540 | 78492540 | C | T | nonsynonymous | NM_001122659 | c.G169A | p.G57S |
| 308 | BLOOD | <i>GOLGA6L10</i> | 15 | 82635194 | 82635194 | T | C | nonsynonymous | NM_001164465 | c.A1505G | p.E502G |
| 308 | BLOOD | <i>OR1D5</i> | 17 | 2966273 | 2966273 | G | A | nonsynonymous | NM_014566 | c.C629T | p.P210L |
| 308 | BLOOD | <i>KRTAP1-5</i> | 17 | 39183145 | 39183145 | A | G | nonsynonymous | NM_031957 | c.T263C | p.I88T |
| 309 | BLOOD | <i>NCOR1</i> | 17 | 16097870 | 16097870 | C | A | nonsynonymous | NM_006311 | c.G14T | p.G5V |
| 30 | BLOOD | <i>CREB3L2</i> | 7 | 137612914 | 137612916 | TGG | - | nonframeshift | NM_194071 | c.299_301del | p.100_101del |
| 30 | BLOOD | <i>KRTAP5-5</i> | 11 | 1651199 | 1651228 | AGGCTGTG GGGGCTGT GGCTCCGG CTGTGC | - | nonframeshift | NM_001001480 | c.129_158del | p.43_53del |
| 30 | BLOOD | <i>SEC24A</i> | 5 | 133984861 | 133984861 | A | G | nonsynonymous | NM_021982 | c.A95G | p.N32S |
| 30 | BLOOD | <i>GAS7</i> | 17 | 9821397 | 9821397 | A | C | nonsynonymous | NM_201433 | c.T1238G | p.V413G |
| 310 | BLOOD | <i>BICD2</i> | 9 | 95526899 | 95526899 | G | A | nonsynonymous | NM_015250 | c.C128T | p.A43V |
| 310 | BLOOD | <i>CYP2A13</i> | 19 | 41595958 | 41595958 | C | T | nonsynonymous | NM_000766 | c.C350T | p.A117V |
| 311 | BLOOD | <i>FAM90A1</i> | 12 | 8374781 | 8374781 | - | ACG | nonframeshift | NM_018088 | c.1031_1032insCGT | p.T344delinsTV |

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|-----|-------|------------------|----|-----------|-----------|--------|--------|---------------|--------------|--------------------------|-----------------|
| 311 | BLOOD | <i>EPN2</i> | 17 | 19237487 | 19237487 | A | G | nonsynonymous | NM_014964 | c.A1846G | p.M616V |
| 311 | BLOOD | <i>KSR1</i> | 17 | 25909824 | 25909824 | C | T | nonsynonymous | NM_014238 | c.C262T | p.P88S |
| 311 | BLOOD | <i>TJP3</i> | 19 | 3750678 | 3750678 | T | C | nonsynonymous | NM_001267560 | c.T2756C | p.L919P |
| 311 | BLOOD | <i>HCFC1</i> | X | 153225776 | 153225776 | T | G | nonsynonymous | NM_005334 | c.A994C | p.T332P |
| 312 | BLOOD | <i>FLG</i> | 1 | 152286518 | 152286518 | C | T | nonsynonymous | NM_002016 | c.G844A | p.V282I |
| 312 | BLOOD | <i>RPIA</i> | 2 | 89036161 | 89036161 | G | A | nonsynonymous | NM_144563 | c.G706A | p.V236M |
| 312 | BLOOD | <i>FBXO9</i> | 6 | 52941288 | 52941288 | G | C | nonsynonymous | NM_012347 | c.G284C | p.R95P |
| 312 | BLOOD | <i>NAB2</i> | 12 | 57485446 | 57485446 | T | C | nonsynonymous | NM_005967 | c.T622C | p.F208L |
| 312 | BLOOD | <i>SERPINF1</i> | 17 | 1670212 | 1670212 | C | T | nonsynonymous | NM_002615 | c.C8T | p.A3V |
| 313 | BLOOD | <i>TUBGCP3</i> | 13 | 113201846 | 113201846 | A | T | nonsynonymous | NM_001286279 | c.T1256A | p.V419D |
| 314 | BLOOD | <i>DNASE2B</i> | 1 | 84874123 | 84874125 | AAC | - | nonframeshift | NM_021233 | c.307_309del | p.103_103del |
| 314 | BLOOD | <i>MYLK</i> | 3 | 123419117 | 123419119 | TTC | - | nonframeshift | NM_053025 | c.3196_3198del | p.1066_1066del |
| 314 | BLOOD | <i>APLP2</i> | 11 | 129991653 | 129991658 | GAAGAG | - | nonframeshift | NM_001642 | c.661_666del | p.221_222del |
| 314 | BLOOD | <i>ACINI</i> | 14 | 23548783 | 23548783 | - | GAACGT | nonframeshift | NM_014977 | c.1934_1935insACG TTC | p.S645delinsSRS |
| 314 | BLOOD | <i>ACINI</i> | 14 | 23549879 | 23549881 | TCC | - | nonframeshift | NM_014977 | c.837_839del | p.279_280del |
| 314 | BLOOD | <i>FAM83G</i> | 17 | 18874685 | 18874685 | - | GGT | nonframeshift | NM_001039999 | c.2458_2459insACC | p.R820delinsHR |
| 314 | BLOOD | <i>HRC</i> | 19 | 49657758 | 49657760 | TCT | - | nonframeshift | NM_002152 | c.735_737del | p.245_246del |
| 314 | BLOOD | <i>TNFRSF25</i> | 1 | 6525593 | 6525593 | G | A | nonsynonymous | NM_003790 | c.C67T | p.R23W |
| 314 | BLOOD | <i>PRAMEF1</i> | 1 | 12855844 | 12855844 | G | A | nonsynonymous | NM_023013 | c.G1124A | p.R375Q |
| 314 | BLOOD | <i>PRAMEF2</i> | 1 | 12921252 | 12921252 | C | T | nonsynonymous | NM_023014 | c.C1043T | p.A348V |
| 314 | BLOOD | <i>CATSPER4</i> | 1 | 26526545 | 26526545 | G | T | nonsynonymous | NM_198137 | c.G983T | p.S328I |
| 314 | BLOOD | <i>KIAA0319L</i> | 1 | 35944780 | 35944780 | T | C | nonsynonymous | NM_024874 | c.A700G | p.T234A |
| 314 | BLOOD | <i>KLF17</i> | 1 | 44584638 | 44584638 | A | G | nonsynonymous | NM_173484 | c.A59G | p.Q20R |
| 314 | BLOOD | <i>PCSK9</i> | 1 | 55509585 | 55509585 | C | T | nonsynonymous | NM_174936 | c.C277T | p.R93C |

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|-----|-------|-----------------|---|-----------|-----------|---|---|---------------|--------------|-----------|----------|
| 314 | BLOOD | <i>GBP7</i> | 1 | 89637432 | 89637432 | T | G | nonsynonymous | NM_207398 | c.A187C | p.K63Q |
| 314 | BLOOD | <i>MUC1</i> | 1 | 155158670 | 155158670 | C | A | nonsynonymous | NM_001204286 | c.G1396T | p.G466C |
| 314 | BLOOD | <i>NRP2</i> | 2 | 206590720 | 206590720 | G | A | nonsynonymous | NM_003872 | c.G904A | p.G302R |
| 314 | BLOOD | <i>SAG</i> | 2 | 234255507 | 234255507 | T | A | nonsynonymous | NM_000541 | c.T1167A | p.D389E |
| 314 | BLOOD | <i>USP40</i> | 2 | 234449382 | 234449382 | C | T | nonsynonymous | NM_018218 | c.G1129A | p.G377S |
| 314 | BLOOD | <i>CAND2</i> | 3 | 12869077 | 12869077 | G | A | nonsynonymous | NM_001162499 | c.G3349A | p.G1117R |
| 314 | BLOOD | <i>IQSEC1</i> | 3 | 12949999 | 12949999 | C | T | nonsynonymous | NM_014869 | c.G2647A | p.V883M |
| 314 | BLOOD | <i>CCDC80</i> | 3 | 112358604 | 112358604 | C | T | nonsynonymous | NM_199511 | c.G149A | p.R50Q |
| 314 | BLOOD | <i>B4GALT4</i> | 3 | 118945795 | 118945795 | T | C | nonsynonymous | NM_003778 | c.A347G | p.Q116R |
| 314 | BLOOD | <i>KY</i> | 3 | 134329221 | 134329221 | C | T | nonsynonymous | NM_178554 | c.G715A | p.A239T |
| 314 | BLOOD | <i>TMEM128</i> | 4 | 4242082 | 4242082 | T | G | nonsynonymous | NM_001297551 | c.A364C | p.I122L |
| 314 | BLOOD | <i>ADGRL3</i> | 4 | 62761545 | 62761545 | C | T | nonsynonymous | NM_015236 | c.C1676T | p.T559I |
| 314 | BLOOD | <i>ZGRF1</i> | 4 | 113462397 | 113462397 | G | C | nonsynonymous | NM_018392 | c.C5626G | p.Q1876E |
| 314 | BLOOD | <i>KIAA1109</i> | 4 | 123160682 | 123160682 | A | G | nonsynonymous | NM_015312 | c.A3845G | p.E1282G |
| 314 | BLOOD | <i>FAT1</i> | 4 | 187509861 | 187509861 | G | C | nonsynonymous | NM_005245 | c.C13652G | p.A4551G |
| 314 | BLOOD | <i>SPEF2</i> | 5 | 35779421 | 35779421 | G | A | nonsynonymous | NM_024867 | c.G4420A | p.D1474N |
| 314 | BLOOD | <i>FAM65B</i> | 6 | 24848265 | 24848265 | G | C | nonsynonymous | NM_014722 | c.C1065G | p.D355E |
| 314 | BLOOD | <i>HLA-DRB1</i> | 6 | 32549452 | 32549452 | C | G | nonsynonymous | NM_002124 | c.G534C | p.Q178H |
| 314 | BLOOD | <i>HLA-DRB1</i> | 6 | 32549475 | 32549475 | T | C | nonsynonymous | NM_002124 | c.A511G | p.M171V |
| 314 | BLOOD | <i>HLA-DRB1</i> | 6 | 32549481 | 32549481 | C | T | nonsynonymous | NM_002124 | c.G505A | p.A169T |
| 314 | BLOOD | <i>HLA-DRB1</i> | 6 | 32549589 | 32549589 | A | C | nonsynonymous | NM_002124 | c.T397G | p.S133A |
| 314 | BLOOD | <i>HLA-DRB1</i> | 6 | 32549611 | 32549611 | T | A | nonsynonymous | NM_002124 | c.A375T | p.Q125H |
| 314 | BLOOD | <i>HLA-DQB1</i> | 6 | 32629935 | 32629935 | C | G | nonsynonymous | NM_001243961 | c.G470C | p.G157A |
| 314 | BLOOD | <i>HLA-DQB2</i> | 6 | 32725559 | 32725559 | C | T | nonsynonymous | NM_001300790 | c.G748A | p.G250S |
| 314 | BLOOD | <i>DNAH8</i> | 6 | 38980087 | 38980087 | C | T | nonsynonymous | NM_001206927 | c.C13468T | p.R4490C |

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|-----|-------|------------------|----|-----------|-----------|---|---|---------------|--------------|----------|----------|
| 314 | BLOOD | <i>TREM2</i> | 6 | 41130802 | 41130802 | G | A | nonsynonymous | NM_018965 | c.C19T | p.L7F |
| 314 | BLOOD | <i>ADGRF4</i> | 6 | 47682206 | 47682206 | C | T | nonsynonymous | NM_153838 | c.C1225T | p.L409F |
| 314 | BLOOD | <i>AKAP12</i> | 6 | 151670430 | 151670430 | C | G | nonsynonymous | NM_005100 | c.C904G | p.Q302E |
| 314 | BLOOD | <i>IRF5</i> | 7 | 128586610 | 128586610 | G | T | nonsynonymous | NM_001098630 | c.G441T | p.E147D |
| 314 | BLOOD | <i>NEIL2</i> | 8 | 11637401 | 11637401 | G | A | nonsynonymous | NM_145043 | c.G433A | p.D145N |
| 314 | BLOOD | <i>USP17L7</i> | 8 | 11990617 | 11990617 | C | A | nonsynonymous | NM_001256869 | c.G902T | p.R301L |
| 314 | BLOOD | <i>IFNW1</i> | 9 | 21141287 | 21141287 | G | T | nonsynonymous | NM_002177 | c.C283A | p.R95S |
| 314 | BLOOD | <i>ARID3C</i> | 9 | 34627824 | 34627824 | C | A | nonsynonymous | NM_001017363 | c.G188T | p.R63L |
| 314 | BLOOD | <i>GLIPR2</i> | 9 | 36162461 | 36162461 | C | T | nonsynonymous | NM_022343 | c.C407T | p.A136V |
| 314 | BLOOD | <i>SPATA31C1</i> | 9 | 90538288 | 90538288 | C | T | stopgain | NM_001145124 | c.C3466T | p.R1156X |
| 314 | BLOOD | <i>PTCH1</i> | 9 | 98211449 | 98211449 | C | A | stopgain | NM_000264 | c.G3706T | p.E1236X |
| 314 | BLOOD | <i>ADAMTS13</i> | 9 | 136302050 | 136302050 | G | T | nonsynonymous | NM_139025 | c.G1410T | p.W470C |
| 314 | BLOOD | <i>TRPM5</i> | 11 | 2434018 | 2434018 | C | A | nonsynonymous | NM_014555 | c.G2321T | p.W774L |
| 314 | BLOOD | <i>OR52B2</i> | 11 | 6191109 | 6191109 | C | T | nonsynonymous | NM_001004052 | c.G448A | p.V150I |
| 314 | BLOOD | <i>SAALI</i> | 11 | 18127465 | 18127465 | C | A | stopgain | NM_138421 | c.G124T | p.G42X |
| 314 | BLOOD | <i>CNTN5</i> | 11 | 99690428 | 99690428 | T | G | nonsynonymous | NM_014361 | c.T209G | p.L70R |
| 314 | BLOOD | <i>CNTN5</i> | 11 | 99690461 | 99690461 | A | G | nonsynonymous | NM_014361 | c.A242G | p.N81S |
| 314 | BLOOD | <i>NFRKB</i> | 11 | 129752427 | 129752427 | G | A | nonsynonymous | NM_001143835 | c.C1001T | p.A334V |
| 314 | BLOOD | <i>DTX3</i> | 12 | 58001001 | 58001001 | C | A | nonsynonymous | NM_178502 | c.C355A | p.R119S |
| 314 | BLOOD | <i>SOCS2</i> | 12 | 93966710 | 93966710 | G | T | nonsynonymous | NM_001270471 | c.G37T | p.G13W |
| 314 | BLOOD | <i>BTBD6</i> | 14 | 105716290 | 105716290 | G | A | nonsynonymous | NM_033271 | c.G739A | p.V247M |
| 314 | BLOOD | <i>LINGO1</i> | 15 | 77907884 | 77907884 | C | A | nonsynonymous | NM_032808 | c.G365T | p.R122L |
| 314 | BLOOD | <i>MVD</i> | 16 | 88721784 | 88721784 | C | A | nonsynonymous | NM_002461 | c.G720T | p.M240I |
| 314 | BLOOD | <i>CLUH</i> | 17 | 2607699 | 2607699 | G | T | nonsynonymous | NM_015229 | c.C146A | p.S49Y |
| 314 | BLOOD | <i>KDM6B</i> | 17 | 7752830 | 7752830 | G | T | nonsynonymous | NM_001080424 | c.G3224T | p.R1075L |

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|-----|-------|----------------|----|----------|----------|---|---|---------------|--------------|----------|----------|
| 314 | BLOOD | <i>TRIM16</i> | 17 | 15539387 | 15539387 | C | G | nonsynonymous | NM_006470 | c.G812C | p.R271T |
| 314 | BLOOD | <i>ABI3</i> | 17 | 47294040 | 47294040 | C | A | nonsynonymous | NM_016428 | c.C265A | p.R89S |
| 314 | BLOOD | <i>CBX8</i> | 17 | 77768741 | 77768741 | C | A | nonsynonymous | NM_020649 | c.G863T | p.R288M |
| 314 | BLOOD | <i>FASN</i> | 17 | 80044231 | 80044231 | C | A | stopgain | NM_004104 | c.G3631T | p.E1211X |
| 314 | BLOOD | <i>TAF4B</i> | 18 | 23866011 | 23866011 | A | G | nonsynonymous | NM_005640 | c.A1138G | p.I380V |
| 314 | BLOOD | <i>WDR18</i> | 19 | 994246 | 994246 | G | A | nonsynonymous | NM_024100 | c.G1202A | p.R401H |
| 314 | BLOOD | <i>PRR22</i> | 19 | 5784025 | 5784025 | C | T | nonsynonymous | NM_001134316 | c.G233A | p.R78H |
| 314 | BLOOD | <i>PKN1</i> | 19 | 14578443 | 14578443 | G | A | nonsynonymous | NM_002741 | c.G1798A | p.A600T |
| 314 | BLOOD | <i>CYP4F12</i> | 19 | 15806783 | 15806783 | G | A | nonsynonymous | NM_023944 | c.G1153A | p.V385M |
| 314 | BLOOD | <i>NWD1</i> | 19 | 16860573 | 16860573 | G | T | nonsynonymous | NM_001290355 | c.G715T | p.G239W |
| 314 | BLOOD | <i>NR2C2AP</i> | 19 | 19313342 | 19313342 | G | A | nonsynonymous | NM_176880 | c.C172T | p.R58C |
| 314 | BLOOD | <i>ZNF737</i> | 19 | 20727797 | 20727797 | T | A | nonsynonymous | NM_001159293 | c.A1212T | p.E404D |
| 314 | BLOOD | <i>IGFLR1</i> | 19 | 36231375 | 36231375 | G | T | nonsynonymous | NM_024660 | c.C248A | p.P83H |
| 314 | BLOOD | <i>ZNF540</i> | 19 | 38104004 | 38104004 | A | C | nonsynonymous | NM_152606 | c.A1823C | p.E608A |
| 314 | BLOOD | <i>IFNL1</i> | 19 | 39788736 | 39788736 | C | T | nonsynonymous | NM_172140 | c.C382T | p.L128F |
| 314 | BLOOD | <i>LRFNI</i> | 19 | 39798671 | 39798671 | C | A | stopgain | NM_020862 | c.G1918T | p.G640X |
| 314 | BLOOD | <i>PSG8</i> | 19 | 43257517 | 43257517 | G | A | nonsynonymous | NM_001130167 | c.C1255T | p.P419S |
| 314 | BLOOD | <i>IRGC</i> | 19 | 44224085 | 44224085 | G | C | nonsynonymous | NM_019612 | c.G1375C | p.D459H |
| 314 | BLOOD | <i>SULT2B1</i> | 19 | 49079224 | 49079224 | G | A | nonsynonymous | NM_177973 | c.G98A | p.R33Q |
| 314 | BLOOD | <i>NTN5</i> | 19 | 49167929 | 49167929 | G | A | nonsynonymous | NM_145807 | c.C727T | p.R243C |
| 314 | BLOOD | <i>ZNF160</i> | 19 | 53578330 | 53578330 | T | C | nonsynonymous | NM_001102603 | c.A122G | p.Y41C |
| 314 | BLOOD | <i>LILRB1</i> | 19 | 55148004 | 55148004 | A | T | nonsynonymous | NM_006669 | c.A1707T | p.R569S |
| 314 | BLOOD | <i>CTSZ</i> | 20 | 57570775 | 57570775 | T | C | nonsynonymous | NM_001336 | c.A841G | p.K281E |
| 314 | BLOOD | <i>TUBB1</i> | 20 | 57599090 | 57599090 | A | G | nonsynonymous | NM_030773 | c.A608G | p.D203G |
| 314 | BLOOD | <i>DIDO1</i> | 20 | 61542195 | 61542195 | G | A | nonsynonymous | NM_033081 | c.C770T | p.P257L |

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|-----|-------|-----------------|----|-----------|-----------|----------------------------------|--------|---------------|--------------|--------------------------|-----------------|
| 314 | BLOOD | <i>INPP5J</i> | 22 | 31522961 | 31522961 | C | A | nonsynonymous | NM_001284285 | c.C1549A | p.H517N |
| 314 | BLOOD | <i>PPP2R3B</i> | X | 299360 | 299360 | G | A | nonsynonymous | NM_013239 | c.C1556T | p.A519V |
| 314 | BLOOD | <i>ARSD</i> | X | 2835863 | 2835863 | G | T | nonsynonymous | NM_001669 | c.C845A | p.A282D |
| 314 | BLOOD | <i>ARSD</i> | X | 2835989 | 2835989 | A | C | nonsynonymous | NM_001669 | c.T719G | p.F240C |
| 314 | BLOOD | <i>PLXNB3</i> | X | 153044486 | 153044486 | G | T | nonsynonymous | NM_005393 | c.G5722T | p.D1908Y |
| 31 | BLOOD | <i>MCC</i> | 5 | 112824048 | 112824048 | - | GCC | nonframeshift | NM_001085377 | c.63_64insGGC | p.S22delinsGS |
| 31 | BLOOD | <i>CCDC180</i> | 9 | 100092968 | 100092968 | - | GAGGAG | nonframeshift | NM_020893 | c.2325_2326insGAG GAG | p.E775delinsEEE |
| 31 | BLOOD | <i>ABCA1</i> | 9 | 107556793 | 107556793 | - | A | splicing | NM_005502 | c.5383-2->T | |
| 31 | BLOOD | <i>TFAM</i> | 10 | 60148570 | 60148570 | A | - | frameshift | NM_003201 | c.432delA | p.T144fs |
| 31 | BLOOD | <i>CASZ1</i> | 1 | 10713892 | 10713892 | G | A | nonsynonymous | NM_001079843 | c.C2222T | p.S741F |
| 31 | BLOOD | <i>BMP8A</i> | 1 | 39988084 | 39988084 | G | A | nonsynonymous | NM_181809 | c.G878A | p.R293H |
| 31 | BLOOD | <i>KCNH7</i> | 2 | 163256779 | 163256779 | C | T | nonsynonymous | NM_033272 | c.G2327A | p.G776E |
| 31 | BLOOD | <i>PDE11A</i> | 2 | 178494163 | 178494163 | A | G | nonsynonymous | NM_016953 | c.T2774C | p.V925A |
| 31 | BLOOD | <i>ERC2</i> | 3 | 56026188 | 56026188 | C | T | nonsynonymous | NM_015576 | c.G2152A | p.E718K |
| 31 | BLOOD | <i>MAP3K1</i> | 5 | 56155570 | 56155570 | A | T | nonsynonymous | NM_005921 | c.A662T | p.D221V |
| 31 | BLOOD | <i>PEX12</i> | 17 | 33902958 | 33902958 | C | T | nonsynonymous | NM_000286 | c.G923A | p.R308H |
| 31 | BLOOD | <i>CLTCL1</i> | 22 | 19213150 | 19213150 | C | A | nonsynonymous | NM_007098 | c.G1954T | p.V652F |
| 327 | BLOOD | <i>TFAP2A</i> | 6 | 10410466 | 10410466 | T | G | nonsynonymous | NM_003220 | c.A148C | p.N50H |
| 327 | BLOOD | <i>HLA-DQB2</i> | 6 | 32725559 | 32725559 | C | T | nonsynonymous | NM_001300790 | c.G748A | p.G250S |
| 327 | BLOOD | <i>ABCC11</i> | 16 | 48234381 | 48234381 | G | A | nonsynonymous | NM_033151 | c.C1888T | p.R630W |
| 327 | BLOOD | <i>RAD51C</i> | 17 | 56798128 | 56798128 | A | G | nonsynonymous | NM_058216 | c.A859G | p.T287A |
| 328 | BLOOD | <i>ZNF358</i> | 19 | 7585338 | 7585364 | GCAGCTGC CGCGGCCG CTGCAGCT | - | nonframeshift | NM_018083 | c.1210_1236del | p.404_412del |

| | | | | | | GCA | | | | | |
|-----|-------|-----------------|----|-----------|-----------|-------------------------------|---|---------------|--------------|----------------|--------------|
| 328 | BLOOD | <i>RBM15B</i> | 3 | 51429578 | 51429578 | C | T | nonsynonymous | NM_013286 | c.C748T | p.L250F |
| 328 | BLOOD | <i>PARP4</i> | 13 | 25021263 | 25021263 | T | C | nonsynonymous | NM_006437 | c.A3176G | p.Q1059R |
| 328 | BLOOD | <i>PARP4</i> | 13 | 25021323 | 25021323 | A | G | nonsynonymous | NM_006437 | c.T3116C | p.I1039T |
| 328 | BLOOD | <i>ARSD</i> | X | 2836041 | 2836041 | A | T | nonsynonymous | NM_001669 | c.T667A | p.F223I |
| 328 | BLOOD | <i>ARSD</i> | X | 2836047 | 2836047 | C | T | nonsynonymous | NM_001669 | c.G661A | p.G221S |
| 328 | BLOOD | <i>RBMX</i> | X | 135960230 | 135960230 | C | T | nonsynonymous | NM_002139 | c.G232A | p.A78T |
| 32 | BLOOD | <i>TUBGCP3</i> | 13 | 113201853 | 113201867 | TGGGAAAG TCGCGCG | - | nonframeshift | NM_001286279 | c.1235_1249del | p.412_417del |
| 32 | BLOOD | <i>VCX2</i> | X | 8138165 | 8138168 | CCTC | - | frameshift | NM_016378 | c.325_328del | p.E109fs |
| 32 | BLOOD | <i>KRT1</i> | 12 | 53069236 | 53069256 | TAGCTGCT ACCTCCGG AGCCA | - | nonframeshift | NM_006121 | c.1656_1676del | p.552_559del |
| 32 | BLOOD | <i>CDC27</i> | 17 | 45234707 | 45234707 | T | A | nonsynonymous | NM_001256 | c.A519T | p.L173F |
| 32 | BLOOD | <i>C5AR2</i> | 19 | 47845035 | 47845035 | A | C | nonsynonymous | NM_001271749 | c.A979C | p.T327P |
| 332 | BLOOD | <i>MIR205HG</i> | 1 | 209605637 | 209605648 | AGCAGCAG CAGC | - | nonframeshift | NM_001104548 | c.252_263del | p.84_88del |
| 332 | BLOOD | <i>CCDC150</i> | 2 | 197531519 | 197531519 | A | - | frameshift | NM_001080539 | c.839delA | p.Q280fs |
| 332 | BLOOD | <i>TMIE</i> | 3 | 46751074 | 46751076 | AAG | - | nonframeshift | NM_147196 | c.367_369del | p.123_123del |
| 332 | BLOOD | <i>CDKN2AIP</i> | 4 | 184367559 | 184367561 | CTG | - | nonframeshift | NM_017632 | c.722_724del | p.241_242del |
| 332 | BLOOD | <i>PDCD6</i> | 5 | 271858 | 271869 | CCGGCCCT GGGG | - | nonframeshift | NM_013232 | c.23_34del | p.8_12del |
| 332 | BLOOD | <i>LRRC47</i> | 1 | 3697871 | 3697871 | T | A | nonsynonymous | NM_020710 | c.A1533T | p.L511F |
| 332 | BLOOD | <i>MAP1LC3C</i> | 1 | 242159614 | 242159614 | C | T | nonsynonymous | NM_001004343 | c.G295A | p.A99T |

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|-----|-------|------------------|----|-----------|-----------|--------|-----|---------------|--------------|-------------------|----------------|
| 332 | BLOOD | <i>OR2M4</i> | 1 | 248403015 | 248403015 | C | A | nonsynonymous | NM_017504 | c.C785A | p.P262Q |
| 332 | BLOOD | <i>PLEKHM3</i> | 2 | 208842185 | 208842185 | C | T | nonsynonymous | NM_001080475 | c.G736A | p.D246N |
| 332 | BLOOD | <i>MYLK</i> | 3 | 123441125 | 123441125 | G | A | stopgain | NM_053025 | c.C1654T | p.Q552X |
| 332 | BLOOD | <i>NAAA</i> | 4 | 76862005 | 76862005 | G | A | nonsynonymous | NM_014435 | c.C98T | p.A33V |
| 332 | BLOOD | <i>DHX16</i> | 6 | 30632655 | 30632655 | T | C | nonsynonymous | NM_003587 | c.A1240G | p.N414D |
| 332 | BLOOD | <i>VAR5</i> | 6 | 31759741 | 31759741 | A | C | nonsynonymous | NM_006295 | c.T879G | p.S293R |
| 332 | BLOOD | <i>HLA-DRB1</i> | 6 | 32549525 | 32549525 | C | G | nonsynonymous | NM_002124 | c.G461C | p.G154A |
| 332 | BLOOD | <i>TMEM252</i> | 9 | 71152343 | 71152343 | C | G | nonsynonymous | NM_153237 | c.G345C | p.E115D |
| 332 | BLOOD | <i>SPATA31E1</i> | 9 | 90503370 | 90503370 | T | C | nonsynonymous | NM_178828 | c.T3968C | p.V1323A |
| 332 | BLOOD | <i>CDK5RAP2</i> | 9 | 123169523 | 123169523 | G | A | nonsynonymous | NM_018249 | c.C4730T | p.A1577V |
| 332 | BLOOD | <i>FAM179B</i> | 14 | 45431734 | 45431734 | G | T | nonsynonymous | NM_015091 | c.G110T | p.R37L |
| 332 | BLOOD | <i>CDC27</i> | 17 | 45249328 | 45249328 | G | A | nonsynonymous | NM_001256 | c.C206T | p.P69L |
| 332 | BLOOD | <i>CLTCL1</i> | 22 | 19196578 | 19196578 | G | A | nonsynonymous | NM_007098 | c.C3296T | p.A1099V |
| 332 | BLOOD | <i>CLTCL1</i> | 22 | 19263266 | 19263266 | C | A | nonsynonymous | NM_007098 | c.G130T | p.V44F |
| 332 | BLOOD | <i>ARSD</i> | X | 2836041 | 2836041 | A | T | nonsynonymous | NM_001669 | c.T667A | p.F223I |
| 332 | BLOOD | <i>ARSD</i> | X | 2836047 | 2836047 | C | T | nonsynonymous | NM_001669 | c.G661A | p.G221S |
| 332 | BLOOD | <i>ZMYM3</i> | X | 70466326 | 70466326 | T | G | nonsynonymous | NM_001171162 | c.A2413C | p.T805P |
| 333 | BLOOD | <i>GTF3C3</i> | 2 | 197657762 | 197657762 | TCCTCC | - | nonframeshift | NM_012086 | c.324_329del | p.108_110del |
| 333 | BLOOD | <i>FAM90A1</i> | 12 | 8374781 | 8374781 | - | ACG | nonframeshift | NM_018088 | c.1031_1032insCGT | p.T344delinsTV |
| 333 | BLOOD | <i>LTN1</i> | 21 | 30339206 | 30339206 | T | - | frameshift | NM_015565 | c.1745delA | p.N582fs |
| 334 | BLOOD | <i>ZNF384</i> | 12 | 6777070 | 6777072 | TGC | - | nonframeshift | NM_001135734 | c.1542_1544del | p.514_515del |
| 334 | BLOOD | <i>BRD4</i> | 19 | 15349924 | 15349924 | G | T | nonsynonymous | NM_058243 | c.C3728A | p.A1243D |
| 334 | BLOOD | <i>MCAT</i> | 22 | 43538949 | 43538949 | G | A | nonsynonymous | NM_173467 | c.C406T | p.H136Y |
| 335 | BLOOD | <i>CIZ1</i> | 9 | 130928619 | 130928619 | C | A | nonsynonymous | NM_001131016 | c.G2554T | p.A852S |
| 336 | BLOOD | <i>FAM90A1</i> | 12 | 8374781 | 8374781 | - | ACG | nonframeshift | NM_018088 | c.1031_1032insCGT | p.T344delinsTV |

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|-----|-------|-----------------|----|-----------|-----------|--|-------------------------|---------------|--------------|---------------------------------|-----------------------|
| 336 | BLOOD | <i>NCOR2</i> | 12 | 124824721 | 124824721 | - | GCCGCTG CT | nonframeshift | NM_006312 | c.5517_5518insAGC AGCGGC | p.G1840delinsSS GG |
| 336 | BLOOD | <i>NPEPPS</i> | 17 | 45669428 | 45669428 | - | A | splicing | NM_006310 | c.1365+2->A | |
| 336 | BLOOD | <i>ZNF283</i> | 19 | 44351167 | 44351172 | GGAGAT | - | frameshift | NM_001297752 | | |
| 336 | BLOOD | <i>FBXO2</i> | 1 | 11710745 | 11710745 | G | A | nonsynonymous | NM_012168 | c.C169T | p.R57C |
| 336 | BLOOD | <i>NPIPA5</i> | 16 | 15457598 | 15457598 | G | A | nonsynonymous | NM_001277325 | c.C971T | p.A324V |
| 337 | BLOOD | <i>SATB1</i> | 3 | 18391132 | 18391132 | - | CTG | nonframeshift | NM_002971 | c.1821_1822insCAG | p.A608delinsQA |
| 337 | BLOOD | <i>MUC4</i> | 3 | 195505788 | 195505788 | G | C | nonsynonymous | NM_018406 | c.C12663G | p.H4221Q |
| 337 | BLOOD | <i>AFAP1L1</i> | 5 | 148702269 | 148702269 | G | A | nonsynonymous | NM_152406 | c.G1799A | p.R600H |
| 338 | BLOOD | <i>MCC</i> | 5 | 112824048 | 112824048 | - | GCC | nonframeshift | NM_001085377 | c.63_64insGGC | p.S22delinsGS |
| 338 | BLOOD | <i>SETSIP</i> | 1 | 92540911 | 92540911 | G | A | nonsynonymous | NM_001287737 | c.C88T | p.P30S |
| 339 | BLOOD | <i>ARID3A</i> | 19 | 932467 | 932469 | GAG | - | nonframeshift | NM_005224 | c.418_420del | p.140_140del |
| 339 | BLOOD | <i>UPK3B</i> | 7 | 76140307 | 76140307 | G | C | nonsynonymous | NM_030570 | c.G338C | p.C113S |
| 33 | BLOOD | <i>MIR205HG</i> | 1 | 209605637 | 209605648 | AGCAGCAG CAGC | - | nonframeshift | NM_001104548 | c.252_263del | p.84_88del |
| 33 | BLOOD | <i>KRTAP5-1</i> | 11 | 1606121 | 1606150 | CCACAGCC ACCCTTGG ATCCCCCA CAAGAG | - | nonframeshift | NM_001005922 | c.330_359del | p.110_120del |
| 33 | BLOOD | <i>WDR66</i> | 12 | 122359397 | 122359397 | - | GAGGAGG AGGAGAA A | nonframeshift | NM_144668 | c.186_187insGAGGA GGAGGAGAAA | p.G62delinsGEEE EK |
| 33 | BLOOD | <i>QRICH2</i> | 17 | 74288565 | 74288567 | TGA | - | nonframeshift | NM_032134 | c.1743_1745del | p.581_582del |
| 33 | BLOOD | <i>SMYD1</i> | 2 | 88387407 | 88387407 | T | G | nonsynonymous | NM_198274 | c.T341G | p.V114G |
| 33 | BLOOD | <i>SSPO</i> | 7 | 149475903 | 149475903 | T | G | nonsynonymous | NM_198455 | c.T869G | p.V290G |

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|-----|-------|------------------|----|-----------|-----------|---|-------------------------|---------------|--------------|---------------------------------|-----------------------|
| 33 | BLOOD | <i>MYO7A</i> | 11 | 76885802 | 76885802 | C | A | nonsynonymous | NM_001127180 | c.C1936A | p.L646M |
| 33 | BLOOD | <i>DDX10</i> | 11 | 108593806 | 108593806 | C | A | nonsynonymous | NM_004398 | c.C1582A | p.Q528K |
| 33 | BLOOD | <i>KCNJ18</i> | 17 | 21319560 | 21319560 | G | T | nonsynonymous | NM_021012 | c.G906T | p.M302I |
| 33 | BLOOD | <i>EPN3</i> | 17 | 48615458 | 48615458 | G | T | nonsynonymous | NM_017957 | c.G581T | p.R194L |
| 340 | BLOOD | <i>KRTAP4-5</i> | 17 | 39305775 | 39305775 | - | GGCAGCA GCTGGGG C | nonframeshift | NM_033188 | c.244_245insGCCCC AGCTGCTGCC | p.Q82delinsRPSC CQ |
| 340 | BLOOD | <i>RBMX</i> | X | 135960146 | 135960146 | - | AA | frameshift | NM_002139 | c.315_316insTT | p.P106fs |
| 340 | BLOOD | <i>CNTN5</i> | 11 | 99690428 | 99690428 | T | G | nonsynonymous | NM_014361 | c.T209G | p.L70R |
| 340 | BLOOD | <i>ABCA3</i> | 16 | 2369592 | 2369592 | C | T | nonsynonymous | NM_001089 | c.G863A | p.R288K |
| 340 | BLOOD | <i>KRTAP4-9</i> | 17 | 39261693 | 39261693 | A | T | nonsynonymous | NM_001146041 | c.A53T | p.D18V |
| 340 | BLOOD | <i>KRTAP4-11</i> | 17 | 39274364 | 39274364 | T | G | nonsynonymous | NM_033059 | c.A204C | p.R68S |
| 340 | BLOOD | <i>TMPRSS9</i> | 19 | 2425128 | 2425128 | A | G | nonsynonymous | NM_182973 | c.A2744G | p.D915G |
| 340 | BLOOD | <i>RPL13A</i> | 19 | 49993126 | 49993126 | G | A | nonsynonymous | NM_012423 | c.G35A | p.R12Q |
| 340 | BLOOD | <i>ZNF71</i> | 19 | 57133190 | 57133190 | G | A | nonsynonymous | NM_021216 | c.G535A | p.V179M |
| 340 | BLOOD | <i>ZNF71</i> | 19 | 57133191 | 57133191 | T | C | nonsynonymous | NM_021216 | c.T536C | p.V179A |
| 340 | BLOOD | <i>RBMX</i> | X | 135958730 | 135958730 | C | A | nonsynonymous | NM_002139 | c.G473T | p.G158V |
| 340 | BLOOD | <i>RBMX</i> | X | 135960119 | 135960119 | C | T | nonsynonymous | NM_002139 | c.G343A | p.G115R |
| 341 | BLOOD | <i>PRAMEF1</i> | 1 | 12854105 | 12854105 | A | G | nonsynonymous | NM_023013 | c.A329G | p.E110G |
| 341 | BLOOD | <i>JMJD4</i> | 1 | 227920199 | 227920199 | A | G | nonsynonymous | NM_023007 | c.T1286C | p.V429A |
| 341 | BLOOD | <i>RFX3</i> | 9 | 3330423 | 3330423 | T | C | nonsynonymous | NM_134428 | c.A310G | p.T104A |
| 341 | BLOOD | <i>EXOSC3</i> | 9 | 37780872 | 37780872 | A | G | nonsynonymous | NM_016042 | c.T632C | p.L211S |
| 341 | BLOOD | <i>SPHK1</i> | 17 | 74381601 | 74381601 | A | G | nonsynonymous | NM_182965 | c.A134G | p.H45R |
| 341 | BLOOD | <i>SNPH</i> | 20 | 1286058 | 1286058 | G | T | nonsynonymous | NM_014723 | c.G845T | p.G282V |
| 341 | BLOOD | <i>ASXL1</i> | 20 | 31022784 | 31022784 | C | T | stopgain | NM_015338 | c.C2269T | p.Q757X |

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|-----|-------|-----------------|----|-----------|-----------|---|-----|---------------|--------------|-------------------|----------------|
| 341 | BLOOD | <i>ARSD</i> | X | 2836181 | 2836181 | A | T | nonsynonymous | NM_001669 | c.T527A | p.M176K |
| 341 | BLOOD | <i>ARSD</i> | X | 2836184 | 2836184 | C | T | nonsynonymous | NM_001669 | c.G524A | p.G175D |
| 341 | BLOOD | <i>ARSD</i> | X | 2836211 | 2836211 | A | T | nonsynonymous | NM_001669 | c.T497A | p.L166Q |
| 341 | BLOOD | <i>CCNB3</i> | X | 50053156 | 50053156 | G | T | stopgain | NM_033031 | c.G1987T | p.E663X |
| 342 | BLOOD | <i>PLAC4</i> | 21 | 42551222 | 42551222 | T | G | nonsynonymous | NM_182832 | c.A334C | p.I112L |
| 342 | BLOOD | <i>ARSD</i> | X | 2836184 | 2836184 | C | T | nonsynonymous | NM_001669 | c.G524A | p.G175D |
| 342 | BLOOD | <i>ARSD</i> | X | 2836211 | 2836211 | A | T | nonsynonymous | NM_001669 | c.T497A | p.L166Q |
| 343 | BLOOD | <i>CNTNAP3B</i> | 9 | 43822686 | 43822686 | C | A | nonsynonymous | NM_001201380 | c.C1240A | p.R414S |
| 343 | BLOOD | <i>LAMC3</i> | 9 | 133961026 | 133961026 | G | C | nonsynonymous | NM_006059 | c.G4146C | p.R1382S |
| 343 | BLOOD | <i>MLNR</i> | 13 | 49794822 | 49794822 | G | T | nonsynonymous | NM_001507 | c.G349T | p.V117L |
| 344 | BLOOD | <i>CFAP74</i> | 1 | 1900106 | 1900106 | - | CTC | nonframeshift | NM_001080484 | c.1212_1213insGAG | p.K405delinsEK |
| 344 | BLOOD | <i>EFHB</i> | 3 | 19938290 | 19938290 | A | - | frameshift | NM_144715 | c.1614delT | p.L538fs |
| 344 | BLOOD | <i>AIM1L</i> | 1 | 26672578 | 26672578 | G | A | nonsynonymous | NM_001039775 | c.C571T | p.R191W |
| 344 | BLOOD | <i>ALPPL2</i> | 2 | 233272091 | 233272091 | C | T | nonsynonymous | NM_031313 | c.C280T | p.P94S |
| 344 | BLOOD | <i>MUC4</i> | 3 | 195516079 | 195516079 | G | T | nonsynonymous | NM_018406 | c.C2372A | p.A791D |
| 344 | BLOOD | <i>TENM3</i> | 4 | 183601819 | 183601819 | G | C | nonsynonymous | NM_001080477 | c.G1763C | p.G588A |
| 344 | BLOOD | <i>PKD2L2</i> | 5 | 137225197 | 137225197 | G | C | nonsynonymous | NM_001300921 | c.G17C | p.R6P |
| 344 | BLOOD | <i>PCDH1</i> | 5 | 141248736 | 141248736 | C | T | nonsynonymous | NM_001278613 | c.G349A | p.V117M |
| 344 | BLOOD | <i>HLA-C</i> | 6 | 31238909 | 31238909 | G | A | nonsynonymous | NM_002117 | c.C560T | p.T187M |
| 344 | BLOOD | <i>TUBB8</i> | 10 | 94025 | 94025 | T | C | nonsynonymous | NM_177987 | c.A307G | p.K103E |
| 344 | BLOOD | <i>RBMX</i> | X | 135958730 | 135958730 | C | A | nonsynonymous | NM_002139 | c.G473T | p.G158V |
| 344 | BLOOD | <i>RBMX</i> | X | 135960119 | 135960119 | C | T | nonsynonymous | NM_002139 | c.G343A | p.G115R |
| 345 | BLOOD | <i>FBXO36</i> | 2 | 230840959 | 230840959 | A | - | frameshift | NM_174899 | c.99delA | p.V33fs |
| 345 | BLOOD | <i>C2orf57</i> | 2 | 232457968 | 232457968 | C | G | nonsynonymous | NM_152614 | c.C306G | p.S102R |
| 345 | BLOOD | <i>MST1</i> | 3 | 49725034 | 49725034 | T | A | nonsynonymous | NM_020998 | c.A310T | p.T104S |

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|-----|-------|-----------------|----|-----------|-----------|------------------|----|---------------|--------------|----------------|--------------|
| 345 | BLOOD | <i>ACADVL</i> | 17 | 7127674 | 7127674 | G | A | nonsynonymous | NM_000018 | c.G1567A | p.G523R |
| 345 | BLOOD | <i>SRCIN1</i> | 17 | 36715952 | 36715952 | G | A | nonsynonymous | NM_025248 | c.C1894T | p.P632S |
| 345 | BLOOD | <i>MLLT6</i> | 17 | 36875827 | 36875827 | T | C | nonsynonymous | NM_005937 | c.T2000C | p.L667P |
| 345 | BLOOD | <i>ARSD</i> | X | 2836211 | 2836211 | A | T | nonsynonymous | NM_001669 | c.T497A | p.L166Q |
| 347 | BLOOD | <i>SNAPC4</i> | 9 | 139278029 | 139278040 | CTGCTGCC ACTG | - | nonframeshift | NM_003086 | c.1581_1592del | p.527_531del |
| 347 | BLOOD | <i>TSPAN10</i> | 17 | 79614933 | 79614936 | TAAC | - | splicing | | | |
| 347 | BLOOD | <i>PHTF1</i> | 1 | 114281405 | 114281405 | G | A | nonsynonymous | NM_006608 | c.C119T | p.P40L |
| 347 | BLOOD | <i>TPSD1</i> | 16 | 1306971 | 1306971 | A | G | nonsynonymous | NM_012217 | c.A428G | p.H143R |
| 347 | BLOOD | <i>MADCAM1</i> | 19 | 501762 | 501762 | A | C | nonsynonymous | NM_130760 | c.A761C | p.Q254P |
| 347 | BLOOD | <i>ARSD</i> | X | 2836181 | 2836181 | A | T | nonsynonymous | NM_001669 | c.T527A | p.M176K |
| 347 | BLOOD | <i>ARSD</i> | X | 2836184 | 2836184 | C | T | nonsynonymous | NM_001669 | c.G524A | p.G175D |
| 348 | BLOOD | <i>SKA3</i> | 13 | 21729952 | 21729952 | - | AA | splicing | NM_145061 | c.1120-2->TT | |
| 348 | BLOOD | <i>KIF26B</i> | 1 | 245851904 | 245851904 | C | A | nonsynonymous | NM_018012 | c.C5619A | p.S1873R |
| 348 | BLOOD | <i>C9orf172</i> | 9 | 139740328 | 139740328 | C | T | nonsynonymous | NM_001080482 | c.C1462T | p.R488W |
| 348 | BLOOD | <i>C9orf172</i> | 9 | 139740331 | 139740331 | C | T | nonsynonymous | NM_001080482 | c.C1465T | p.R489C |
| 348 | BLOOD | <i>KATNAL1</i> | 13 | 30854289 | 30854289 | A | C | nonsynonymous | NM_032116 | c.T234G | p.I78M |
| 348 | BLOOD | <i>NCOR1</i> | 17 | 16097870 | 16097870 | C | A | nonsynonymous | NM_006311 | c.G14T | p.G5V |
| 348 | BLOOD | <i>KANK3</i> | 19 | 8399837 | 8399837 | C | A | nonsynonymous | NM_198471 | c.G874T | p.G292W |
| 349 | BLOOD | <i>MIR205HG</i> | 1 | 209605637 | 209605648 | AGCAGCAG CAGC | - | nonframeshift | NM_001104548 | c.252_263del | p.84_88del |
| 349 | BLOOD | <i>PCMTD1</i> | 8 | 52732961 | 52732961 | G | A | nonsynonymous | NM_052937 | c.C1024T | p.P342S |
| 349 | BLOOD | <i>GOLGA8M</i> | 15 | 28947425 | 28947425 | G | A | nonsynonymous | NM_001282468 | c.C1658T | p.S553F |
| 349 | BLOOD | <i>GOLGA8M</i> | 15 | 28947426 | 28947426 | A | G | nonsynonymous | NM_001282468 | c.T1657C | p.S553P |
| 34 | BLOOD | <i>OR2T35</i> | 1 | 248801945 | 248801951 | CAGCACG | - | frameshift | NM_001001827 | c.609_615del | p.C203fs |

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|-----|-------|-----------------|----|-----------|-----------|--|-----|---------------|--------------|-------------------|----------------|
| 34 | BLOOD | <i>KRTAP5-1</i> | 11 | 1606121 | 1606150 | CCACAGCC ACCCTTGG ATCCCCCA CAAGAG | - | nonframeshift | NM_001005922 | c.330_359del | p.110_120del |
| 34 | BLOOD | <i>KRTAP5-5</i> | 11 | 1651199 | 1651228 | AGGCTGTG GGGGCTGT GGCTCCGG CTGTGC | - | nonframeshift | NM_001001480 | c.129_158del | p.43_53del |
| 34 | BLOOD | <i>MADCAM1</i> | 19 | 501696 | 501719 | CTCCCGAC ACCACCTC CCCGGAGT | - | nonframeshift | NM_130760 | c.695_718del | p.232_240del |
| 34 | BLOOD | <i>NEU4</i> | 2 | 242757826 | 242757826 | C | A | nonsynonymous | NM_001167602 | c.C907A | p.P303T |
| 34 | BLOOD | <i>DSCC1</i> | 8 | 120867994 | 120867994 | G | C | nonsynonymous | NM_024094 | c.C42G | p.I14M |
| 34 | BLOOD | <i>CDHR5</i> | 11 | 617388 | 617388 | G | A | nonsynonymous | NM_021924 | c.C2501T | p.P834L |
| 34 | BLOOD | <i>ARSD</i> | X | 2833605 | 2833605 | C | T | stopgain | NM_001669 | c.G992A | p.W331X |
| 34 | BLOOD | <i>ARSD</i> | X | 2836181 | 2836181 | A | T | nonsynonymous | NM_001669 | c.T527A | p.M176K |
| 34 | BLOOD | <i>ARSD</i> | X | 2836184 | 2836184 | C | T | nonsynonymous | NM_001669 | c.G524A | p.G175D |
| 350 | BLOOD | <i>ZFPM1</i> | 16 | 88600815 | 88600815 | C | T | nonsynonymous | NM_153813 | c.C2449T | p.H817Y |
| 351 | BLOOD | <i>NADK</i> | 1 | 1684347 | 1684347 | - | CCT | nonframeshift | NM_023018 | c.1336_1337insAGG | p.G446delinsEG |
| 351 | BLOOD | <i>BTNL2</i> | 6 | 32370970 | 32370970 | G | - | frameshift | NM_001304561 | c.451delC | p.H151fs |
| 351 | BLOOD | <i>CYP2D6</i> | 22 | 42522983 | 42522984 | GA | - | frameshift | NM_000106 | c.1184_1185del | p.L395fs |
| 351 | BLOOD | <i>ARHGEF28</i> | 5 | 73048875 | 73048875 | A | G | nonsynonymous | NM_001177693 | c.A323G | p.N108S |
| 351 | BLOOD | <i>VWA8</i> | 13 | 42385421 | 42385421 | C | T | nonsynonymous | NM_015058 | c.G2003A | p.R668Q |
| 351 | BLOOD | <i>HNRNPC</i> | 14 | 21679599 | 21679599 | T | C | nonsynonymous | NM_031314 | c.A803G | p.D268G |
| 351 | BLOOD | <i>HNRNPC</i> | 14 | 21679600 | 21679600 | C | A | nonsynonymous | NM_031314 | c.G802T | p.D268Y |
| 351 | BLOOD | <i>HNRNPC</i> | 14 | 21679620 | 21679620 | G | A | nonsynonymous | NM_031314 | c.C782T | p.A261V |

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|-----|-------|----------------|----|-----------|-----------|-----|---------------|---------------|-----------|-----------------------------|-----------------------|
| 351 | BLOOD | <i>RBMX</i> | X | 135957672 | 135957672 | A | T | nonsynonymous | NM_002139 | c.T614A | p.V205D |
| 351 | BLOOD | <i>RBMX</i> | X | 135957700 | 135957700 | T | C | nonsynonymous | NM_002139 | c.A586G | p.R196G |
| 352 | BLOOD | <i>MFAP4</i> | 17 | 19290122 | 19290122 | - | AGC | nonframeshift | NM_002404 | c.35_36insGCT | p.L12delinsLL |
| 352 | BLOOD | <i>QRICH2</i> | 17 | 74288565 | 74288567 | TGA | - | nonframeshift | NM_032134 | c.1743_1745del | p.581_582del |
| 352 | BLOOD | <i>RP1L1</i> | 8 | 10467628 | 10467628 | G | A | nonsynonymous | NM_178857 | c.C3980T | p.T1327I |
| 352 | BLOOD | <i>NEBL</i> | 10 | 21177128 | 21177128 | G | C | stopgain | NM_006393 | c.C267G | p.Y89X |
| 352 | BLOOD | <i>RTN4RL1</i> | 17 | 1841037 | 1841037 | G | A | nonsynonymous | NM_178568 | c.C79T | p.R27W |
| 352 | BLOOD | <i>TSR1</i> | 17 | 2227572 | 2227572 | G | A | nonsynonymous | NM_018128 | c.C2333T | p.T778I |
| 352 | BLOOD | <i>NDUFV3</i> | 21 | 44324329 | 44324329 | G | A | nonsynonymous | NM_021075 | c.G1207A | p.E403K |
| 352 | BLOOD | <i>ARSD</i> | X | 2833605 | 2833605 | C | T | stopgain | NM_001669 | c.G992A | p.W331X |
| 352 | BLOOD | <i>ARSD</i> | X | 2833638 | 2833638 | C | T | nonsynonymous | NM_001669 | c.G959A | p.G320D |
| 352 | BLOOD | <i>ARSD</i> | X | 2833643 | 2833643 | C | A | nonsynonymous | NM_001669 | c.G954T | p.Q318H |
| 352 | BLOOD | <i>ARSD</i> | X | 2836238 | 2836238 | G | A | nonsynonymous | NM_001669 | c.C470T | p.S157F |
| 352 | BLOOD | <i>TFE3</i> | X | 48896802 | 48896802 | G | A | nonsynonymous | NM_006521 | c.C364T | p.R122W |
| 353 | BLOOD | <i>NCOR2</i> | 12 | 124824721 | 124824721 | - | GCCGCTG CT | nonframeshift | NM_006312 | c.5517_5518insAGC AGCGGC | p.G1840delinsSS GG |
| 353 | BLOOD | <i>ACOT2</i> | 14 | 74041748 | 74041748 | A | G | nonsynonymous | NM_006821 | c.A983G | p.H328R |
| 354 | BLOOD | <i>KAT6B</i> | 10 | 76781906 | 76781908 | GAA | - | nonframeshift | NM_012330 | c.3289_3291del | p.1097_1097del |
| 354 | BLOOD | <i>FAM90A1</i> | 12 | 8374781 | 8374781 | - | ACG | nonframeshift | NM_018088 | c.1031_1032insCGT | p.T344delinsTV |
| 354 | BLOOD | <i>DYDC1</i> | 10 | 82098881 | 82098881 | A | T | nonsynonymous | NM_138812 | c.T371A | p.V124D |
| 354 | BLOOD | <i>EP400</i> | 12 | 132445256 | 132445256 | A | C | nonsynonymous | NM_015409 | c.A92C | p.H31P |
| 354 | BLOOD | <i>ARSD</i> | X | 2836211 | 2836211 | A | T | nonsynonymous | NM_001669 | c.T497A | p.L166Q |
| 354 | BLOOD | <i>RBMX</i> | X | 135961560 | 135961560 | C | G | nonsynonymous | NM_002139 | c.G27C | p.K9N |
| 355 | BLOOD | <i>NADK</i> | 1 | 1684347 | 1684347 | - | CCT | nonframeshift | NM_023018 | c.1336_1337insAGG | p.G446delinsEG |
| 355 | BLOOD | <i>C3orf33</i> | 3 | 155481709 | 155481709 | T | C | splicing | NM_173657 | c.355-2A>G | |

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|-----|-------|------------------|----|-----------|-----------|-------------------------------|---------------|---------------|--------------|-----------------------------|----------------------|
| 356 | BLOOD | <i>LOC554223</i> | 6 | 29760353 | 29760373 | GCGGGCGC CGTGGATG GAGCA | - | nonframeshift | NM_001207043 | c.438_458del | p.146_153del |
| 356 | BLOOD | <i>SEMA6B</i> | 19 | 4544398 | 4544398 | G | A | nonsynonymous | NM_032108 | c.C1882T | p.R628W |
| 357 | BLOOD | <i>FAM120A</i> | 9 | 96259883 | 96259883 | - | A | splicing | NM_014612 | c.933+2->A | |
| 357 | BLOOD | <i>DDHD1</i> | 14 | 53619480 | 53619480 | - | GCCGCC | nonframeshift | NM_001160148 | c.336_337insGGCGG C | p.S113delinsGGS |
| 357 | BLOOD | <i>HRC</i> | 19 | 49657710 | 49657710 | - | CATCAT | nonframeshift | NM_002152 | c.784_785insATGAT G | p.V262delinsDD V |
| 357 | BLOOD | <i>BAIAP2L2</i> | 22 | 38483155 | 38483155 | - | TCATGGG TG | nonframeshift | NM_025045 | c.1234_1235insCAC CCATGA | p.N412delinsTPM N |
| 357 | BLOOD | <i>SLC35E2</i> | 1 | 1666262 | 1666262 | T | C | nonsynonymous | NM_182838 | c.A599G | p.D200G |
| 357 | BLOOD | <i>NPHP4</i> | 1 | 5927169 | 5927169 | G | A | nonsynonymous | NM_015102 | c.C3479T | p.P1160L |
| 357 | BLOOD | <i>UBXN11</i> | 1 | 26608843 | 26608843 | C | A | nonsynonymous | NM_001077262 | c.G1150T | p.G384C |
| 357 | BLOOD | <i>TLL7</i> | 1 | 84417585 | 84417585 | T | C | nonsynonymous | NM_024686 | c.A100G | p.K34E |
| 357 | BLOOD | <i>ANKRD36</i> | 2 | 97877478 | 97877478 | G | A | nonsynonymous | NM_001164315 | c.G3469A | p.V1157M |
| 357 | BLOOD | <i>TRMT10A</i> | 4 | 100479348 | 100479348 | C | T | nonsynonymous | NM_152292 | c.G206A | p.R69H |
| 357 | BLOOD | <i>DOK2</i> | 8 | 21767265 | 21767265 | G | A | nonsynonymous | NM_003974 | c.C796T | p.R266W |
| 357 | BLOOD | <i>COQ4</i> | 9 | 131094512 | 131094512 | G | C | nonsynonymous | NM_016035 | c.G483C | p.E161D |
| 357 | BLOOD | <i>NEURL1</i> | 10 | 105344482 | 105344482 | C | A | stopgain | NM_004210 | c.C839A | p.S280X |
| 357 | BLOOD | <i>MTL5</i> | 11 | 68517759 | 68517759 | A | G | nonsynonymous | NM_004923 | c.T370C | p.F124L |
| 357 | BLOOD | <i>FOXG1</i> | 14 | 29236652 | 29236652 | A | C | nonsynonymous | NM_005249 | c.A167C | p.H56P |
| 357 | BLOOD | <i>AHNAK2</i> | 14 | 105415229 | 105415229 | T | C | nonsynonymous | NM_138420 | c.A6559G | p.M2187V |
| 357 | BLOOD | <i>USP8</i> | 15 | 50790814 | 50790814 | G | T | nonsynonymous | NM_001128610 | c.G3060T | p.W1020C |
| 357 | BLOOD | <i>CCDC144NL</i> | 17 | 20769896 | 20769896 | G | T | nonsynonymous | NM_001004306 | c.C536A | p.T179N |

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|-----|-------|-----------------|----|-----------|-----------|---------------------|---|---------------|--------------|----------------|----------|
| 357 | BLOOD | <i>PLAC4</i> | 21 | 42551270 | 42551270 | A | G | nonsynonymous | NM_182832 | c.T286C | p.Y96H |
| 357 | BLOOD | <i>ARHGAP8</i> | 22 | 45258467 | 45258467 | C | T | nonsynonymous | NM_001017526 | c.C1387T | p.R463C |
| 357 | BLOOD | <i>ARSD</i> | X | 2836181 | 2836181 | A | T | nonsynonymous | NM_001669 | c.T527A | p.M176K |
| 357 | BLOOD | <i>ARSD</i> | X | 2836184 | 2836184 | C | T | nonsynonymous | NM_001669 | c.G524A | p.G175D |
| 357 | BLOOD | <i>ARSD</i> | X | 2836211 | 2836211 | A | T | nonsynonymous | NM_001669 | c.T497A | p.L166Q |
| 357 | BLOOD | <i>ARSD</i> | X | 2836238 | 2836238 | G | A | nonsynonymous | NM_001669 | c.C470T | p.S157F |
| 358 | BLOOD | <i>DPP9-AS1</i> | 19 | 4682879 | 4682880 | AG | - | frameshift | NM_001242901 | c.9_10del | p.A3fs |
| 358 | BLOOD | <i>KCNN3</i> | 1 | 154842244 | 154842244 | A | T | nonsynonymous | NM_002249 | c.T197A | p.L66H |
| 358 | BLOOD | <i>MFSN7</i> | 4 | 678642 | 678642 | C | T | nonsynonymous | NM_001294341 | c.G589A | p.G197S |
| 358 | BLOOD | <i>GGCT</i> | 7 | 30538501 | 30538501 | G | C | nonsynonymous | NM_024051 | c.C341G | p.T114S |
| 358 | BLOOD | <i>ADCY8</i> | 8 | 132002709 | 132002709 | C | T | nonsynonymous | NM_001115 | c.G1040A | p.R347H |
| 358 | BLOOD | <i>NHLRC2</i> | 10 | 115636546 | 115636546 | G | T | nonsynonymous | NM_198514 | c.G598T | p.D200Y |
| 358 | BLOOD | <i>ASXL1</i> | 20 | 31021295 | 31021295 | C | T | stopgain | NM_015338 | c.C1294T | p.Q432X |
| 359 | BLOOD | <i>DTYMK</i> | 2 | 242626142 | 242626142 | C | A | nonsynonymous | NM_001165031 | c.G57T | p.K19N |
| 359 | BLOOD | <i>RGS14</i> | 5 | 176793195 | 176793195 | G | T | nonsynonymous | NM_006480 | c.G85T | p.G29W |
| 359 | BLOOD | <i>ATP2A3</i> | 17 | 3840797 | 3840797 | G | T | nonsynonymous | NM_174955 | c.C2234A | p.A745D |
| 359 | BLOOD | <i>ARSD</i> | X | 2836181 | 2836181 | A | T | nonsynonymous | NM_001669 | c.T527A | p.M176K |
| 359 | BLOOD | <i>ARSD</i> | X | 2836184 | 2836184 | C | T | nonsynonymous | NM_001669 | c.G524A | p.G175D |
| 359 | BLOOD | <i>ARSD</i> | X | 2836211 | 2836211 | A | T | nonsynonymous | NM_001669 | c.T497A | p.L166Q |
| 35 | BLOOD | <i>TDG</i> | 12 | 104373728 | 104373728 | - | A | frameshift | NM_003211 | c.287dupA | p.E96fs |
| 35 | BLOOD | <i>SEZ6</i> | 17 | 27283241 | 27283241 | C | G | nonsynonymous | NM_178860 | c.G2888C | p.R963P |
| 360 | BLOOD | <i>HDGFRP2</i> | 19 | 4499633 | 4499647 | AGCTGGCC GGGGAGG | - | frameshift | NM_001001520 | c.1721_1722del | p.K574fs |
| 360 | BLOOD | <i>MORN1</i> | 1 | 2255576 | 2255576 | C | A | nonsynonymous | NM_024848 | c.G1257T | p.E419D |
| 360 | BLOOD | <i>CCDC107</i> | 9 | 35658572 | 35658572 | G | T | splicing | NM_001195201 | c.107-1G>T | |

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|-----|-------|----------------|----|-----------|-----------|--------|-------------------------|---------------|--------------|---------------------------------|-----------------------|
| 360 | BLOOD | <i>MYH10</i> | 17 | 8448876 | 8448876 | G | A | nonsynonymous | NM_005964 | c.C1291T | p.R431W |
| 360 | BLOOD | <i>PQLC1</i> | 18 | 77710869 | 77710869 | C | A | nonsynonymous | NM_025078 | c.G58T | p.G20C |
| 360 | BLOOD | <i>PODNL1</i> | 19 | 14046552 | 14046552 | C | A | nonsynonymous | NM_024825 | c.G497T | p.G166V |
| 360 | BLOOD | <i>SSTR4</i> | 20 | 23016151 | 23016151 | G | T | nonsynonymous | NM_001052 | c.G31T | p.G11C |
| 360 | BLOOD | <i>KCNK15</i> | 20 | 43378955 | 43378955 | G | T | stopgain | NM_022358 | c.G469T | p.E157X |
| 360 | BLOOD | <i>CDH22</i> | 20 | 44839012 | 44839012 | G | T | nonsynonymous | NM_021248 | c.C1220A | p.A407E |
| 360 | BLOOD | <i>DLG3</i> | X | 69711983 | 69711983 | G | T | nonsynonymous | NM_021120 | c.G1547T | p.R516L |
| 361 | BLOOD | <i>WDR66</i> | 12 | 122359397 | 122359397 | - | GAGGAGG AGGAGAA A | nonframeshift | NM_144668 | c.186_187insGAGGA GGAGGAGAAA | p.G62delinsGEEE EK |
| 361 | BLOOD | <i>DEFB132</i> | 20 | 238436 | 238441 | TGGTCT | - | nonframeshift | NM_207469 | c.17_22del | p.6_8del |
| 361 | BLOOD | <i>NAB2</i> | 12 | 57485446 | 57485446 | T | C | nonsynonymous | NM_005967 | c.T622C | p.F208L |
| 361 | BLOOD | <i>ZNF814</i> | 19 | 58385546 | 58385546 | G | T | nonsynonymous | NM_001144989 | c.C1212A | p.D404E |
| 362 | BLOOD | <i>ARID3B</i> | 15 | 74836289 | 74836289 | - | CAG | nonframeshift | NM_006465 | c.12_13insCAG | p.L4delinsLQ |
| 362 | BLOOD | <i>RP1L1</i> | 8 | 10467625 | 10467625 | T | A | nonsynonymous | NM_178857 | c.A3983T | p.E1328V |
| 362 | BLOOD | <i>RP1L1</i> | 8 | 10467626 | 10467626 | C | T | nonsynonymous | NM_178857 | c.G3982A | p.E1328K |
| 362 | BLOOD | <i>RP1L1</i> | 8 | 10467628 | 10467628 | G | A | nonsynonymous | NM_178857 | c.C3980T | p.T1327I |
| 362 | BLOOD | <i>RP1L1</i> | 8 | 10467629 | 10467629 | T | C | nonsynonymous | NM_178857 | c.A3979G | p.T1327A |
| 362 | BLOOD | <i>MUC5B</i> | 11 | 1264717 | 1264717 | C | T | nonsynonymous | NM_002458 | c.C6607T | p.P2203S |
| 362 | BLOOD | <i>CACNG1</i> | 17 | 65040990 | 65040990 | A | G | nonsynonymous | NM_000727 | c.A214G | p.I72V |
| 362 | BLOOD | <i>RBMX</i> | X | 135958730 | 135958730 | C | A | nonsynonymous | NM_002139 | c.G473T | p.G158V |
| 363 | BLOOD | <i>EIF3J</i> | 15 | 44829394 | 44829394 | - | GGCGGCG GC | nonframeshift | NM_001284335 | c.2_3insGGCGGCGG C | p.M1delinsMAA A |
| 363 | BLOOD | <i>PLEKHN1</i> | 1 | 908325 | 908325 | A | C | nonsynonymous | NM_032129 | c.A1087C | p.T363P |
| 363 | BLOOD | <i>MUC3A</i> | 7 | 100550432 | 100550432 | C | T | nonsynonymous | NM_005960 | c.C1013T | p.T338I |

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|-----|-------|-----------------|----|-----------|-----------|--------|-----|---------------|--------------|-----------------|---------------|
| 363 | BLOOD | <i>CLEC18B</i> | 16 | 74443750 | 74443750 | C | T | nonsynonymous | NM_001011880 | c.G1238A | p.G413E |
| 363 | BLOOD | <i>MADCAM1</i> | 19 | 501767 | 501767 | C | T | nonsynonymous | NM_130760 | c.C766T | p.P256S |
| 363 | BLOOD | <i>MADCAM1</i> | 19 | 501786 | 501786 | C | A | nonsynonymous | NM_130760 | c.C785A | p.P262Q |
| 363 | BLOOD | <i>POLR3F</i> | 20 | 18464194 | 18464194 | G | C | nonsynonymous | NM_006466 | c.G943C | p.E315Q |
| 364 | BLOOD | <i>KDM6B</i> | 17 | 7750178 | 7750183 | ACCACC | - | nonframeshift | NM_001080424 | c.753_758del | p.251_253del |
| 364 | BLOOD | <i>NBPF8</i> | 1 | 148342488 | 148342488 | T | C | nonsynonymous | NM_001277444 | c.A548G | p.Q183R |
| 364 | BLOOD | <i>VEGFC</i> | 4 | 177650866 | 177650866 | C | T | nonsynonymous | NM_005429 | c.G182A | p.R61Q |
| 364 | BLOOD | <i>FREMI</i> | 9 | 14806740 | 14806740 | C | T | nonsynonymous | NM_144966 | c.G3193A | p.V1065I |
| 364 | BLOOD | <i>TMPRSS5</i> | 11 | 113565230 | 113565230 | C | T | stopgain | NM_030770 | c.G755A | p.W252X |
| 364 | BLOOD | <i>MADCAM1</i> | 19 | 501786 | 501786 | C | A | nonsynonymous | NM_130760 | c.C785A | p.P262Q |
| 364 | BLOOD | <i>ZNF814</i> | 19 | 58385546 | 58385546 | G | T | nonsynonymous | NM_001144989 | c.C1212A | p.D404E |
| 365 | BLOOD | <i>ERICH6</i> | 3 | 150421522 | 150421522 | - | CCT | nonframeshift | NM_152394 | c.163_164insAGG | p.V55delinsEV |
| 366 | BLOOD | <i>ATP6VOA2</i> | 12 | 124197189 | 124197189 | T | G | nonsynonymous | NM_012463 | c.T77G | p.L26R |
| 366 | BLOOD | <i>ARSD</i> | X | 2836047 | 2836047 | C | T | nonsynonymous | NM_001669 | c.G661A | p.G221S |
| 366 | BLOOD | <i>RBMX</i> | X | 135956467 | 135956467 | C | T | nonsynonymous | NM_002139 | c.G1010A | p.S337N |
| 367 | BLOOD | <i>MADCAM1</i> | 19 | 501786 | 501786 | C | A | nonsynonymous | NM_130760 | c.C785A | p.P262Q |
| 369 | BLOOD | <i>L2HGDH</i> | 14 | 50750699 | 50750699 | A | C | nonsynonymous | NM_024884 | c.T593G | p.V198G |
| 369 | BLOOD | <i>ARSD</i> | X | 2836181 | 2836181 | A | T | nonsynonymous | NM_001669 | c.T527A | p.M176K |
| 370 | BLOOD | <i>IL9R</i> | X | 155239824 | 155239824 | A | G | nonsynonymous | NM_002186 | c.A1316G | p.N439S |
| 370 | BLOOD | <i>IL9R</i> | X | 155239827 | 155239827 | A | G | nonsynonymous | NM_002186 | c.A1319G | p.N440S |
| 371 | BLOOD | <i>FAM120A</i> | 9 | 96259883 | 96259883 | - | A | splicing | NM_014612 | c.933+2->A | |
| 371 | BLOOD | <i>OSGEPL1</i> | 2 | 190615374 | 190615374 | A | G | nonsynonymous | NM_022353 | c.T1175C | p.L392P |
| 371 | BLOOD | <i>MUC4</i> | 3 | 195515017 | 195515017 | A | G | nonsynonymous | NM_018406 | c.T3434C | p.V1145A |
| 371 | BLOOD | <i>PDE6A</i> | 5 | 149301253 | 149301253 | G | A | nonsynonymous | NM_000440 | c.C878T | p.P293L |
| 371 | BLOOD | <i>HLA-DRB1</i> | 6 | 32551948 | 32551948 | G | T | nonsynonymous | NM_002124 | c.C308A | p.A103E |

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|-----|-------|------------------|----|-----------|-----------|--|--------|---------------|--------------|------------------|----------------|
| 371 | BLOOD | <i>HLA-DQB1</i> | 6 | 32629935 | 32629935 | C | G | nonsynonymous | NM_001243961 | c.G470C | p.G157A |
| 371 | BLOOD | <i>FRMPD2</i> | 10 | 49447720 | 49447720 | G | A | nonsynonymous | NM_001018071 | c.C716T | p.T239M |
| 371 | BLOOD | <i>GOLGA6L10</i> | 15 | 82635194 | 82635194 | T | C | nonsynonymous | NM_001164465 | c.A1505G | p.E502G |
| 371 | BLOOD | <i>MADCAM1</i> | 19 | 501767 | 501767 | C | T | nonsynonymous | NM_130760 | c.C766T | p.P256S |
| 372 | BLOOD | <i>RBM5</i> | 3 | 50155888 | 50155889 | GA | - | frameshift | NM_005778 | c.2447_2448del | p.*816fs |
| 372 | BLOOD | <i>WDR73</i> | 15 | 85186877 | 85186894 | CTTGGCTC CGTGTTC AT | - | nonframeshift | NM_032856 | c.944_961del | p.315_321del |
| 372 | BLOOD | <i>MST1L</i> | 1 | 17083807 | 17083807 | T | C | nonsynonymous | NM_001271733 | c.A1990G | p.T664A |
| 372 | BLOOD | <i>RPIL1</i> | 8 | 10467637 | 10467637 | T | C | nonsynonymous | NM_178857 | c.A3971G | p.E1324G |
| 372 | BLOOD | <i>EP400</i> | 12 | 132445253 | 132445253 | C | G | nonsynonymous | NM_015409 | c.C89G | p.A30G |
| 372 | BLOOD | <i>ZNF814</i> | 19 | 58385748 | 58385748 | G | A | nonsynonymous | NM_001144989 | c.C1010T | p.A337V |
| 372 | BLOOD | <i>ARSD</i> | X | 2836181 | 2836181 | A | T | nonsynonymous | NM_001669 | c.T527A | p.M176K |
| 372 | BLOOD | <i>ARSD</i> | X | 2836184 | 2836184 | C | T | nonsynonymous | NM_001669 | c.G524A | p.G175D |
| 373 | BLOOD | <i>PRRC2A</i> | 6 | 31597456 | 31597456 | - | C | frameshift | NM_004638 | c.2089dupC | p.P696fs |
| 373 | BLOOD | <i>ASB2</i> | 14 | 94405998 | 94405998 | G | A | nonsynonymous | NM_016150 | c.C929T | p.P310L |
| 374 | BLOOD | <i>MIR205HG</i> | 1 | 209605637 | 209605648 | AGCAGCAG CAGC | - | nonframeshift | NM_001104548 | c.252_263del | p.84_88del |
| 374 | BLOOD | <i>DNMT3A</i> | 2 | 25470607 | 25470607 | G | - | frameshift | NM_175629 | c.867delC | p.G289fs |
| 375 | BLOOD | <i>RERE</i> | 1 | 8716306 | 8716306 | - | CGGTCC | nonframeshift | NM_012102 | c.50_51insGGACCG | p.R17delinsRDR |
| 375 | BLOOD | <i>ALLC</i> | 2 | 3749152 | 3749154 | GAA | - | nonframeshift | NM_018436 | c.901_903del | p.301_301del |
| 375 | BLOOD | <i>CCR5</i> | 3 | 46414944 | 46414975 | ACAGTCAG TATCAATT CTGGAAGA ATTTCCAG | - | frameshift | NM_000579 | c.551_582del | p.Y184fs |

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|-----|-------|-------------------|----|-----------|-----------|----------------------------|-------------------------|---------------|--------------|---------------------------------|-----------------------|
| 375 | BLOOD | <i>HNRNPA0</i> | 5 | 137088945 | 137088945 | - | GCT | nonframeshift | NM_006805 | c.810_811insAGC | p.G271delinsSG |
| 375 | BLOOD | <i>RUNX2</i> | 6 | 45390486 | 45390486 | A | C | nonsynonymous | NM_001024630 | c.A215C | p.E72A |
| 375 | BLOOD | <i>RUNX2</i> | 6 | 45390487 | 45390504 | GGCGGCGG CGGCGGCT GC | - | nonframeshift | NM_001024630 | c.216_233del | p.72_78del |
| 375 | BLOOD | <i>KRTAP4-3</i> | 17 | 39324139 | 39324139 | - | GCAGCAG GTGGTCA G | nonframeshift | NM_033187 | c.285_286insCTGAC CACCTGCTGC | p.R96delinsLTTC CR |
| 375 | BLOOD | <i>HRC</i> | 19 | 49657889 | 49657889 | - | TCC | nonframeshift | NM_002152 | c.605_606insGGA | p.E202delinsEE |
| 375 | BLOOD | <i>KRTAP10-10</i> | 21 | 46057626 | 46057640 | GTCTGCTG TGTGCC | - | nonframeshift | NM_181688 | c.292_306del | p.98_102del |
| 375 | BLOOD | <i>RBMX</i> | X | 135960146 | 135960146 | - | AA | frameshift | NM_002139 | c.315_316insTT | p.P106fs |
| 375 | BLOOD | <i>CLCNKA</i> | 1 | 16354325 | 16354325 | C | A | nonsynonymous | NM_004070 | c.C791A | p.T264N |
| 375 | BLOOD | <i>RBMXL1</i> | 1 | 89449278 | 89449278 | C | T | nonsynonymous | NM_019610 | c.G232A | p.A78T |
| 375 | BLOOD | <i>RBMXL1</i> | 1 | 89449298 | 89449298 | C | G | nonsynonymous | NM_019610 | c.G212C | p.G71A |
| 375 | BLOOD | <i>SDC1</i> | 2 | 20403998 | 20403998 | G | A | nonsynonymous | NM_002997 | c.C203T | p.T68M |
| 375 | BLOOD | <i>C2orf71</i> | 2 | 29294163 | 29294163 | G | A | nonsynonymous | NM_001029883 | c.C2965T | p.P989S |
| 375 | BLOOD | <i>NLRC4</i> | 2 | 32449832 | 32449832 | C | A | nonsynonymous | NM_021209 | c.G2785T | p.A929S |
| 375 | BLOOD | <i>PRKD3</i> | 2 | 37516543 | 37516543 | G | A | nonsynonymous | NM_005813 | c.C673T | p.P225S |
| 375 | BLOOD | <i>ATP6V1E2</i> | 2 | 46739541 | 46739541 | T | C | nonsynonymous | NM_080653 | c.A310G | p.R104G |
| 375 | BLOOD | <i>TTN</i> | 2 | 179479607 | 179479607 | G | A | nonsynonymous | NM_001267550 | c.C48727T | p.P16243S |
| 375 | BLOOD | <i>NAIP</i> | 5 | 70308554 | 70308554 | C | A | nonsynonymous | NM_004536 | c.G189T | p.R63S |
| 375 | BLOOD | <i>ADGRV1</i> | 5 | 89979871 | 89979871 | G | A | nonsynonymous | NM_032119 | c.G6133A | p.G2045R |
| 375 | BLOOD | <i>FNIP1</i> | 5 | 131066725 | 131066725 | C | A | nonsynonymous | NM_133372 | c.G226T | p.G76C |
| 375 | BLOOD | <i>SH3PXD2B</i> | 5 | 171765984 | 171765984 | C | T | nonsynonymous | NM_001017995 | c.G2125A | p.A709T |

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|-----|-------|-----------------|----|-----------|-----------|---|---|---------------|--------------|-----------|----------|
| 375 | BLOOD | <i>HK3</i> | 5 | 176311075 | 176311075 | C | T | nonsynonymous | NM_002115 | c.G1918A | p.V640M |
| 375 | BLOOD | <i>ZFP57</i> | 6 | 29641514 | 29641514 | C | T | nonsynonymous | NM_001109809 | c.G374A | p.R125Q |
| 375 | BLOOD | <i>TNXB</i> | 6 | 32032790 | 32032790 | G | T | nonsynonymous | NM_019105 | c.C6649A | p.P2217T |
| 375 | BLOOD | <i>HLA-DRB1</i> | 6 | 32549452 | 32549452 | C | G | nonsynonymous | NM_002124 | c.G534C | p.Q178H |
| 375 | BLOOD | <i>HLA-DRB1</i> | 6 | 32549481 | 32549481 | C | T | nonsynonymous | NM_002124 | c.G505A | p.A169T |
| 375 | BLOOD | <i>HLA-DRB1</i> | 6 | 32549611 | 32549611 | T | A | nonsynonymous | NM_002124 | c.A375T | p.Q125H |
| 375 | BLOOD | <i>DNAH8</i> | 6 | 38840787 | 38840787 | A | G | nonsynonymous | NM_001206927 | c.A7343G | p.D2448G |
| 375 | BLOOD | <i>RP1L1</i> | 8 | 10467625 | 10467625 | T | A | nonsynonymous | NM_178857 | c.A3983T | p.E1328V |
| 375 | BLOOD | <i>RP1L1</i> | 8 | 10467637 | 10467637 | T | C | nonsynonymous | NM_178857 | c.A3971G | p.E1324G |
| 375 | BLOOD | <i>UNC13B</i> | 9 | 35399202 | 35399202 | G | A | nonsynonymous | NM_006377 | c.G3872A | p.R1291H |
| 375 | BLOOD | <i>PLAU</i> | 10 | 75671356 | 75671356 | G | T | nonsynonymous | NM_002658 | c.G43T | p.V15L |
| 375 | BLOOD | <i>MYO16</i> | 13 | 109792825 | 109792825 | C | T | nonsynonymous | NM_015011 | c.C4199T | p.A1400V |
| 375 | BLOOD | <i>PAPLN</i> | 14 | 73720658 | 73720658 | C | T | nonsynonymous | NM_173462 | c.C1210T | p.P404S |
| 375 | BLOOD | <i>INF2</i> | 14 | 105179184 | 105179184 | G | A | nonsynonymous | NM_022489 | c.G2630A | p.R877Q |
| 375 | BLOOD | <i>AHNAK2</i> | 14 | 105418502 | 105418502 | G | T | nonsynonymous | NM_138420 | c.C3286A | p.L1096I |
| 375 | BLOOD | <i>NMRAL1</i> | 16 | 4511917 | 4511917 | C | T | nonsynonymous | NM_020677 | c.G764A | p.R255Q |
| 375 | BLOOD | <i>KIAA0430</i> | 16 | 15733081 | 15733081 | C | T | nonsynonymous | NM_014647 | c.G10A | p.G4R |
| 375 | BLOOD | <i>DNAH3</i> | 16 | 20946807 | 20946807 | C | G | nonsynonymous | NM_017539 | c.G11860C | p.E3954Q |
| 375 | BLOOD | <i>ZFP90</i> | 16 | 68597030 | 68597030 | C | T | nonsynonymous | NM_001305203 | c.C340T | p.H114Y |
| 375 | BLOOD | <i>EXOSC6</i> | 16 | 70285400 | 70285400 | C | G | nonsynonymous | NM_058219 | c.G404C | p.R135P |
| 375 | BLOOD | <i>PHLPP2</i> | 16 | 71706168 | 71706168 | G | C | nonsynonymous | NM_015020 | c.C1529G | p.S510C |
| 375 | BLOOD | <i>OSGIN1</i> | 16 | 83999491 | 83999491 | G | A | nonsynonymous | NM_182981 | c.G1313A | p.R438H |
| 375 | BLOOD | <i>MAP1LC3B</i> | 16 | 87432453 | 87432453 | G | C | nonsynonymous | NM_022818 | c.G73C | p.E25Q |
| 375 | BLOOD | <i>OVCA2</i> | 17 | 1945420 | 1945420 | G | C | nonsynonymous | NM_080822 | c.G79C | p.G27R |
| 375 | BLOOD | <i>PFAS</i> | 17 | 8166297 | 8166297 | G | A | nonsynonymous | NM_012393 | c.G1396A | p.A466T |

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|-----|-------|----------------|----|-----------|-----------|---------------------|-----|---------------|--------------|-----------------|----------------|
| 375 | BLOOD | <i>PLIN4</i> | 19 | 4511789 | 4511789 | C | T | nonsynonymous | NM_001080400 | c.G2141A | p.G714D |
| 375 | BLOOD | <i>MUC16</i> | 19 | 9006664 | 9006664 | G | A | nonsynonymous | NM_024690 | c.C39584T | p.T13195M |
| 375 | BLOOD | <i>KANK2</i> | 19 | 11287338 | 11287338 | C | A | nonsynonymous | NM_001136191 | c.G1676T | p.R559L |
| 375 | BLOOD | <i>CLDND2</i> | 19 | 51871194 | 51871194 | C | T | nonsynonymous | NM_152353 | c.G256A | p.D86N |
| 375 | BLOOD | <i>ZNF528</i> | 19 | 52919624 | 52919624 | A | T | nonsynonymous | NM_032423 | c.A1519T | p.N507Y |
| 375 | BLOOD | <i>LILRA1</i> | 19 | 55110725 | 55110725 | C | T | nonsynonymous | NM_006863 | c.C1286T | p.P429L |
| 375 | BLOOD | <i>RBMX</i> | X | 135956408 | 135956408 | A | G | nonsynonymous | NM_002139 | c.T1069C | p.Y357H |
| 375 | BLOOD | <i>RBMX</i> | X | 135956411 | 135956411 | C | A | nonsynonymous | NM_002139 | c.G1066T | p.G356W |
| 375 | BLOOD | <i>RBMX</i> | X | 135956462 | 135956462 | G | C | nonsynonymous | NM_002139 | c.C1015G | p.R339G |
| 375 | BLOOD | <i>RBMX</i> | X | 135956506 | 135956506 | C | G | nonsynonymous | NM_002139 | c.G971C | p.R324P |
| 375 | BLOOD | <i>RBMX</i> | X | 135958730 | 135958730 | C | A | nonsynonymous | NM_002139 | c.G473T | p.G158V |
| 375 | BLOOD | <i>RBMX</i> | X | 135961560 | 135961560 | C | G | nonsynonymous | NM_002139 | c.G27C | p.K9N |
| 376 | BLOOD | <i>ABCF1</i> | 6 | 30558477 | 30558477 | - | A | frameshift | NM_001025091 | c.2538dupA | p.X846delinsX |
| 376 | BLOOD | <i>TSPYL1</i> | 6 | 116600465 | 116600465 | - | CAC | nonframeshift | NM_003309 | c.528_529insGTG | p.K177delinsVK |
| 376 | BLOOD | <i>PTCHD3</i> | 10 | 27687760 | 27687760 | T | - | frameshift | NM_001034842 | c.1767delA | p.R589fs |
| 376 | BLOOD | <i>KRT10</i> | 17 | 38978766 | 38978768 | TCC | - | nonframeshift | NM_000421 | c.70_72del | p.24_24del |
| 376 | BLOOD | <i>ALPK2</i> | 18 | 56204388 | 56204402 | CAGTTGAT GTGTCCT | - | nonframeshift | NM_052947 | c.3017_3031del | p.1006_1011del |
| 376 | BLOOD | <i>SCNN1D</i> | 1 | 1222324 | 1222324 | C | T | nonsynonymous | NM_001130413 | c.C1088T | p.S363L |
| 376 | BLOOD | <i>MYOM3</i> | 1 | 24406655 | 24406655 | C | T | nonsynonymous | NM_152372 | c.G2437A | p.V813M |
| 376 | BLOOD | <i>AGL</i> | 1 | 100349983 | 100349983 | C | T | nonsynonymous | NM_000028 | c.C2522T | p.S841F |
| 376 | BLOOD | <i>ANKRD36</i> | 2 | 97877478 | 97877478 | G | A | nonsynonymous | NM_001164315 | c.G3469A | p.V1157M |
| 376 | BLOOD | <i>ATG7</i> | 3 | 11374484 | 11374484 | G | A | nonsynonymous | NM_006395 | c.G806A | p.R269H |
| 376 | BLOOD | <i>PDCD6IP</i> | 3 | 33883492 | 33883492 | G | A | nonsynonymous | NM_013374 | c.G1285A | p.G429S |
| 376 | BLOOD | <i>MUC4</i> | 3 | 195508336 | 195508336 | C | T | nonsynonymous | NM_018406 | c.G10115A | p.G3372D |

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|-----|-------|-----------------|----|-----------|-----------|----|-----|---------------|--------------|-----------------|---------------|
| 376 | BLOOD | <i>MUC4</i> | 3 | 195508343 | 195508343 | A | T | nonsynonymous | NM_018406 | c.T10108A | p.S3370T |
| 376 | BLOOD | <i>LARPI</i> | 5 | 154193580 | 154193580 | C | T | nonsynonymous | NM_015315 | c.C2984T | p.P995L |
| 376 | BLOOD | <i>MAK</i> | 6 | 10770421 | 10770421 | A | G | nonsynonymous | NM_005906 | c.T1640C | p.I547T |
| 376 | BLOOD | <i>HIST1H1T</i> | 6 | 26107824 | 26107824 | G | T | nonsynonymous | NM_005323 | c.C498A | p.S166R |
| 376 | BLOOD | <i>FKBPL</i> | 6 | 32097421 | 32097421 | G | C | nonsynonymous | NM_022110 | c.C137G | p.T46R |
| 376 | BLOOD | <i>FKBP5</i> | 6 | 35554808 | 35554808 | C | T | nonsynonymous | NM_001145777 | c.G752A | p.C251Y |
| 376 | BLOOD | <i>TTK</i> | 6 | 80746264 | 80746264 | G | T | nonsynonymous | NM_003318 | c.G1997T | p.G666V |
| 376 | BLOOD | <i>TCTE3</i> | 6 | 170144292 | 170144292 | T | C | nonsynonymous | NM_174910 | c.A199G | p.I67V |
| 376 | BLOOD | <i>ERMARD</i> | 6 | 170173427 | 170173427 | G | A | nonsynonymous | NM_018341 | c.G1246A | p.V416I |
| 376 | BLOOD | <i>WIPI2</i> | 7 | 5265491 | 5265491 | G | A | nonsynonymous | NM_015610 | c.G778A | p.G260S |
| 376 | BLOOD | <i>NPC1L1</i> | 7 | 44579184 | 44579184 | G | A | nonsynonymous | NM_013389 | c.C812T | p.A271V |
| 376 | BLOOD | <i>NPC1L1</i> | 7 | 44579185 | 44579185 | C | A | nonsynonymous | NM_013389 | c.G811T | p.A271S |
| 376 | BLOOD | <i>NPC1L1</i> | 7 | 44579335 | 44579335 | G | A | nonsynonymous | NM_013389 | c.C661T | p.H221Y |
| 376 | BLOOD | <i>LRCH4</i> | 7 | 100176362 | 100176362 | C | T | nonsynonymous | NM_001289934 | c.G646A | p.V216I |
| 376 | BLOOD | <i>RINT1</i> | 7 | 105187373 | 105187373 | T | C | nonsynonymous | NM_021930 | c.T532C | p.Y178H |
| 376 | BLOOD | <i>UBN2</i> | 7 | 138946399 | 138946399 | A | G | nonsynonymous | NM_173569 | c.A1307G | p.Y436C |
| 376 | BLOOD | <i>OR9A2</i> | 7 | 142723727 | 142723727 | G | A | nonsynonymous | NM_001001658 | c.C493T | p.R165C |
| 376 | BLOOD | <i>SLC35G5</i> | 8 | 11189591 | 11189591 | C | T | nonsynonymous | NM_054028 | c.C976T | p.R326W |
| 376 | BLOOD | <i>TUBGCP3</i> | 13 | 113201849 | 113201849 | T | C | nonsynonymous | NM_001286279 | c.A1253G | p.H418R |
| 376 | BLOOD | <i>ACSM5</i> | 16 | 20451137 | 20451137 | A | G | nonsynonymous | NM_017888 | c.A1552G | p.I518V |
| 376 | BLOOD | <i>MTCLI</i> | 18 | 8798156 | 8798156 | C | T | nonsynonymous | NM_015210 | c.C2303T | p.A768V |
| 376 | BLOOD | <i>RTTN</i> | 18 | 67687966 | 67687966 | C | A | nonsynonymous | NM_173630 | c.G6038T | p.C2013F |
| 376 | BLOOD | <i>VSX1</i> | 20 | 25060096 | 25060096 | C | T | nonsynonymous | NM_014588 | c.G479A | p.G160D |
| 377 | BLOOD | <i>RBM5</i> | 3 | 50155888 | 50155889 | GA | - | frameshift | NM_005778 | c.2447_2448del | p.*816fs |
| 377 | BLOOD | <i>ASPN</i> | 9 | 95237024 | 95237024 | - | TCA | nonframeshift | NM_017680 | c.155_156insTGA | p.E52delinsDE |

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|-----|-------|-----------------|----|-----------|-----------|---|-----|---------------|--------------|-------------------|----------------|
| 377 | BLOOD | <i>DUSP8</i> | 11 | 1577819 | 1577820 | CG | - | frameshift | NM_004420 | c.1806_1807del | p.R602fs |
| 377 | BLOOD | <i>DMKN</i> | 19 | 36002362 | 36002412 | CTGCTGCC ACCACTGC TGCCGCCA CTGCTGCC GCCACTGC TGCTGCCA CTG | - | nonframeshift | NM_033317 | c.819_869del | p.273_290del |
| 377 | BLOOD | <i>MAN2B1</i> | 19 | 12768334 | 12768334 | C | T | nonsynonymous | NM_000528 | c.G1345A | p.V449I |
| 377 | BLOOD | <i>MYH14</i> | 19 | 50762495 | 50762495 | G | A | nonsynonymous | NM_024729 | c.G2204A | p.R735H |
| 378 | BLOOD | <i>FAM90A1</i> | 12 | 8374781 | 8374781 | - | ACG | nonframeshift | NM_018088 | c.1031_1032insCGT | p.T344delinsTV |
| 378 | BLOOD | <i>MADCAM1</i> | 19 | 501773 | 501773 | G | A | nonsynonymous | NM_130760 | c.G772A | p.D258N |
| 378 | BLOOD | <i>CDC42EP5</i> | 19 | 54976356 | 54976356 | C | T | nonsynonymous | NM_145057 | c.G376A | p.G126R |
| 379 | BLOOD | <i>CYP27B1</i> | 12 | 58159173 | 58159173 | C | G | nonsynonymous | NM_000785 | c.G496C | p.V166L |
| 380 | BLOOD | <i>CREB3L2</i> | 7 | 137612914 | 137612916 | TGG | - | nonframeshift | NM_194071 | c.299_301del | p.100_101del |
| 380 | BLOOD | <i>C1orf229</i> | 1 | 247274857 | 247274857 | G | A | nonsynonymous | NM_207401 | c.C670T | p.P224S |
| 380 | BLOOD | <i>ANKRD36</i> | 2 | 97877478 | 97877478 | G | A | nonsynonymous | NM_001164315 | c.G3469A | p.V1157M |
| 380 | BLOOD | <i>MAST4</i> | 5 | 66441069 | 66441069 | G | A | nonsynonymous | NM_001164664 | c.G2956A | p.E986K |
| 380 | BLOOD | <i>PITPNM2</i> | 12 | 123474427 | 123474427 | T | G | nonsynonymous | NM_020845 | c.A2638C | p.S880R |
| 380 | BLOOD | <i>ARSD</i> | X | 2835863 | 2835863 | G | T | nonsynonymous | NM_001669 | c.C845A | p.A282D |
| 381 | BLOOD | <i>POU4F2</i> | 4 | 147560457 | 147560457 | - | GGC | nonframeshift | NM_004575 | c.165_166insGGC | p.G55delinsGG |
| 381 | BLOOD | <i>TOP2B</i> | 3 | 25639964 | 25639964 | G | A | nonsynonymous | NM_001068 | c.C4700T | p.P1567L |
| 381 | BLOOD | <i>MYBPC3</i> | 11 | 47367871 | 47367871 | C | T | nonsynonymous | NM_000256 | c.G977A | p.R326Q |
| 381 | BLOOD | <i>RBMX</i> | X | 135957672 | 135957672 | A | T | nonsynonymous | NM_002139 | c.T614A | p.V205D |
| 381 | BLOOD | <i>RBMX</i> | X | 135957690 | 135957690 | A | G | nonsynonymous | NM_002139 | c.T596C | p.L199P |

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|-----|-------|------------------|----|-----------|-----------|------------------|-----|---------------|--------------|-------------------|-----------------|
| 381 | BLOOD | <i>RBMX</i> | X | 135957700 | 135957700 | T | C | nonsynonymous | NM_002139 | c.A586G | p.R196G |
| 382 | BLOOD | <i>NADK</i> | 1 | 1684347 | 1684347 | - | CCT | nonframeshift | NM_023018 | c.1336_1337insAGG | p.G446delinsEG |
| 383 | BLOOD | <i>FAM90A1</i> | 12 | 8374781 | 8374781 | - | ACG | nonframeshift | NM_018088 | c.1031_1032insCGT | p.T344delinsTV |
| 383 | BLOOD | <i>RNASEH1</i> | 2 | 3605772 | 3605772 | T | C | nonsynonymous | NM_002936 | c.A79G | p.M27V |
| 383 | BLOOD | <i>CCDC144NL</i> | 17 | 20769896 | 20769896 | G | T | nonsynonymous | NM_001004306 | c.C536A | p.T179N |
| 383 | BLOOD | <i>CCDC144NL</i> | 17 | 20769899 | 20769899 | G | T | stopgain | NM_001004306 | c.C533A | p.S178X |
| 384 | BLOOD | <i>TCERG1</i> | 5 | 145838636 | 145838647 | CAGGCCCA GGCC | - | nonframeshift | NM_006706 | c.628_639del | p.210_213del |
| 384 | BLOOD | <i>AKAP12</i> | 6 | 151674116 | 151674116 | - | GAG | nonframeshift | NM_005100 | c.4590_4591insGAG | p.I1530delinsIE |
| 384 | BLOOD | <i>ARID1B</i> | 6 | 157100396 | 157100396 | - | CGC | nonframeshift | NM_017519 | c.1333_1334insCGC | p.A445delinsAP |
| 384 | BLOOD | <i>IL33</i> | 9 | 6254555 | 6254555 | - | A | splicing | NM_001199641 | c.234+2->A | |
| 384 | BLOOD | <i>LOC286238</i> | 9 | 91262343 | 91262343 | - | TGG | nonframeshift | NM_001100111 | c.299_300insCCA | p.H100delinsHH |
| 384 | BLOOD | <i>OR13C2</i> | 9 | 107367393 | 107367396 | GTTA | - | frameshift | NM_001004481 | c.513_516del | p.N171fs |
| 384 | BLOOD | <i>OR13C2</i> | 9 | 107367665 | 107367666 | GC | - | frameshift | NM_001004481 | c.243_244del | p.T81fs |
| 384 | BLOOD | <i>TNNT3</i> | 11 | 1944793 | 1944795 | GAA | - | nonframeshift | NM_001042782 | c.40_42del | p.14_14del |
| 384 | BLOOD | <i>EBPL</i> | 13 | 50235209 | 50235209 | A | - | frameshift | NM_032565 | c.516delT | p.F172fs |
| 384 | BLOOD | <i>TEX19</i> | 17 | 80320157 | 80320161 | ACTTT | - | frameshift | NM_207459 | c.131_135del | p.D44fs |
| 384 | BLOOD | <i>CNDP1</i> | 18 | 72223591 | 72223591 | - | TGC | nonframeshift | NM_032649 | c.43_44insTGC | p.V15delinsVL |
| 384 | BLOOD | <i>APOB</i> | 2 | 21229446 | 21229446 | G | C | nonsynonymous | NM_000384 | c.C10294G | p.Q3432E |
| 384 | BLOOD | <i>POMC</i> | 2 | 25384113 | 25384113 | T | C | nonsynonymous | NM_000939 | c.A641G | p.E214G |
| 384 | BLOOD | <i>DNMT3A</i> | 2 | 25523096 | 25523096 | T | G | nonsynonymous | NM_175629 | c.A89C | p.E30A |
| 384 | BLOOD | <i>ADGRF3</i> | 2 | 26533074 | 26533074 | A | G | nonsynonymous | NM_001145168 | c.T3068C | p.M1023T |
| 384 | BLOOD | <i>PLEK</i> | 2 | 68615546 | 68615546 | A | C | nonsynonymous | NM_002664 | c.A685C | p.N229H |
| 384 | BLOOD | <i>DYSF</i> | 2 | 71892383 | 71892383 | C | T | nonsynonymous | NM_003494 | c.C5149T | p.R1717W |
| 384 | BLOOD | <i>USP39</i> | 2 | 85876139 | 85876139 | G | C | splicing | NM_001256725 | c.1744-1G>C | |

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|-----|-------|-----------------|---|-----------|-----------|---|---|---------------|--------------|-----------|----------|
| 384 | BLOOD | <i>KRCC1</i> | 2 | 88327695 | 88327695 | G | A | nonsynonymous | NM_016618 | c.C388T | p.H130Y |
| 384 | BLOOD | <i>SCN5A</i> | 3 | 38645378 | 38645378 | G | T | nonsynonymous | NM_198056 | c.C1715A | p.A572D |
| 384 | BLOOD | <i>PPP4R2</i> | 3 | 73114209 | 73114209 | C | G | nonsynonymous | NM_174907 | c.C845G | p.S282C |
| 384 | BLOOD | <i>NAIP</i> | 5 | 70308554 | 70308554 | C | A | nonsynonymous | NM_004536 | c.G189T | p.R63S |
| 384 | BLOOD | <i>RAPGEF6</i> | 5 | 130764699 | 130764699 | A | T | nonsynonymous | NM_016340 | c.T4676A | p.V1559E |
| 384 | BLOOD | <i>PCDHA10</i> | 5 | 140235875 | 140235875 | G | A | nonsynonymous | NM_018901 | c.G242A | p.G81D |
| 384 | BLOOD | <i>PCDHB12</i> | 5 | 140590139 | 140590139 | G | A | nonsynonymous | NM_018932 | c.G1660A | p.A554T |
| 384 | BLOOD | <i>CANX</i> | 5 | 179143114 | 179143114 | C | A | nonsynonymous | NM_001746 | c.C730A | p.P244T |
| 384 | BLOOD | <i>C6orf89</i> | 6 | 36867372 | 36867372 | C | A | nonsynonymous | NM_001286635 | c.C152A | p.P51H |
| 384 | BLOOD | <i>UNC5CL</i> | 6 | 40996173 | 40996173 | G | C | nonsynonymous | NM_173561 | c.C1496G | p.P499R |
| 384 | BLOOD | <i>TRAM2</i> | 6 | 52372385 | 52372385 | A | G | nonsynonymous | NM_012288 | c.T592C | p.Y198H |
| 384 | BLOOD | <i>BMP5</i> | 6 | 55739284 | 55739284 | A | T | nonsynonymous | NM_021073 | c.T380A | p.I127K |
| 384 | BLOOD | <i>DST</i> | 6 | 56417095 | 56417095 | T | A | nonsynonymous | NM_183380 | c.A9604T | p.S3202C |
| 384 | BLOOD | <i>CDC40</i> | 6 | 110536489 | 110536489 | C | G | nonsynonymous | NM_015891 | c.C943G | p.L315V |
| 384 | BLOOD | <i>LAMA4</i> | 6 | 112460365 | 112460365 | C | T | nonsynonymous | NM_001105206 | c.G3239A | p.R1080Q |
| 384 | BLOOD | <i>CCDC28A</i> | 6 | 139097405 | 139097405 | A | C | nonsynonymous | NM_015439 | c.A418C | p.K140Q |
| 384 | BLOOD | <i>SYNE1</i> | 6 | 152686090 | 152686090 | G | T | nonsynonymous | NM_182961 | c.C10037A | p.S3346Y |
| 384 | BLOOD | <i>MYOM2</i> | 8 | 2033495 | 2033495 | G | C | nonsynonymous | NM_003970 | c.G1617C | p.K539N |
| 384 | BLOOD | <i>USP17L4</i> | 8 | 7194685 | 7194685 | T | A | nonsynonymous | NM_001256874 | c.T49A | p.F171 |
| 384 | BLOOD | <i>USP17L7</i> | 8 | 11990617 | 11990617 | C | A | nonsynonymous | NM_001256869 | c.G902T | p.R301L |
| 384 | BLOOD | <i>SARAF</i> | 8 | 29927355 | 29927355 | G | A | nonsynonymous | NM_016127 | c.C503T | p.A168V |
| 384 | BLOOD | <i>ASH2L</i> | 8 | 37996389 | 37996389 | G | A | nonsynonymous | NM_004674 | c.G1775A | p.R592H |
| 384 | BLOOD | <i>HAUS6</i> | 9 | 19058211 | 19058211 | A | T | nonsynonymous | NM_017645 | c.T2554A | p.Y852N |
| 384 | BLOOD | <i>CNTNAP3B</i> | 9 | 43822686 | 43822686 | C | A | nonsynonymous | NM_001201380 | c.C1240A | p.R414S |
| 384 | BLOOD | <i>CNTNAP3B</i> | 9 | 43822704 | 43822704 | G | A | nonsynonymous | NM_001201380 | c.G1258A | p.V420I |

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|-----|-------|----------------|----|-----------|-----------|---|---|---------------|--------------|-----------|----------|
| 384 | BLOOD | <i>ZNF189</i> | 9 | 104171770 | 104171770 | G | A | nonsynonymous | NM_003452 | c.G1720A | p.D574N |
| 384 | BLOOD | <i>BRINP1</i> | 9 | 121929726 | 121929726 | G | A | nonsynonymous | NM_014618 | c.C1922T | p.S641L |
| 384 | BLOOD | <i>RABEPK</i> | 9 | 127982839 | 127982839 | C | A | nonsynonymous | NM_005833 | c.C386A | p.P129Q |
| 384 | BLOOD | <i>ENG</i> | 9 | 130588920 | 130588920 | G | A | nonsynonymous | NM_001114753 | c.C392T | p.P131L |
| 384 | BLOOD | <i>PRRC2B</i> | 9 | 134353141 | 134353141 | G | A | nonsynonymous | NM_013318 | c.G4417A | p.E1473K |
| 384 | BLOOD | <i>LRRC56</i> | 11 | 551741 | 551741 | C | T | nonsynonymous | NM_198075 | c.C887T | p.S296F |
| 384 | BLOOD | <i>PHRF1</i> | 11 | 587352 | 587352 | A | G | nonsynonymous | NM_001286581 | c.A308G | p.D103G |
| 384 | BLOOD | <i>MUC5B</i> | 11 | 1271321 | 1271321 | C | G | nonsynonymous | NM_002458 | c.C13211G | p.A4404G |
| 384 | BLOOD | <i>OR51A7</i> | 11 | 4929362 | 4929362 | A | G | nonsynonymous | NM_001004749 | c.A763G | p.I255V |
| 384 | BLOOD | <i>TPP1</i> | 11 | 6640618 | 6640618 | G | T | nonsynonymous | NM_000391 | c.C14A | p.A5D |
| 384 | BLOOD | <i>DCHS1</i> | 11 | 6661352 | 6661352 | C | T | nonsynonymous | NM_003737 | c.G1493A | p.R498Q |
| 384 | BLOOD | <i>OR9G1</i> | 11 | 56468440 | 56468440 | G | T | nonsynonymous | NM_001005213 | c.G577T | p.G193C |
| 384 | BLOOD | <i>MS4A4A</i> | 11 | 60064729 | 60064729 | G | A | nonsynonymous | NM_148975 | c.G261A | p.M87I |
| 384 | BLOOD | <i>RTN3</i> | 11 | 63488212 | 63488212 | G | C | nonsynonymous | NM_001265589 | c.G2238C | p.K746N |
| 384 | BLOOD | <i>TMEM123</i> | 11 | 102272800 | 102272800 | T | G | nonsynonymous | NM_052932 | c.A295C | p.T99P |
| 384 | BLOOD | <i>SIK3</i> | 11 | 116729339 | 116729339 | G | A | nonsynonymous | NM_025164 | c.C2698T | p.R900W |
| 384 | BLOOD | <i>RNF214</i> | 11 | 117109498 | 117109498 | G | T | nonsynonymous | NM_001077239 | c.G289T | p.A97S |
| 384 | BLOOD | <i>VWA8</i> | 13 | 42385421 | 42385421 | C | T | nonsynonymous | NM_015058 | c.G2003A | p.R668Q |
| 384 | BLOOD | <i>DOCK9</i> | 13 | 99554562 | 99554562 | C | T | nonsynonymous | NM_001130050 | c.G1360A | p.A454T |
| 384 | BLOOD | <i>RPUSD1</i> | 16 | 836069 | 836069 | C | T | nonsynonymous | NM_058192 | c.G820A | p.A274T |
| 384 | BLOOD | <i>EC11</i> | 16 | 2296877 | 2296877 | C | T | nonsynonymous | NM_001919 | c.G277A | p.G93S |
| 384 | BLOOD | <i>PKMYT1</i> | 16 | 3024347 | 3024347 | C | T | nonsynonymous | NM_004203 | c.G1051A | p.E351K |
| 384 | BLOOD | <i>RBL2</i> | 16 | 53504304 | 53504304 | A | G | nonsynonymous | NM_005611 | c.A2255G | p.N752S |
| 384 | BLOOD | <i>HERPUD1</i> | 16 | 56973932 | 56973932 | A | T | nonsynonymous | NM_001272103 | c.A680T | p.N227I |
| 384 | BLOOD | <i>TERF2</i> | 16 | 69391437 | 69391437 | T | C | nonsynonymous | NM_005652 | c.A1454G | p.N485S |

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|-----|-------|-----------------|----|----------|----------|---|---|---------------|--------------|----------|----------|
| 384 | BLOOD | <i>CHMP1A</i> | 16 | 89712990 | 89712990 | C | T | nonsynonymous | NM_002768 | c.G514A | p.A172T |
| 384 | BLOOD | <i>SCARF1</i> | 17 | 1543934 | 1543934 | G | A | nonsynonymous | NM_003693 | c.C818T | p.P273L |
| 384 | BLOOD | <i>MYH10</i> | 17 | 8413233 | 8413233 | G | A | nonsynonymous | NM_005964 | c.C2894T | p.A965V |
| 384 | BLOOD | <i>TUBG2</i> | 17 | 40817712 | 40817712 | C | T | nonsynonymous | NM_016437 | c.C710T | p.S237L |
| 384 | BLOOD | <i>CCDC103</i> | 17 | 42979934 | 42979934 | C | T | nonsynonymous | NM_001258395 | c.C478T | p.R160W |
| 384 | BLOOD | <i>ARHGAP27</i> | 17 | 43473587 | 43473587 | T | C | nonsynonymous | NM_001282290 | c.A2237G | p.Y746C |
| 384 | BLOOD | <i>LUC7L3</i> | 17 | 48823124 | 48823124 | G | C | nonsynonymous | NM_016424 | c.G737C | p.R246P |
| 384 | BLOOD | <i>LUC7L3</i> | 17 | 48824007 | 48824007 | A | G | nonsynonymous | NM_016424 | c.A1082G | p.Y361C |
| 384 | BLOOD | <i>ARSG</i> | 17 | 66347790 | 66347790 | C | T | nonsynonymous | NM_014960 | c.C529T | p.P177S |
| 384 | BLOOD | <i>TRIM65</i> | 17 | 73888262 | 73888262 | G | A | nonsynonymous | NM_001256124 | c.C749T | p.S250L |
| 384 | BLOOD | <i>FBF1</i> | 17 | 73929085 | 73929085 | G | A | nonsynonymous | NM_001080542 | c.C116T | p.A39V |
| 384 | BLOOD | <i>SLC25A10</i> | 17 | 79687135 | 79687135 | G | A | nonsynonymous | NM_001270953 | c.G809A | p.R270K |
| 384 | BLOOD | <i>RITN</i> | 18 | 67673697 | 67673697 | C | T | nonsynonymous | NM_173630 | c.G6445A | p.A2149T |
| 384 | BLOOD | <i>ZNF236</i> | 18 | 74592121 | 74592121 | C | T | nonsynonymous | NM_007345 | c.C1031T | p.S344L |
| 384 | BLOOD | <i>C19orf26</i> | 19 | 1236041 | 1236041 | G | A | nonsynonymous | NM_152769 | c.C59T | p.T20I |
| 384 | BLOOD | <i>ZNF763</i> | 19 | 12089364 | 12089364 | G | T | nonsynonymous | NM_001012753 | c.G634T | p.V212F |
| 384 | BLOOD | <i>ILVBL</i> | 19 | 15233517 | 15233517 | G | A | stopgain | NM_006844 | c.C703T | p.R235X |
| 384 | BLOOD | <i>ANKLE1</i> | 19 | 17396577 | 17396577 | G | A | nonsynonymous | NM_152363 | c.G1786A | p.V596M |
| 384 | BLOOD | <i>GTPBP3</i> | 19 | 17452379 | 17452379 | A | G | nonsynonymous | NM_032620 | c.A1346G | p.K449R |
| 384 | BLOOD | <i>MKKS</i> | 20 | 10389422 | 10389422 | T | C | nonsynonymous | NM_170784 | c.A1015G | p.I339V |
| 384 | BLOOD | <i>GATA5</i> | 20 | 61050570 | 61050570 | T | C | nonsynonymous | NM_080473 | c.A8G | p.Q3R |
| 384 | BLOOD | <i>ASMTL</i> | X | 1531648 | 1531648 | C | T | nonsynonymous | NM_004192 | c.G1622A | p.R541K |
| 384 | BLOOD | <i>AKAP17A</i> | X | 1719897 | 1719897 | C | G | nonsynonymous | NM_005088 | c.C1498G | p.P500A |
| 384 | BLOOD | <i>ARSD</i> | X | 2835863 | 2835863 | G | T | nonsynonymous | NM_001669 | c.C845A | p.A282D |
| 384 | BLOOD | <i>ARSD</i> | X | 2836047 | 2836047 | C | T | nonsynonymous | NM_001669 | c.G661A | p.G221S |

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|-----|-------|------------------|----|-----------|-----------|------|--------|---------------|--------------|--------------------|-----------------|
| 384 | BLOOD | <i>ARSD</i> | X | 2836181 | 2836181 | A | T | nonsynonymous | NM_001669 | c.T527A | p.M176K |
| 384 | BLOOD | <i>ARSD</i> | X | 2836184 | 2836184 | C | T | nonsynonymous | NM_001669 | c.G524A | p.G175D |
| 384 | BLOOD | <i>ARSD</i> | X | 2836211 | 2836211 | A | T | nonsynonymous | NM_001669 | c.T497A | p.L166Q |
| 384 | BLOOD | <i>ARSD</i> | X | 2836238 | 2836238 | G | A | nonsynonymous | NM_001669 | c.C470T | p.S157F |
| 385 | BLOOD | <i>LTN1</i> | 21 | 30339206 | 30339206 | T | - | frameshift | NM_015565 | c.1745delA | p.N582fs |
| 385 | BLOOD | <i>MICALL2</i> | 7 | 1487401 | 1487401 | A | G | nonsynonymous | NM_182924 | c.T335C | p.I112T |
| 385 | BLOOD | <i>TUBGCP3</i> | 13 | 113201861 | 113201861 | T | A | nonsynonymous | NM_001286279 | c.A1241T | p.D414V |
| 386 | BLOOD | <i>OR13C2</i> | 9 | 107367393 | 107367396 | GTTA | - | frameshift | NM_001004481 | c.513_516del | p.N171fs |
| 386 | BLOOD | <i>OR13C2</i> | 9 | 107367665 | 107367666 | GC | - | frameshift | NM_001004481 | c.243_244del | p.T81fs |
| 386 | BLOOD | <i>SNX7</i> | 1 | 99150610 | 99150610 | G | A | nonsynonymous | NM_015976 | c.G350A | p.R117K |
| 386 | BLOOD | <i>ZMYND10</i> | 3 | 50379257 | 50379257 | G | A | nonsynonymous | NM_015896 | c.C1105T | p.R369W |
| 386 | BLOOD | <i>SLC7A11</i> | 4 | 139144395 | 139144395 | T | C | nonsynonymous | NM_014331 | c.A604G | p.I202V |
| 386 | BLOOD | <i>HLA-DRB5</i> | 6 | 32489708 | 32489708 | C | A | nonsynonymous | NM_002125 | c.G344T | p.G115V |
| 386 | BLOOD | <i>HLA-DRB1</i> | 6 | 32557497 | 32557497 | C | T | nonsynonymous | NM_002124 | c.G23A | p.G8E |
| 386 | BLOOD | <i>NEFL</i> | 8 | 24813391 | 24813391 | G | C | nonsynonymous | NM_006158 | c.C639G | p.I213M |
| 386 | BLOOD | <i>SMTNL2</i> | 17 | 4496401 | 4496401 | C | A | nonsynonymous | NM_001114974 | c.C665A | p.A222D |
| 386 | BLOOD | <i>MYO15A</i> | 17 | 18047111 | 18047111 | G | A | splicing | NM_016239 | c.6046+1G>A | |
| 386 | BLOOD | <i>CCDC144NL</i> | 17 | 20769896 | 20769896 | G | T | nonsynonymous | NM_001004306 | c.C536A | p.T179N |
| 386 | BLOOD | <i>CCDC144NL</i> | 17 | 20769899 | 20769899 | G | T | stopgain | NM_001004306 | c.C533A | p.S178X |
| 386 | BLOOD | <i>KRTAP19-1</i> | 21 | 31852456 | 31852456 | C | T | nonsynonymous | NM_181607 | c.G181A | p.G61S |
| 386 | BLOOD | <i>ARSD</i> | X | 2836184 | 2836184 | C | T | nonsynonymous | NM_001669 | c.G524A | p.G175D |
| 386 | BLOOD | <i>ARSD</i> | X | 2836211 | 2836211 | A | T | nonsynonymous | NM_001669 | c.T497A | p.L166Q |
| 386 | BLOOD | <i>ARSD</i> | X | 2836238 | 2836238 | G | A | nonsynonymous | NM_001669 | c.C470T | p.S157F |
| 387 | BLOOD | <i>RPL14</i> | 3 | 40503520 | 40503520 | - | CTGCTG | nonframeshift | NM_001034996 | c.445_446insCTGCTG | p.T149delinsTAA |

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|-----|-------|-----------------|----|-----------|-----------|------------------|--------|---------------|--------------|--------------------------|-----------------|
| 387 | BLOOD | <i>MARCKS</i> | 6 | 114181209 | 114181209 | - | A | frameshift | NM_002356 | c.454dupA | p.P151fs |
| 387 | BLOOD | <i>SPRED3</i> | 19 | 38882864 | 38882866 | CCT | - | nonframeshift | NM_001042522 | c.359_361del | p.120_121del |
| 387 | BLOOD | <i>DENND1B</i> | 1 | 197621369 | 197621369 | C | A | nonsynonymous | NM_144977 | c.G443T | p.S148I |
| 387 | BLOOD | <i>FRYL</i> | 4 | 48621344 | 48621344 | C | T | nonsynonymous | NM_015030 | c.G358A | p.D120N |
| 387 | BLOOD | <i>TMEM165</i> | 4 | 56262476 | 56262476 | C | A | nonsynonymous | NM_018475 | c.C120A | p.S40R |
| 387 | BLOOD | <i>LRRC1</i> | 6 | 53660086 | 53660086 | A | G | nonsynonymous | NM_018214 | c.A32G | p.N11S |
| 387 | BLOOD | <i>TRIM49C</i> | 11 | 89774252 | 89774252 | G | A | nonsynonymous | NM_001195234 | c.G893A | p.S298N |
| 387 | BLOOD | <i>DTD2</i> | 14 | 31926584 | 31926584 | G | A | nonsynonymous | NM_080664 | c.C16T | p.R6W |
| 387 | BLOOD | <i>KRTAP4-8</i> | 17 | 39253953 | 39253953 | G | T | nonsynonymous | NM_031960 | c.C384A | p.S128R |
| 388 | BLOOD | <i>CCDC180</i> | 9 | 100092968 | 100092968 | - | GAGGAG | nonframeshift | NM_020893 | c.2325_2326insGAG GAG | p.E775delinsEEE |
| 388 | BLOOD | <i>FGD3</i> | 9 | 95738957 | 95738957 | C | T | nonsynonymous | NM_001083536 | c.C419T | p.P140L |
| 388 | BLOOD | <i>LGALS9B</i> | 17 | 20370767 | 20370767 | G | C | nonsynonymous | NM_001042685 | c.C17G | p.S6C |
| 388 | BLOOD | <i>ANKRD30B</i> | 18 | 14779986 | 14779986 | G | A | nonsynonymous | NM_001145029 | c.G1448A | p.R483Q |
| 388 | BLOOD | <i>ANKRD30B</i> | 18 | 14780019 | 14780019 | G | T | nonsynonymous | NM_001145029 | c.G1481T | p.G494V |
| 388 | BLOOD | <i>ARSD</i> | X | 2836041 | 2836041 | A | T | nonsynonymous | NM_001669 | c.T667A | p.F223I |
| 389 | BLOOD | <i>FMO3</i> | 1 | 171086376 | 171086376 | C | A | nonsynonymous | NM_001002294 | c.C1393A | p.P465T |
| 389 | BLOOD | <i>PITRM1</i> | 10 | 3183003 | 3183003 | G | A | nonsynonymous | NM_001242307 | c.C2650T | p.L884F |
| 389 | BLOOD | <i>PROSER2</i> | 10 | 11908725 | 11908725 | C | T | stopgain | NM_153256 | c.C334T | p.Q112X |
| 389 | BLOOD | <i>NCOR1</i> | 17 | 16097870 | 16097870 | C | A | nonsynonymous | NM_006311 | c.G14T | p.G5V |
| 389 | BLOOD | <i>CDC27</i> | 17 | 45249328 | 45249328 | G | A | nonsynonymous | NM_001256 | c.C206T | p.P69L |
| 390 | BLOOD | <i>MIR205HG</i> | 1 | 209605637 | 209605648 | AGCAGCAG CAGC | - | nonframeshift | NM_001104548 | c.252_263del | p.84_88del |
| 390 | BLOOD | <i>KRT10</i> | 17 | 38975147 | 38975147 | G | T | nonsynonymous | NM_000421 | c.C1640A | p.S547Y |
| 391 | BLOOD | <i>LMF2</i> | 22 | 50944492 | 50944492 | C | T | nonsynonymous | NM_033200 | c.G746A | p.R249H |

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|-----|-------|----------------|----|-----------|-----------|----------------------------------|--------|---------------|--------------|------------------------|-----------------|
| 392 | BLOOD | <i>CTAGE5</i> | 14 | 39784005 | 39784006 | TA | - | splicing | NM_005930.3 | c.1356+2TA>- | |
| 392 | BLOOD | <i>KCNN3</i> | 1 | 154842244 | 154842244 | A | T | nonsynonymous | NM_002249 | c.T197A | p.L66H |
| 392 | BLOOD | <i>ALPK1</i> | 4 | 113360967 | 113360967 | G | T | nonsynonymous | NM_001102406 | c.G3477T | p.L1159F |
| 392 | BLOOD | <i>NDOR1</i> | 9 | 140110576 | 140110576 | C | T | nonsynonymous | NM_014434 | c.C1585T | p.R529W |
| 392 | BLOOD | <i>FOLH1</i> | 11 | 49207289 | 49207289 | A | G | nonsynonymous | NM_004476 | c.T758C | p.V253A |
| 392 | BLOOD | <i>ASXL1</i> | 20 | 31023159 | 31023159 | C | T | stopgain | NM_015338 | c.C2644T | p.Q882X |
| 392 | BLOOD | <i>EDA2R</i> | X | 65824986 | 65824986 | C | T | nonsynonymous | NM_021783 | c.G170A | p.R57K |
| 392 | BLOOD | <i>ELF4</i> | X | 129201307 | 129201307 | C | A | nonsynonymous | NM_001421 | c.G1381T | p.A461S |
| 393 | BLOOD | <i>TULP1</i> | 6 | 35478743 | 35478766 | CCTCCTCTT CCTCGTCC TCCTCGT | - | nonframeshift | NM_003322 | c.371_394del | p.124_132del |
| 393 | BLOOD | <i>KDM6B</i> | 17 | 7750177 | 7750177 | - | ACCACC | nonframeshift | NM_001080424 | c.752_753insACCAC C | p.L251delinsLPP |
| 393 | BLOOD | <i>CNTN2</i> | 1 | 205039646 | 205039646 | G | C | nonsynonymous | NM_005076 | c.G2524C | p.G842R |
| 393 | BLOOD | <i>PCNXL2</i> | 1 | 233121978 | 233121978 | C | T | nonsynonymous | NM_014801 | c.G6100A | p.G2034S |
| 393 | BLOOD | <i>ANKRD36</i> | 2 | 97877440 | 97877440 | T | C | nonsynonymous | NM_001164315 | c.T3431C | p.M1144T |
| 393 | BLOOD | <i>LRP1B</i> | 2 | 141707812 | 141707812 | G | C | nonsynonymous | NM_018557 | c.C3128G | p.T1043S |
| 393 | BLOOD | <i>F2RL1</i> | 5 | 76115069 | 76115069 | C | T | nonsynonymous | NM_005242 | c.C62T | p.S21F |
| 393 | BLOOD | <i>SLC44A4</i> | 6 | 31836994 | 31836994 | C | G | nonsynonymous | NM_025257 | c.G1171C | p.A391P |
| 393 | BLOOD | <i>SLC39A7</i> | 6 | 33170472 | 33170472 | G | C | nonsynonymous | NM_006979 | c.G935C | p.G312A |
| 393 | BLOOD | <i>KLC4</i> | 6 | 43034855 | 43034855 | C | T | nonsynonymous | NM_138343 | c.C913T | p.R305C |
| 393 | BLOOD | <i>ZNF736</i> | 7 | 63809295 | 63809295 | C | T | nonsynonymous | NM_001170905 | c.C1054T | p.R352C |
| 393 | BLOOD | <i>CSMD1</i> | 8 | 2824257 | 2824257 | C | T | nonsynonymous | NM_033225 | c.G8935A | p.G2979S |
| 393 | BLOOD | <i>USP17L7</i> | 8 | 11990617 | 11990617 | C | A | nonsynonymous | NM_001256869 | c.G902T | p.R301L |
| 393 | BLOOD | <i>PARG</i> | 10 | 51363026 | 51363026 | G | C | nonsynonymous | NM_001303487 | c.C722G | p.A241G |

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|-----|-------|-----------------|----|-----------|-----------|----------------------------|--------|---------------|--------------|------------------------|-----------------|
| 393 | BLOOD | <i>SIK2</i> | 11 | 111571710 | 111571710 | T | A | stopgain | NM_015191 | c.T579A | p.Y193X |
| 393 | BLOOD | <i>NUBP2</i> | 16 | 1838604 | 1838604 | C | T | nonsynonymous | NM_001284502 | c.C259T | p.P87S |
| 393 | BLOOD | <i>NUP88</i> | 17 | 5290041 | 5290041 | T | G | nonsynonymous | NM_002532 | c.A2149C | p.I717L |
| 393 | BLOOD | <i>CDC27</i> | 17 | 45234707 | 45234707 | T | A | nonsynonymous | NM_001256 | c.A519T | p.L173F |
| 393 | BLOOD | <i>SRSF2</i> | 17 | 74732959 | 74732959 | G | T | nonsynonymous | NM_003016 | c.C284A | p.P95H |
| 393 | BLOOD | <i>NCOA3</i> | 20 | 46281231 | 46281231 | C | T | nonsynonymous | NM_001174087 | c.C4025T | p.S1342F |
| 393 | BLOOD | <i>BAGE</i> | 21 | 11098724 | 11098724 | G | A | nonsynonymous | NM_001187 | c.C14T | p.A5V |
| 393 | BLOOD | <i>GALR3</i> | 22 | 38220948 | 38220948 | A | C | nonsynonymous | NM_003614 | c.A578C | p.Y193S |
| 393 | BLOOD | <i>RBMX</i> | X | 135957672 | 135957672 | A | T | nonsynonymous | NM_002139 | c.T614A | p.V205D |
| 393 | BLOOD | <i>RBMX</i> | X | 135957690 | 135957690 | A | G | nonsynonymous | NM_002139 | c.T596C | p.L199P |
| 393 | BLOOD | <i>RBMX</i> | X | 135957700 | 135957700 | T | C | nonsynonymous | NM_002139 | c.A586G | p.R196G |
| 394 | BLOOD | <i>FDFT1</i> | 8 | 11666219 | 11666224 | TCCCAC | - | nonframeshift | NM_001287750 | c.193_198del | p.65_66del |
| 394 | BLOOD | <i>CTAGE5</i> | 14 | 39784005 | 39784006 | TA | - | splicing | NM_005930.3 | c.1356+2TA>- | |
| 394 | BLOOD | <i>NEFH</i> | 22 | 29885859 | 29885876 | GCTAAGTC CCCAGAGA AG | - | nonframeshift | NM_021076 | c.2230_2247del | p.744_749del |
| 395 | BLOOD | <i>DDHD1</i> | 14 | 53619480 | 53619480 | - | GCCGCC | nonframeshift | NM_001160148 | c.336_337insGGCGG C | p.S113delinsGGS |
| 395 | BLOOD | <i>RBMX</i> | X | 135960146 | 135960146 | - | AA | frameshift | NM_002139 | c.315_316insTT | p.P106fs |
| 395 | BLOOD | <i>RBMX</i> | X | 135960119 | 135960119 | C | T | nonsynonymous | NM_002139 | c.G343A | p.G115R |
| 396 | BLOOD | <i>TFAP2A</i> | 6 | 10410466 | 10410466 | T | G | nonsynonymous | NM_003220 | c.A148C | p.N50H |
| 396 | BLOOD | <i>HLA-DRB1</i> | 6 | 32551948 | 32551948 | G | T | nonsynonymous | NM_002124 | c.C308A | p.A103E |
| 396 | BLOOD | <i>IL9R</i> | X | 155239827 | 155239827 | A | G | nonsynonymous | NM_002186 | c.A1319G | p.N440S |

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|-----|-------|---------------|----|-----------|-----------|---|-----------------|---------------|--------------|-----------------------------|--------------|
| 397 | BLOOD | <i>APOBR</i> | 16 | 28507398 | 28507424 | GGGACAGC CTCAGGAG GGGAGGAG GCC | - | nonframeshift | NM_018690 | c.1036_1062del | p.346_354del |
| 397 | BLOOD | <i>KCNN3</i> | 1 | 154842244 | 154842244 | A | T | nonsynonymous | NM_002249 | c.T197A | p.L66H |
| 397 | BLOOD | <i>INHBB</i> | 2 | 121107281 | 121107281 | C | T | nonsynonymous | NM_002193 | c.C1055T | p.T352M |
| 397 | BLOOD | <i>ZMIZ2</i> | 7 | 44805124 | 44805124 | T | C | nonsynonymous | NM_031449 | c.T2188C | p.F730L |
| 397 | BLOOD | <i>TTC39B</i> | 9 | 15307195 | 15307195 | G | A | nonsynonymous | NM_001168339 | c.C127T | p.P43S |
| 397 | BLOOD | <i>DMBT1</i> | 10 | 124320300 | 124320300 | C | A | nonsynonymous | NM_007329 | c.C14A | p.T5K |
| 397 | BLOOD | <i>TRIM72</i> | 16 | 31235996 | 31235996 | T | C | nonsynonymous | NM_001008274 | c.T1354C | p.F452L |
| 399 | BLOOD | <i>MUC4</i> | 3 | 195511046 | 195511046 | C | G | nonsynonymous | NM_018406 | c.G7405C | p.D2469H |
| 400 | BLOOD | <i>MICA</i> | 6 | 31380161 | 31380161 | - | CTGCTGC TGCT | frameshift | NM_001177519 | c.952_953insCTGCT GCTGCT | p.G318fs |
| 400 | BLOOD | <i>NADK</i> | 1 | 1688592 | 1688592 | A | C | nonsynonymous | NM_001198994 | c.T733G | p.W245G |
| 400 | BLOOD | <i>PRR21</i> | 2 | 240982213 | 240982213 | C | G | nonsynonymous | NM_001080835 | c.G187C | p.A63P |
| 400 | BLOOD | <i>HERC2</i> | 15 | 28518046 | 28518046 | G | A | nonsynonymous | NM_004667 | c.C905T | p.T302M |
| 400 | BLOOD | <i>CHD3</i> | 17 | 7796794 | 7796794 | A | C | nonsynonymous | NM_001005273 | c.A700C | p.I234L |
| 401 | BLOOD | <i>ACTR8</i> | 3 | 53910109 | 53910109 | - | G | splicing | NM_022899 | c.779-2->C | |
| 401 | BLOOD | <i>PCDH7</i> | 4 | 30732378 | 30732378 | C | T | nonsynonymous | NM_002589 | c.C3178T | p.R1060C |
| 401 | BLOOD | <i>FRAS1</i> | 4 | 79173616 | 79173616 | C | G | nonsynonymous | NM_001166133 | c.C380G | p.P127R |
| 401 | BLOOD | <i>CENPP</i> | 9 | 95094559 | 95094559 | C | T | nonsynonymous | NM_001012267 | c.C215T | p.T72M |
| 401 | BLOOD | <i>CTNNA3</i> | 10 | 68940253 | 68940253 | G | A | nonsynonymous | NM_001127384 | c.C869T | p.T290I |
| 401 | BLOOD | <i>HOXC13</i> | 12 | 54332756 | 54332756 | C | A | nonsynonymous | NM_017410 | c.C66A | p.S22R |
| 401 | BLOOD | <i>ACSF3</i> | 16 | 89167586 | 89167586 | C | T | nonsynonymous | NM_001127214 | c.C497T | p.P166L |
| 401 | BLOOD | <i>TIAM1</i> | 21 | 32639222 | 32639222 | G | A | nonsynonymous | NM_003253 | c.C67T | p.R23C |

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|-----|-------|----------------|----|-----------|-----------|----------------|--------|---------------|--------------|-------------------|----------------|
| 401 | BLOOD | <i>ARSD</i> | X | 2833643 | 2833643 | C | A | nonsynonymous | NM_001669 | c.G954T | p.Q318H |
| 402 | BLOOD | <i>MCC</i> | 5 | 112824033 | 112824033 | - | GCTGCC | nonframeshift | NM_001085377 | c.78_79insGGCAGC | p.S27delinsGSS |
| 402 | BLOOD | <i>DOCK1</i> | 10 | 128797664 | 128797673 | ATAGACAG AT | - | frameshift | NM_001380 | c.814_823del | p.I272fs |
| 402 | BLOOD | <i>DCHS1</i> | 11 | 6662745 | 6662745 | - | CAG | nonframeshift | NM_003737 | c.99_100insCTG | p.G34delinsLG |
| 402 | BLOOD | <i>RALY</i> | 20 | 32664872 | 32664872 | G | A | nonsynonymous | NM_016732 | c.G697A | p.G233S |
| 402 | BLOOD | <i>OGFR</i> | 20 | 61444637 | 61444637 | G | C | nonsynonymous | NM_007346 | c.G1670C | p.S557T |
| 404 | BLOOD | <i>FAM90A1</i> | 12 | 8374781 | 8374781 | - | ACG | nonframeshift | NM_018088 | c.1031_1032insCGT | p.T344delinsTV |
| 404 | BLOOD | <i>ANKRD36</i> | 2 | 97877440 | 97877440 | T | C | nonsynonymous | NM_001164315 | c.T3431C | p.M1144T |
| 404 | BLOOD | <i>CDC27</i> | 17 | 45249335 | 45249335 | T | G | nonsynonymous | NM_001256 | c.A199C | p.T67P |
| 404 | BLOOD | <i>FCGBP</i> | 19 | 40370296 | 40370296 | G | C | nonsynonymous | NM_003890 | c.C12370G | p.Q4124E |
| 404 | BLOOD | <i>TSPAN6</i> | X | 99890204 | 99890204 | C | T | nonsynonymous | NM_003270 | c.G322A | p.A108T |
| 406 | BLOOD | <i>FAM90A1</i> | 12 | 8374781 | 8374781 | - | ACG | nonframeshift | NM_018088 | c.1031_1032insCGT | p.T344delinsTV |
| 406 | BLOOD | <i>IFT122</i> | 3 | 129214358 | 129214358 | T | C | nonsynonymous | NM_052989 | c.T2116C | p.F706L |
| 406 | BLOOD | <i>MUC4</i> | 3 | 195515459 | 195515459 | C | T | nonsynonymous | NM_018406 | c.G2992A | p.A998T |
| 406 | BLOOD | <i>MUC4</i> | 3 | 195515470 | 195515470 | T | G | nonsynonymous | NM_018406 | c.A2981C | p.H994P |
| 406 | BLOOD | <i>UPF3A</i> | 13 | 115047496 | 115047496 | G | C | nonsynonymous | NM_023011 | c.G208C | p.V70L |
| 407 | BLOOD | <i>HLA-B</i> | 6 | 31322925 | 31322925 | C | A | nonsynonymous | NM_005514 | c.G971T | p.G324V |
| 407 | BLOOD | <i>HLA-B</i> | 6 | 31322928 | 31322928 | A | G | nonsynonymous | NM_005514 | c.T968C | p.I323T |
| 407 | BLOOD | <i>ARSD</i> | X | 2835863 | 2835863 | G | T | nonsynonymous | NM_001669 | c.C845A | p.A282D |
| 413 | BLOOD | <i>CEL</i> | 9 | 135947020 | 135947020 | A | G | nonsynonymous | NM_001807 | c.A2140G | p.T714A |
| 413 | BLOOD | <i>CNTN5</i> | 11 | 99690461 | 99690461 | A | G | nonsynonymous | NM_014361 | c.A242G | p.N81S |
| 413 | BLOOD | <i>UNC13D</i> | 17 | 73826167 | 73826167 | G | A | nonsynonymous | NM_199242 | c.C2896T | p.R966W |
| 414 | BLOOD | <i>CDC27</i> | 17 | 45249335 | 45249335 | T | G | nonsynonymous | NM_001256 | c.A199C | p.T67P |
| 415 | BLOOD | <i>FAM90A1</i> | 12 | 8374781 | 8374781 | - | ACG | nonframeshift | NM_018088 | c.1031_1032insCGT | p.T344delinsTV |

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|-----|-------|------------------|----|-----------|-----------|-----|----|---------------|--------------|----------------|--------------|
| 415 | BLOOD | <i>GOLGA6L10</i> | 15 | 82635194 | 82635194 | T | C | nonsynonymous | NM_001164465 | c.A1505G | p.E502G |
| 415 | BLOOD | <i>GNAS</i> | 20 | 57429563 | 57429563 | A | G | nonsynonymous | NM_080425 | c.A1243G | p.T415A |
| 415 | BLOOD | <i>DENND6B</i> | 22 | 50751470 | 50751470 | T | C | nonsynonymous | NM_001001794 | c.A1415G | p.Q472R |
| 418 | BLOOD | <i>SEMA3G</i> | 3 | 52475880 | 52475880 | G | A | nonsynonymous | NM_020163 | c.C505T | p.R169W |
| 418 | BLOOD | <i>PCDHB7</i> | 5 | 140553483 | 140553483 | T | C | nonsynonymous | NM_018940 | c.T1067C | p.I356T |
| 418 | BLOOD | <i>KRTAP2-4</i> | 17 | 39221816 | 39221816 | C | T | stopgain | NM_033184 | c.G282A | p.W94X |
| 418 | BLOOD | <i>SHANK3</i> | 22 | 51133297 | 51133297 | C | A | nonsynonymous | NM_033517 | c.C1125A | p.S375R |
| 419 | BLOOD | <i>SMPD1</i> | 11 | 6412859 | 6412859 | - | A | frameshift | NM_000543 | c.565dupA | p.P188fs |
| 419 | BLOOD | <i>KMT2B</i> | 19 | 36224217 | 36224217 | C | T | nonsynonymous | NM_014727 | c.C6767T | p.P2256L |
| 420 | BLOOD | <i>FASTKD1</i> | 2 | 170387949 | 170387949 | T | C | nonsynonymous | NM_024622 | c.A2240G | p.H747R |
| 420 | BLOOD | <i>CPED1</i> | 7 | 120901720 | 120901720 | G | A | nonsynonymous | NM_001105533 | c.G2345A | p.R782H |
| 420 | BLOOD | <i>SPATA31D1</i> | 9 | 84608900 | 84608900 | C | T | nonsynonymous | NM_001001670 | c.C3515T | p.T1172I |
| 421 | BLOOD | <i>NPEPPS</i> | 17 | 45669428 | 45669428 | - | A | splicing | NM_006310 | c.1365+2->A | |
| 421 | BLOOD | <i>IRX4</i> | 5 | 1878351 | 1878351 | G | T | nonsynonymous | NM_001278634 | c.C1292A | p.P431Q |
| 421 | BLOOD | <i>CDK5</i> | 7 | 150752911 | 150752911 | C | A | nonsynonymous | NM_004935 | c.G337T | p.G113W |
| 421 | BLOOD | <i>PARP4</i> | 13 | 25021323 | 25021323 | A | G | nonsynonymous | NM_006437 | c.T3116C | p.I1039T |
| 421 | BLOOD | <i>HSH2D</i> | 19 | 16263412 | 16263412 | G | T | nonsynonymous | NM_032855 | c.G176T | p.R59M |
| 422 | BLOOD | <i>BTNL3</i> | 5 | 180420111 | 180420112 | CA | - | frameshift | NM_197975 | c.348_349del | p.F116fs |
| 422 | BLOOD | <i>CTAGE5</i> | 14 | 39784005 | 39784006 | TA | - | splicing | NM_005930.3 | c.1356+2TA>- | |
| 422 | BLOOD | <i>FLVCR2</i> | 14 | 76101290 | 76101292 | TCG | - | nonframeshift | NM_017791 | c.1058_1060del | p.353_354del |
| 422 | BLOOD | <i>SIRPA</i> | 20 | 1895949 | 1895949 | - | GT | frameshift | NM_001040023 | c.284_285insGT | p.D95fs |
| 422 | BLOOD | <i>UBXN11</i> | 1 | 26608819 | 26608819 | A | C | nonsynonymous | NM_001077262 | c.T1174G | p.C392G |
| 422 | BLOOD | <i>PDE6B</i> | 4 | 619758 | 619758 | C | G | nonsynonymous | NM_000283 | c.C343G | p.P115A |
| 422 | BLOOD | <i>CAMTA2</i> | 17 | 4889555 | 4889555 | A | G | nonsynonymous | NM_001171167 | c.T32C | p.L11P |
| 422 | BLOOD | <i>KIF19</i> | 17 | 72350663 | 72350663 | C | T | nonsynonymous | NM_153209 | c.C2671T | p.R891W |

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|-----|-------|----------------|----|-----------|-----------|------------------|-----|---------------|--------------|-----------------|----------------|
| 422 | BLOOD | <i>CCDC178</i> | 18 | 30825388 | 30825388 | G | A | nonsynonymous | NM_001105528 | c.C1414T | p.R472W |
| 422 | BLOOD | <i>ANGPTL4</i> | 19 | 8434123 | 8434123 | G | C | nonsynonymous | NM_139314 | c.G568C | p.E190Q |
| 422 | BLOOD | <i>PLAC4</i> | 21 | 42551222 | 42551222 | T | G | nonsynonymous | NM_182832 | c.A334C | p.I112L |
| 423 | BLOOD | <i>ANP32E</i> | 1 | 150199040 | 150199045 | TCCTCT | - | nonframeshift | NM_001280559 | c.576_581del | p.192_194del |
| 423 | BLOOD | <i>TNRC6A</i> | 16 | 24788423 | 24788434 | GCAGCCAC AGCC | - | nonframeshift | NM_014494 | c.333_344del | p.111_115del |
| 423 | BLOOD | <i>ASMTL</i> | X | 1537953 | 1537953 | C | T | nonsynonymous | NM_004192 | c.G1300A | p.G434S |
| 423 | BLOOD | <i>ARSD</i> | X | 2833605 | 2833605 | C | T | stopgain | NM_001669 | c.G992A | p.W331X |
| 423 | BLOOD | <i>ARSD</i> | X | 2833643 | 2833643 | C | A | nonsynonymous | NM_001669 | c.G954T | p.Q318H |
| 423 | BLOOD | <i>ARSD</i> | X | 2836047 | 2836047 | C | T | nonsynonymous | NM_001669 | c.G661A | p.G221S |
| 425 | BLOOD | <i>TMEM2</i> | 9 | 74300311 | 74300311 | - | A | splicing | NM_001135820 | c.3767-2->T | |
| 425 | BLOOD | <i>MED15</i> | 22 | 20920813 | 20920813 | - | CAG | nonframeshift | NM_001003891 | c.750_751insCAG | p.Q250delinsQQ |
| 425 | BLOOD | <i>EXOSC8</i> | 13 | 37583420 | 37583420 | G | C | nonsynonymous | NM_181503 | c.G815C | p.S272T |
| 425 | BLOOD | <i>NEURL4</i> | 17 | 7231203 | 7231203 | C | T | nonsynonymous | NM_032442 | c.G283A | p.V95I |
| 425 | BLOOD | <i>CYP2A13</i> | 19 | 41595958 | 41595958 | C | T | nonsynonymous | NM_000766 | c.C350T | p.A117V |
| 427 | BLOOD | <i>CLUH</i> | 17 | 2601266 | 2601266 | C | T | nonsynonymous | NM_015229 | c.G1771A | p.A591T |
| 428 | BLOOD | <i>MUC4</i> | 3 | 195505788 | 195505788 | G | C | nonsynonymous | NM_018406 | c.C12663G | p.H4221Q |
| 429 | BLOOD | <i>GOLGA2</i> | 9 | 131020796 | 131020798 | CCT | - | nonframeshift | NM_004486 | c.2144_2146del | p.715_716del |
| 429 | BLOOD | <i>BCLAF1</i> | 6 | 136600949 | 136600949 | G | A | nonsynonymous | NM_014739 | c.C56T | p.S19F |
| 429 | BLOOD | <i>RHEB</i> | 7 | 151216595 | 151216595 | C | A | nonsynonymous | NM_005614 | c.G3T | p.M1I |
| 429 | BLOOD | <i>NCAM1</i> | 11 | 113146033 | 113146033 | C | T | nonsynonymous | NM_000615 | c.C2471T | p.T824M |
| 429 | BLOOD | <i>PLAC4</i> | 21 | 42551222 | 42551222 | T | G | nonsynonymous | NM_182832 | c.A334C | p.I112L |
| 430 | BLOOD | <i>ZNF510</i> | 9 | 99521347 | 99521347 | C | T | nonsynonymous | NM_014930 | c.G1765A | p.V589M |
| 430 | BLOOD | <i>UPF3A</i> | 13 | 115047496 | 115047496 | G | C | nonsynonymous | NM_023011 | c.G208C | p.V70L |
| 430 | BLOOD | <i>MISP</i> | 19 | 757017 | 757017 | A | T | nonsynonymous | NM_173481 | c.A71T | p.D24V |

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|-----|-------|-----------------|----|-----------|-----------|-----|-----|---------------|--------------|-----------------|----------------|
| 431 | BLOOD | <i>MUC5B</i> | 11 | 1269965 | 1269965 | C | A | nonsynonymous | NM_002458 | c.C11855A | p.T3952N |
| 432 | BLOOD | <i>GABRB3</i> | 15 | 27018841 | 27018841 | G | A | nonsynonymous | NM_021912 | c.C31T | p.P11S |
| 432 | BLOOD | <i>RFX2</i> | 19 | 6008188 | 6008188 | A | C | nonsynonymous | NM_000635 | c.T1063G | p.F355V |
| 433 | BLOOD | <i>ARHGEF17</i> | 11 | 73020375 | 73020375 | - | CTC | nonframeshift | NM_014786 | c.692_693insCTC | p.C231delinsCS |
| 433 | BLOOD | <i>GPR25</i> | 1 | 200842641 | 200842641 | C | T | nonsynonymous | NM_005298 | c.C476T | p.S159L |
| 433 | BLOOD | <i>TPSAB1</i> | 16 | 1291622 | 1291622 | A | G | nonsynonymous | NM_003294 | c.A421G | p.T141A |
| 433 | BLOOD | <i>MED12</i> | X | 70356862 | 70356862 | A | C | nonsynonymous | NM_005120 | c.A5534C | p.N1845T |
| 434 | BLOOD | <i>ATP6VIA</i> | 3 | 113524266 | 113524266 | G | C | nonsynonymous | NM_001690 | c.G1655C | p.R552P |
| 434 | BLOOD | <i>MCC</i> | 5 | 112824054 | 112824054 | C | T | nonsynonymous | NM_001085377 | c.G58A | p.G20S |
| 436 | BLOOD | <i>OR6C76</i> | 12 | 55820958 | 55820958 | - | A | frameshift | NM_001005183 | c.922dupA | p.H307fs |
| 436 | BLOOD | <i>PTCH1</i> | 9 | 98278972 | 98278972 | T | C | nonsynonymous | NM_001083603 | c.A131G | p.E44G |
| 436 | BLOOD | <i>CACNA1H</i> | 16 | 1268604 | 1268604 | C | T | nonsynonymous | NM_021098 | c.C5840T | p.P1947L |
| 437 | BLOOD | <i>NCOA3</i> | 20 | 46279864 | 46279866 | CAA | - | nonframeshift | NM_001174087 | c.3787_3789del | p.1263_1263del |
| 437 | BLOOD | <i>AIM1L</i> | 1 | 26671690 | 26671690 | A | G | nonsynonymous | NM_001039775 | c.T1459C | p.S487P |
| 437 | BLOOD | <i>ADAMTS7</i> | 15 | 79058879 | 79058879 | A | G | nonsynonymous | NM_014272 | c.T3374C | p.L1125P |
| 437 | BLOOD | <i>ADAMTS7</i> | 15 | 79058880 | 79058880 | G | T | nonsynonymous | NM_014272 | c.C3373A | p.L1125M |
| 437 | BLOOD | <i>ADAMTS7</i> | 15 | 79058882 | 79058882 | A | G | nonsynonymous | NM_014272 | c.T3371C | p.V1124A |
| 438 | BLOOD | <i>PCDHGA12</i> | 5 | 140812776 | 140812776 | T | - | frameshift | NM_032094 | c.2450delT | p.L817fs |
| 438 | BLOOD | <i>HRCT1</i> | 9 | 35906584 | 35906586 | CCA | - | nonframeshift | NM_001039792 | c.300_302del | p.100_101del |
| 438 | BLOOD | <i>BEGAIN</i> | 14 | 101004833 | 101004833 | G | A | nonsynonymous | NM_020836 | c.C1255T | p.R419C |
| 438 | BLOOD | <i>EC11</i> | 16 | 2294549 | 2294549 | C | T | nonsynonymous | NM_001919 | c.G299A | p.R100H |
| 439 | BLOOD | <i>FAT1</i> | 4 | 187517879 | 187517879 | G | C | nonsynonymous | NM_005245 | c.C12815G | p.S4272C |
| 439 | BLOOD | <i>HLA-A</i> | 6 | 29912108 | 29912108 | G | C | nonsynonymous | NM_002116 | c.G829C | p.E277Q |
| 440 | BLOOD | <i>MCC</i> | 5 | 112824048 | 112824048 | - | GCC | nonframeshift | NM_001085377 | c.63_64insGGC | p.S22delinsGS |

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|-----|-------|-----------------|----|-----------|-----------|-------------------------------|-----|---------------|--------------|-------------------|----------------|
| 440 | BLOOD | <i>KRT1</i> | 12 | 53069223 | 53069243 | ACCTCCGG AGCCGTAG CTGCT | - | nonframeshift | NM_006121 | c.1669_1689del | p.557_563del |
| 440 | BLOOD | <i>SFMBT2</i> | 10 | 7214485 | 7214485 | G | C | nonsynonymous | NM_001018039 | c.C2123G | p.A708G |
| 440 | BLOOD | <i>C16orf78</i> | 16 | 49411724 | 49411724 | G | A | nonsynonymous | NM_144602 | c.G233A | p.R78Q |
| 440 | BLOOD | <i>PHOSPHO1</i> | 17 | 47302377 | 47302377 | G | C | nonsynonymous | NM_001143804 | c.C110G | p.P37R |
| 441 | BLOOD | <i>RXRB</i> | 6 | 33168096 | 33168096 | - | CCG | nonframeshift | NM_021976 | c.157_158insCGG | p.V53delinsAV |
| 441 | BLOOD | <i>LMOD3</i> | 3 | 69169080 | 69169080 | T | G | nonsynonymous | NM_001304418 | c.A426C | p.E142D |
| 442 | BLOOD | <i>CRIPAK</i> | 4 | 1388944 | 1388944 | G | A | nonsynonymous | NM_175918 | c.G645A | p.M215I |
| 442 | BLOOD | <i>HLA-DRB5</i> | 6 | 32489708 | 32489708 | C | A | nonsynonymous | NM_002125 | c.G344T | p.G115V |
| 442 | BLOOD | <i>NUTM2G</i> | 9 | 99698832 | 99698832 | T | C | nonsynonymous | NM_001170741 | c.T968C | p.V323A |
| 442 | BLOOD | <i>LCN6</i> | 9 | 139642898 | 139642898 | A | G | nonsynonymous | NM_198946 | c.T38C | p.V13A |
| 442 | BLOOD | <i>TPRN</i> | 9 | 140093495 | 140093495 | C | T | nonsynonymous | NM_001128228 | c.G1669A | p.G557S |
| 442 | BLOOD | <i>KRT6A</i> | 12 | 52881856 | 52881856 | T | C | nonsynonymous | NM_005554 | c.A1456G | p.I486V |
| 442 | BLOOD | <i>TUBGCP3</i> | 13 | 113201867 | 113201867 | G | A | nonsynonymous | NM_001286279 | c.C1235T | p.T412M |
| 443 | BLOOD | <i>BAGE3</i> | 21 | 11098704 | 11098704 | A | G | nonsynonymous | NM_182481 | c.T14C | p.V5A |
| 444 | BLOOD | <i>ZC3H3</i> | 8 | 144522386 | 144522386 | - | GAG | nonframeshift | NM_015117 | c.2639_2640insCTC | p.S880delinsSS |
| 444 | BLOOD | <i>EXO1</i> | 1 | 242020734 | 242020734 | C | A | nonsynonymous | NM_130398 | c.C493A | p.Q165K |
| 444 | BLOOD | <i>WASH1</i> | 9 | 17476 | 17476 | G | C | stopgain | NM_182905 | c.C549G | p.Y183X |
| 444 | BLOOD | <i>TPSAB1</i> | 16 | 1291454 | 1291454 | G | A | nonsynonymous | NM_003294 | c.G253A | p.A85T |
| 444 | BLOOD | <i>KCNB1</i> | 20 | 48098897 | 48098897 | C | G | nonsynonymous | NM_004975 | c.G121C | p.A41P |
| 444 | BLOOD | <i>POTED</i> | 21 | 15011856 | 15011856 | G | A | nonsynonymous | NM_174981 | c.G1430A | p.R477Q |
| 445 | BLOOD | <i>EXO1</i> | 1 | 242020734 | 242020734 | C | A | nonsynonymous | NM_130398 | c.C493A | p.Q165K |
| 445 | BLOOD | <i>MUC3A</i> | 7 | 100550432 | 100550432 | C | T | nonsynonymous | NM_005960 | c.C1013T | p.T338I |
| 445 | BLOOD | <i>CLIP1</i> | 12 | 122845698 | 122845698 | C | A | nonsynonymous | NM_001247997 | c.G813T | p.L271F |

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|-----|-------|-----------------|----|-----------|-----------|---------------------|---------------|---------------|--------------|---------------------------|---------------------|
| 445 | BLOOD | <i>BBS4</i> | 15 | 73023725 | 73023725 | G | T | nonsynonymous | NM_033028 | c.G791T | p.C264F |
| 445 | BLOOD | <i>TPSB2</i> | 16 | 1279338 | 1279338 | A | G | nonsynonymous | NM_024164 | c.T353C | p.I118T |
| 445 | BLOOD | <i>TPSAB1</i> | 16 | 1291178 | 1291178 | T | C | nonsynonymous | NM_003294 | c.T86C | p.V29A |
| 445 | BLOOD | <i>ZNF814</i> | 19 | 58385748 | 58385748 | G | A | nonsynonymous | NM_001144989 | c.C1010T | p.A337V |
| 445 | BLOOD | <i>APOBEC3H</i> | 22 | 39498015 | 39498015 | C | G | nonsynonymous | NM_001166003 | c.C511G | p.R171G |
| 446 | BLOOD | <i>NFKBIE</i> | 6 | 44232768 | 44232768 | T | A | nonsynonymous | NM_004556 | c.A733T | p.S245C |
| 447 | BLOOD | <i>LURAP1L</i> | 9 | 12775861 | 12775861 | - | GGCGGCG GC | nonframeshift | NM_203403 | c.147_148insGGCGG CGGC | p.G49delinsGGG G |
| 447 | BLOOD | <i>DDX11</i> | 12 | 31237978 | 31237978 | C | T | nonsynonymous | NM_001257144 | c.C556T | p.R186W |
| 447 | BLOOD | <i>ARSD</i> | X | 2836041 | 2836041 | A | T | nonsynonymous | NM_001669 | c.T667A | p.F223I |
| 447 | BLOOD | <i>ARSD</i> | X | 2836047 | 2836047 | C | T | nonsynonymous | NM_001669 | c.G661A | p.G221S |
| 448 | BLOOD | <i>ABCA1</i> | 9 | 107556793 | 107556793 | T | A | splicing | NM_005502 | c.5383-2A->T | |
| 448 | BLOOD | <i>ABCA1</i> | 9 | 107556793 | 107556793 | - | A | splicing | NM_005502 | c.5383-2->T | |
| 448 | BLOOD | <i>HSPG2</i> | 1 | 22186113 | 22186113 | T | G | nonsynonymous | NM_005529 | c.A5239C | p.T1747P |
| 448 | BLOOD | <i>EFTUD2</i> | 17 | 42929092 | 42929092 | T | G | nonsynonymous | NM_004247 | c.A2809C | p.T937P |
| 449 | BLOOD | <i>LSM11</i> | 5 | 157170966 | 157170966 | G | A | nonsynonymous | NM_173491 | c.G208A | p.G70S |
| 449 | BLOOD | <i>CDC27</i> | 17 | 45249328 | 45249328 | G | A | nonsynonymous | NM_001256 | c.C206T | p.P69L |
| 449 | BLOOD | <i>GGT1</i> | 22 | 25007172 | 25007172 | G | A | nonsynonymous | NM_001288833 | c.G124A | p.A42T |
| 450 | BLOOD | <i>GAREM</i> | 18 | 29847928 | 29847928 | A | - | frameshift | NM_001242409 | c.2537delT | p.L846fs |
| 450 | BLOOD | <i>AQP7</i> | 9 | 33385852 | 33385852 | C | T | nonsynonymous | NM_001170 | c.G538A | p.G180R |
| 450 | BLOOD | <i>FUK</i> | 16 | 70508885 | 70508885 | T | C | nonsynonymous | NM_145059 | c.T2348C | p.L783P |
| 451 | BLOOD | <i>UBXN11</i> | 1 | 26608861 | 26608861 | - | GGGAGA | nonframeshift | NM_001077262 | c.1131_1132insTCTC CC | p.G378delinsSPG |
| 451 | BLOOD | <i>KTI12</i> | 1 | 52499071 | 52499097 | GCCCCCA CCTGAGGT | - | nonframeshift | NM_138417 | c.337_363del | p.113_121del |

| | | | | | | CCCGCGAT CGG | | | | | |
|-----|-------|------------------|----|-----------|-----------|-----------------|--------|---------------|--------------|------------------------|----------------|
| 451 | BLOOD | <i>KCNN3</i> | 1 | 154842199 | 154842199 | - | GCTGCT | nonframeshift | NM_002249 | c.241_242insAGCAG C | p.P81delinsQQP |
| 451 | BLOOD | <i>CRIPAK</i> | 4 | 1388862 | 1388862 | G | C | nonsynonymous | NM_175918 | c.G563C | p.R188P |
| 451 | BLOOD | <i>CCDC144NL</i> | 17 | 20769896 | 20769896 | G | T | nonsynonymous | NM_001004306 | c.C536A | p.T179N |
| 452 | BLOOD | <i>TSPAN10</i> | 17 | 79614933 | 79614936 | TAAC | - | splicing | | | |
| 452 | BLOOD | <i>APC2</i> | 19 | 1467215 | 1467223 | CGGGGGCG C | - | nonframeshift | NM_005883 | c.3915_3923del | p.1305_1308del |
| 452 | BLOOD | <i>EDN1</i> | 6 | 12290906 | 12290906 | G | T | nonsynonymous | NM_001955 | c.G44T | p.C15F |
| 452 | BLOOD | <i>NOBOX</i> | 7 | 144096158 | 144096158 | C | T | nonsynonymous | NM_001080413 | c.G1354A | p.D452N |
| 452 | BLOOD | <i>SLC4A2</i> | 7 | 150761715 | 150761715 | G | A | nonsynonymous | NM_001199692 | c.G320A | p.R107Q |
| 452 | BLOOD | <i>POLB</i> | 8 | 42226805 | 42226805 | C | G | nonsynonymous | NM_002690 | c.C725G | p.P242R |
| 452 | BLOOD | <i>GBGT1</i> | 9 | 136029336 | 136029336 | C | T | stopgain | NM_001282629 | c.G653A | p.W218X |
| 452 | BLOOD | <i>KCNT1</i> | 9 | 138667233 | 138667233 | C | T | nonsynonymous | NM_020822 | c.C2321T | p.A774V |
| 452 | BLOOD | <i>SDCCAG3</i> | 9 | 139301782 | 139301782 | G | T | nonsynonymous | NM_001039707 | c.C634A | p.L212I |
| 452 | BLOOD | <i>MUC5B</i> | 11 | 1269643 | 1269643 | A | G | nonsynonymous | NM_002458 | c.A11533G | p.R3845G |
| 452 | BLOOD | <i>MUC5B</i> | 11 | 1272793 | 1272793 | C | T | nonsynonymous | NM_002458 | c.C14683T | p.P4895S |
| 452 | BLOOD | <i>INSC</i> | 11 | 15247307 | 15247307 | C | A | nonsynonymous | NM_001031853 | c.C1244A | p.A415D |
| 452 | BLOOD | <i>INSC</i> | 11 | 15247310 | 15247310 | T | G | nonsynonymous | NM_001031853 | c.T1247G | p.I416S |
| 452 | BLOOD | <i>AGAP2</i> | 12 | 58126227 | 58126227 | A | G | nonsynonymous | NM_001122772 | c.T1753C | p.S585P |
| 452 | BLOOD | <i>TSPAN31</i> | 12 | 58138971 | 58138971 | G | A | nonsynonymous | NM_005981 | c.G34A | p.A12T |
| 452 | BLOOD | <i>CKAP2</i> | 13 | 53047966 | 53047966 | G | A | nonsynonymous | NM_001098525 | c.G1552A | p.E518K |
| 452 | BLOOD | <i>LGALS9B</i> | 17 | 20370767 | 20370767 | G | C | nonsynonymous | NM_001042685 | c.C17G | p.S6C |
| 452 | BLOOD | <i>ANKRD30B</i> | 18 | 14779986 | 14779986 | G | A | nonsynonymous | NM_001145029 | c.G1448A | p.R483Q |

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|-----|-------|------------------|----|-----------|-----------|---|---------------|---------------|--------------|-----------------------------|-----------------------|
| 452 | BLOOD | <i>ARSD</i> | X | 2833605 | 2833605 | C | T | stopgain | NM_001669 | c.G992A | p.W331X |
| 452 | BLOOD | <i>ARSD</i> | X | 2836181 | 2836181 | A | T | nonsynonymous | NM_001669 | c.T527A | p.M176K |
| 452 | BLOOD | <i>ARSD</i> | X | 2836184 | 2836184 | C | T | nonsynonymous | NM_001669 | c.G524A | p.G175D |
| 452 | BLOOD | <i>ARSD</i> | X | 2836211 | 2836211 | A | T | nonsynonymous | NM_001669 | c.T497A | p.L166Q |
| 452 | BLOOD | <i>ARSD</i> | X | 2836238 | 2836238 | G | A | nonsynonymous | NM_001669 | c.C470T | p.S157F |
| 452 | BLOOD | <i>EIF2S3</i> | X | 24073777 | 24073777 | C | A | nonsynonymous | NM_001415 | c.C115A | p.Q39K |
| 453 | BLOOD | <i>PRR21</i> | 2 | 240982219 | 240982219 | A | G | nonsynonymous | NM_001080835 | c.T181C | p.S61P |
| 453 | BLOOD | <i>CCDC144NL</i> | 17 | 20769896 | 20769896 | G | T | nonsynonymous | NM_001004306 | c.C536A | p.T179N |
| 453 | BLOOD | <i>CCDC144NL</i> | 17 | 20769899 | 20769899 | G | T | stopgain | NM_001004306 | c.C533A | p.S178X |
| 453 | BLOOD | <i>SEZ6</i> | 17 | 27283247 | 27283247 | C | G | nonsynonymous | NM_178860 | c.G2882C | p.R961P |
| 454 | BLOOD | <i>SPATA33</i> | 16 | 89735891 | 89735891 | - | TG | frameshift | NM_153025 | c.406_407insTG | p.H136fs |
| 454 | BLOOD | <i>NPHP4</i> | 1 | 6027409 | 6027409 | T | C | nonsynonymous | NM_015102 | c.A467G | p.H156R |
| 454 | BLOOD | <i>SORCS2</i> | 4 | 7666180 | 7666180 | C | A | nonsynonymous | NM_020777 | c.C1053A | p.D351E |
| 454 | BLOOD | <i>USP17L7</i> | 8 | 11990617 | 11990617 | C | A | nonsynonymous | NM_001256869 | c.G902T | p.R301L |
| 454 | BLOOD | <i>INTS10</i> | 8 | 19701702 | 19701702 | G | T | nonsynonymous | NM_018142 | c.G1835T | p.C612F |
| 454 | BLOOD | <i>SIRPA</i> | 20 | 1895963 | 1895963 | A | G | nonsynonymous | NM_001040023 | c.A298G | p.N100D |
| 454 | BLOOD | <i>SIRPA</i> | 20 | 1895965 | 1895965 | C | A | nonsynonymous | NM_001040023 | c.C300A | p.N100K |
| 454 | BLOOD | <i>ABCD1</i> | X | 153008483 | 153008483 | G | A | nonsynonymous | NM_000033 | c.G1823A | p.G608D |
| 455 | BLOOD | <i>ABCA1</i> | 9 | 107556793 | 107556793 | - | AAA | splicing | NM_005502 | c.5383-2->TTT | |
| 455 | BLOOD | <i>CACNA1F</i> | X | 49081230 | 49081230 | C | T | nonsynonymous | NM_005183 | c.G1903A | p.V635I |
| 456 | BLOOD | <i>NCOR2</i> | 12 | 124824721 | 124824721 | - | GCCGCTG CT | nonframeshift | NM_006312 | c.5517_5518insAGC AGCGGC | p.G1840delinsSS GG |
| 456 | BLOOD | <i>NCOR2</i> | 12 | 124887058 | 124887058 | - | GCT | nonframeshift | NM_006312 | c.1531_1532insAGC | p.P511delinsQP |
| 456 | BLOOD | <i>KDM4E</i> | 11 | 94758957 | 94758957 | A | G | nonsynonymous | NM_001161630 | c.A236G | p.Q79R |
| 456 | BLOOD | <i>ZNF740</i> | 12 | 53580184 | 53580184 | C | T | nonsynonymous | NM_001004304 | c.C383T | p.P128L |

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|-----|-------|-------------------|----|-----------|-----------|---------------------|-----|---------------|--------------|-------------------|----------------|
| 456 | BLOOD | <i>NCOR1</i> | 17 | 16097870 | 16097870 | C | A | nonsynonymous | NM_006311 | c.G14T | p.G5V |
| 457 | BLOOD | <i>HEATR5B</i> | 2 | 37247961 | 37247961 | T | C | nonsynonymous | NM_019024 | c.A3872G | p.H1291R |
| 457 | BLOOD | <i>PRR21</i> | 2 | 240982248 | 240982248 | T | C | nonsynonymous | NM_001080835 | c.A152G | p.H51R |
| 457 | BLOOD | <i>CNTRL</i> | 9 | 123907526 | 123907526 | G | T | nonsynonymous | NM_007018 | c.G3173T | p.R1058L |
| 457 | BLOOD | <i>MADCAM1</i> | 19 | 501786 | 501786 | C | A | nonsynonymous | NM_130760 | c.C785A | p.P262Q |
| 457 | BLOOD | <i>ZNF493</i> | 19 | 21607675 | 21607675 | C | A | nonsynonymous | NM_175910 | c.C1830A | p.D610E |
| 458 | BLOOD | <i>FAM90A1</i> | 12 | 8374781 | 8374781 | - | ACG | nonframeshift | NM_018088 | c.1031_1032insCGT | p.T344delinsTV |
| 458 | BLOOD | <i>KRTAP10-10</i> | 21 | 46057613 | 46057627 | CTGCTGTG TGCCTGT | - | nonframeshift | NM_181688 | c.279_293del | p.93_98del |
| 458 | BLOOD | <i>RLF</i> | 1 | 40705896 | 40705896 | C | G | nonsynonymous | NM_012421 | c.C5522G | p.T1841S |
| 458 | BLOOD | <i>EXO5</i> | 1 | 40980715 | 40980715 | C | T | nonsynonymous | NM_022774 | c.C499T | p.P167S |
| 458 | BLOOD | <i>ORC1</i> | 1 | 52840559 | 52840559 | C | T | nonsynonymous | NM_001190818 | c.G2314A | p.V772I |
| 458 | BLOOD | <i>TCEANC2</i> | 1 | 54534466 | 54534466 | C | A | nonsynonymous | NM_153035 | c.C140A | p.T47N |
| 458 | BLOOD | <i>PSMA5</i> | 1 | 109969041 | 109969041 | C | A | splicing | | | |
| 458 | BLOOD | <i>PROKR1</i> | 2 | 68882691 | 68882691 | T | C | nonsynonymous | NM_138964 | c.T1165C | p.C389R |
| 458 | BLOOD | <i>LAMB2</i> | 3 | 49160671 | 49160671 | T | C | nonsynonymous | NM_002292 | c.A4118G | p.D1373G |
| 458 | BLOOD | <i>NIPAL1</i> | 4 | 48036998 | 48036998 | G | A | nonsynonymous | NM_207330 | c.G562A | p.A188T |
| 458 | BLOOD | <i>PCDH18</i> | 4 | 138442527 | 138442527 | T | C | nonsynonymous | NM_019035 | c.A3064G | p.T1022A |
| 458 | BLOOD | <i>CAST</i> | 5 | 96098075 | 96098075 | C | T | nonsynonymous | NM_001042440 | c.C1808T | p.S603L |
| 458 | BLOOD | <i>PCDHGA11</i> | 5 | 140801426 | 140801426 | T | C | nonsynonymous | NM_018914 | c.T632C | p.L211P |
| 458 | BLOOD | <i>SEMA4D</i> | 9 | 92006277 | 92006277 | C | T | nonsynonymous | NM_006378 | c.G676A | p.G226S |
| 458 | BLOOD | <i>CNTN5</i> | 11 | 99690461 | 99690461 | A | G | nonsynonymous | NM_014361 | c.A242G | p.N81S |
| 458 | BLOOD | <i>ABCC11</i> | 16 | 48204843 | 48204843 | T | A | nonsynonymous | NM_033151 | c.A3734T | p.Q1245L |
| 458 | BLOOD | <i>SLC38A7</i> | 16 | 58713850 | 58713850 | C | T | nonsynonymous | NM_018231 | c.G181A | p.V61I |
| 458 | BLOOD | <i>ZNF814</i> | 19 | 58385546 | 58385546 | G | T | nonsynonymous | NM_001144989 | c.C1212A | p.D404E |

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|-----|-------|----------------|----|-----------|-----------|--------|-----|---------------|--------------|-------------------|----------------|
| 458 | BLOOD | <i>ARSD</i> | X | 2835863 | 2835863 | G | T | nonsynonymous | NM_001669 | c.C845A | p.A282D |
| 458 | BLOOD | <i>ARSD</i> | X | 2836041 | 2836041 | A | T | nonsynonymous | NM_001669 | c.T667A | p.F223I |
| 458 | BLOOD | <i>ARSD</i> | X | 2836047 | 2836047 | C | T | nonsynonymous | NM_001669 | c.G661A | p.G221S |
| 458 | BLOOD | <i>ARSD</i> | X | 2836181 | 2836181 | A | T | nonsynonymous | NM_001669 | c.T527A | p.M176K |
| 458 | BLOOD | <i>ARSD</i> | X | 2836184 | 2836184 | C | T | nonsynonymous | NM_001669 | c.G524A | p.G175D |
| 458 | BLOOD | <i>ARSD</i> | X | 2836238 | 2836238 | G | A | nonsynonymous | NM_001669 | c.C470T | p.S157F |
| 459 | BLOOD | <i>PODXL</i> | 7 | 131241030 | 131241035 | GGCGAC | - | nonframeshift | NM_001018111 | c.84_89del | p.28_30del |
| 459 | BLOOD | <i>SPAG1</i> | 8 | 101206459 | 101206459 | - | GAC | nonframeshift | NM_003114 | c.1059_1060insGAC | p.K353delinsKD |
| 459 | BLOOD | <i>ARSD</i> | X | 2836041 | 2836041 | A | T | nonsynonymous | NM_001669 | c.T667A | p.F223I |
| 459 | BLOOD | <i>ARSD</i> | X | 2836047 | 2836047 | C | T | nonsynonymous | NM_001669 | c.G661A | p.G221S |
| 459 | BLOOD | <i>ARSD</i> | X | 2836181 | 2836181 | A | T | nonsynonymous | NM_001669 | c.T527A | p.M176K |
| 459 | BLOOD | <i>ARSD</i> | X | 2836184 | 2836184 | C | T | nonsynonymous | NM_001669 | c.G524A | p.G175D |
| 460 | BLOOD | <i>TLL10</i> | 1 | 1116189 | 1116189 | G | - | frameshift | NM_001130045 | c.704delG | p.R235fs |
| 460 | BLOOD | <i>ABCB6</i> | 2 | 220083309 | 220083311 | GAA | - | nonframeshift | NM_005689 | c.85_87del | p.29_29del |
| 460 | BLOOD | <i>KCNN3</i> | 1 | 154842244 | 154842244 | A | T | nonsynonymous | NM_002249 | c.T197A | p.L66H |
| 460 | BLOOD | <i>HLA-A</i> | 6 | 29912070 | 29912070 | C | T | nonsynonymous | NM_002116 | c.C791T | p.T264I |
| 460 | BLOOD | <i>HSD17B8</i> | 6 | 33172479 | 33172479 | G | T | nonsynonymous | NM_014234 | c.G34T | p.A12S |
| 460 | BLOOD | <i>KMT2C</i> | 7 | 151945007 | 151945007 | C | T | nonsynonymous | NM_170606 | c.G2512A | p.G838S |
| 460 | BLOOD | <i>GBA2</i> | 9 | 35740095 | 35740095 | C | G | nonsynonymous | NM_020944 | c.G1309C | p.D437H |
| 460 | BLOOD | <i>RNF17</i> | 13 | 25424583 | 25424583 | T | C | splicing | NM_031277 | c.3204+2T>C | |
| 460 | BLOOD | <i>TSEN54</i> | 17 | 73518071 | 73518071 | C | G | nonsynonymous | NM_207346 | c.C909G | p.F303L |
| 460 | BLOOD | <i>ARSD</i> | X | 2835863 | 2835863 | G | T | nonsynonymous | NM_001669 | c.C845A | p.A282D |
| 460 | BLOOD | <i>ARSD</i> | X | 2836047 | 2836047 | C | T | nonsynonymous | NM_001669 | c.G661A | p.G221S |
| 460 | BLOOD | <i>ARSD</i> | X | 2836238 | 2836238 | G | A | nonsynonymous | NM_001669 | c.C470T | p.S157F |
| 460 | BLOOD | <i>RBMX</i> | X | 135960230 | 135960230 | C | T | nonsynonymous | NM_002139 | c.G232A | p.A78T |

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|-----|-------|------------------|----|-----------|-----------|--------|---------------|---------------|--------------|-----------------------------|-----------------------|
| 461 | BLOOD | <i>ATP13A4</i> | 3 | 193129979 | 193129979 | T | C | nonsynonymous | NM_032279 | c.A3196G | p.T1066A |
| 461 | BLOOD | <i>ZDHC14</i> | 6 | 158093942 | 158093942 | G | A | nonsynonymous | NM_024630 | c.G1255A | p.A419T |
| 461 | BLOOD | <i>MUC2</i> | 11 | 1093411 | 1093411 | A | C | nonsynonymous | NM_002457 | c.A5230C | p.T1744P |
| 461 | BLOOD | <i>CORO7</i> | 16 | 4414651 | 4414651 | C | T | nonsynonymous | NM_024535 | c.G1084A | p.G362S |
| 461 | BLOOD | <i>EVPL</i> | 17 | 74011595 | 74011595 | C | T | nonsynonymous | NM_001988 | c.G1825A | p.A609T |
| 461 | BLOOD | <i>SERPINB10</i> | 18 | 61584726 | 61584726 | G | T | nonsynonymous | NM_005024 | c.G205T | p.D69Y |
| 461 | BLOOD | <i>DOCK6</i> | 19 | 11356555 | 11356555 | C | T | splicing | NM_020812 | c.807-1G>A | |
| 461 | BLOOD | <i>ARSD</i> | X | 2836211 | 2836211 | A | T | nonsynonymous | NM_001669 | c.T497A | p.L166Q |
| 462 | BLOOD | <i>NOTCH2</i> | 1 | 120612003 | 120612004 | GG | - | frameshift | NM_024408 | c.17_18del | p.P6fs |
| 462 | BLOOD | <i>ROBO3</i> | 11 | 124750448 | 124750453 | CGGAGT | - | nonframeshift | NM_022370 | c.4093_4098del | p.1365_1366del |
| 462 | BLOOD | <i>CXCL14</i> | 5 | 134910265 | 134910265 | C | T | nonsynonymous | NM_004887 | c.G317A | p.R106H |
| 462 | BLOOD | <i>TENM2</i> | 5 | 167654983 | 167654983 | A | G | nonsynonymous | NM_001122679 | c.A5341G | p.S1781G |
| 462 | BLOOD | <i>PI16</i> | 6 | 36922621 | 36922621 | A | G | nonsynonymous | NM_153370 | c.A85G | p.T29A |
| 462 | BLOOD | <i>PRDM13</i> | 6 | 100061221 | 100061221 | C | T | nonsynonymous | NM_021620 | c.C710T | p.A237V |
| 462 | BLOOD | <i>WDR86</i> | 7 | 151078993 | 151078993 | C | T | nonsynonymous | NM_198285 | c.G937A | p.G313S |
| 462 | BLOOD | <i>PRPH</i> | 12 | 49689404 | 49689404 | G | T | nonsynonymous | NM_006262 | c.G421T | p.D141Y |
| 462 | BLOOD | <i>CACNA1F</i> | X | 49061742 | 49061742 | C | T | nonsynonymous | NM_005183 | c.G5789A | p.R1930H |
| 462 | BLOOD | <i>MAGEC3</i> | X | 140967165 | 140967165 | T | C | nonsynonymous | NM_138702 | c.T463C | p.S155P |
| 463 | BLOOD | <i>MARCKS</i> | 6 | 114181209 | 114181209 | - | A | frameshift | NM_002356 | c.454dupA | p.P151fs |
| 463 | BLOOD | <i>KDM6B</i> | 17 | 7750178 | 7750180 | ACC | - | nonframeshift | NM_001080424 | c.753_755del | p.251_252del |
| 464 | BLOOD | <i>CPOX</i> | 3 | 98311987 | 98311989 | TCC | - | nonframeshift | NM_000097 | c.360_362del | p.120_121del |
| 464 | BLOOD | <i>FAM90A1</i> | 12 | 8374781 | 8374781 | - | ACG | nonframeshift | NM_018088 | c.1031_1032insCGT | p.T344delinsTV |
| 464 | BLOOD | <i>NCOR2</i> | 12 | 124824721 | 124824721 | - | GCCGCTG CT | nonframeshift | NM_006312 | c.5517_5518insAGC AGCGGC | p.G1840delinsSS GG |
| 464 | BLOOD | <i>IL13</i> | 5 | 131995883 | 131995883 | A | G | nonsynonymous | NM_002188 | c.A350G | p.H117R |

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|-----|-------|------------------|----|-----------|-----------|-----|--------|---------------|--------------|--------------------|-----------------|
| 464 | BLOOD | <i>ARSD</i> | X | 2833605 | 2833605 | C | T | stopgain | NM_001669 | c.G992A | p.W331X |
| 465 | BLOOD | <i>TRNT1</i> | 3 | 3189350 | 3189350 | C | - | stopgain | NM_182916 | c.1019delC | p.S340X |
| 465 | BLOOD | <i>RPL14</i> | 3 | 40503520 | 40503520 | - | CTGCTG | nonframeshift | NM_001034996 | c.445_446insCTGCTG | p.T149delinsTAA |
| 465 | BLOOD | <i>BMP6</i> | 6 | 7727522 | 7727522 | - | AGC | nonframeshift | NM_001718 | c.334_335insAGC | p.E112delinsEQ |
| 465 | BLOOD | <i>LOC286238</i> | 9 | 91262343 | 91262343 | - | TGG | nonframeshift | NM_001100111 | c.299_300insCCA | p.H100delinsHH |
| 465 | BLOOD | <i>NT5C2</i> | 10 | 104865539 | 104865540 | GT | - | frameshift | NM_001134373 | c.312_313del | p.T104fs |
| 465 | BLOOD | <i>ZRANB1</i> | 10 | 126673560 | 126673560 | - | A | frameshift | NM_017580 | c.2127dupA | p.X709delinsX |
| 465 | BLOOD | <i>ARHGEF17</i> | 11 | 73020375 | 73020375 | - | CTC | nonframeshift | NM_014786 | c.692_693insCTC | p.C231delinsCS |
| 465 | BLOOD | <i>DYNC2H1</i> | 11 | 103124151 | 103124153 | ACA | - | nonframeshift | NM_001377 | c.10180_10182del | p.3394_3394del |
| 465 | BLOOD | <i>PRR21</i> | 2 | 240982219 | 240982219 | A | G | nonsynonymous | NM_001080835 | c.T181C | p.S61P |
| 465 | BLOOD | <i>PDCD6IP</i> | 3 | 33905532 | 33905532 | G | A | nonsynonymous | NM_013374 | c.G2155A | p.A719T |
| 465 | BLOOD | <i>COL7A1</i> | 3 | 48627789 | 48627789 | C | A | nonsynonymous | NM_000094 | c.G1907T | p.G636V |
| 465 | BLOOD | <i>IFRD2</i> | 3 | 50326292 | 50326292 | C | T | nonsynonymous | NM_006764 | c.G1154A | p.R385H |
| 465 | BLOOD | <i>CRIPAK</i> | 4 | 1389005 | 1389005 | T | C | nonsynonymous | NM_175918 | c.T706C | p.C236R |
| 465 | BLOOD | <i>CRIPAK</i> | 4 | 1389156 | 1389156 | T | C | nonsynonymous | NM_175918 | c.T857C | p.M286T |
| 465 | BLOOD | <i>CRIPAK</i> | 4 | 1389161 | 1389161 | A | G | nonsynonymous | NM_175918 | c.A862G | p.S288G |
| 465 | BLOOD | <i>KIAA0232</i> | 4 | 6864510 | 6864510 | G | C | nonsynonymous | NM_014743 | c.G2401C | p.E801Q |
| 465 | BLOOD | <i>CPZ</i> | 4 | 8616160 | 8616160 | C | G | nonsynonymous | NM_001014447 | c.C1438G | p.P480A |
| 465 | BLOOD | <i>TAPT1</i> | 4 | 16165022 | 16165022 | G | A | nonsynonymous | NM_153365 | c.C1613T | p.T538M |
| 465 | BLOOD | <i>ZFP62</i> | 5 | 180277941 | 180277941 | C | T | nonsynonymous | NM_001172638 | c.G554A | p.R185Q |
| 465 | BLOOD | <i>CAGE1</i> | 6 | 7378978 | 7378978 | G | A | nonsynonymous | NM_001170692 | c.C559T | p.P187S |
| 465 | BLOOD | <i>TNXB</i> | 6 | 32024617 | 32024617 | C | T | nonsynonymous | NM_019105 | c.G7889A | p.R2630H |
| 465 | BLOOD | <i>HLA-DRB1</i> | 6 | 32549452 | 32549452 | C | G | nonsynonymous | NM_002124 | c.G534C | p.Q178H |
| 465 | BLOOD | <i>HLA-DRB1</i> | 6 | 32549481 | 32549481 | C | T | nonsynonymous | NM_002124 | c.G505A | p.A169T |

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|-----|-------|-----------------|----|-----------|-----------|---|---|---------------|--------------|-----------|----------|
| 465 | BLOOD | <i>HLA-DRB1</i> | 6 | 32549589 | 32549589 | A | C | nonsynonymous | NM_002124 | c.T397G | p.S133A |
| 465 | BLOOD | <i>HLA-DQB1</i> | 6 | 32629935 | 32629935 | C | G | nonsynonymous | NM_001243961 | c.G470C | p.G157A |
| 465 | BLOOD | <i>MAD1L1</i> | 7 | 2108927 | 2108927 | G | A | nonsynonymous | NM_001013836 | c.C1120T | p.R374W |
| 465 | BLOOD | <i>AMZ1</i> | 7 | 2748306 | 2748306 | A | C | nonsynonymous | NM_133463 | c.A557C | p.H186P |
| 465 | BLOOD | <i>ABCB5</i> | 7 | 20698156 | 20698156 | G | A | nonsynonymous | NM_001163941 | c.G1564A | p.G522R |
| 465 | BLOOD | <i>GLI3</i> | 7 | 42005492 | 42005492 | A | T | nonsynonymous | NM_000168 | c.T3179A | p.F1060Y |
| 465 | BLOOD | <i>CNTNAP3B</i> | 9 | 43822686 | 43822686 | C | A | nonsynonymous | NM_001201380 | c.C1240A | p.R414S |
| 465 | BLOOD | <i>CNTNAP3B</i> | 9 | 43822704 | 43822704 | G | A | nonsynonymous | NM_001201380 | c.G1258A | p.V420I |
| 465 | BLOOD | <i>CDH23</i> | 10 | 73377112 | 73377112 | G | A | nonsynonymous | NM_022124 | c.G1096A | p.A366T |
| 465 | BLOOD | <i>OPN4</i> | 10 | 88418253 | 88418253 | A | G | nonsynonymous | NM_033282 | c.A437G | p.Y146C |
| 465 | BLOOD | <i>C10orf12</i> | 10 | 98741556 | 98741556 | A | G | nonsynonymous | NM_015652 | c.A409G | p.T137A |
| 465 | BLOOD | <i>CCDC81</i> | 11 | 86126163 | 86126163 | C | A | nonsynonymous | NM_001156474 | c.C1499A | p.P500H |
| 465 | BLOOD | <i>UBTFL1</i> | 11 | 89819885 | 89819885 | A | T | nonsynonymous | NM_001143975 | c.A768T | p.R256S |
| 465 | BLOOD | <i>CNTN5</i> | 11 | 99690428 | 99690428 | T | G | nonsynonymous | NM_014361 | c.T209G | p.L70R |
| 465 | BLOOD | <i>IL10RA</i> | 11 | 117860305 | 117860305 | G | A | nonsynonymous | NM_001558 | c.G337A | p.V113I |
| 465 | BLOOD | <i>ADAMTS15</i> | 11 | 130343709 | 130343709 | C | T | nonsynonymous | NM_139055 | c.C2846T | p.P949L |
| 465 | BLOOD | <i>GPR12</i> | 13 | 27333463 | 27333463 | A | C | nonsynonymous | NM_005288 | c.T502G | p.S168A |
| 465 | BLOOD | <i>SPTBN5</i> | 15 | 42145586 | 42145586 | G | A | nonsynonymous | NM_016642 | c.C10040T | p.A3347V |
| 465 | BLOOD | <i>POLR2M</i> | 15 | 58004264 | 58004264 | G | A | nonsynonymous | NM_015532 | c.G841A | p.D281N |
| 465 | BLOOD | <i>DAPK2</i> | 15 | 64275867 | 64275867 | C | T | nonsynonymous | NM_014326 | c.G179A | p.R60Q |
| 465 | BLOOD | <i>IGFALS</i> | 16 | 1841158 | 1841158 | C | T | nonsynonymous | NM_004970 | c.G1261A | p.G421S |
| 465 | BLOOD | <i>NOMO1</i> | 16 | 14969016 | 14969016 | T | A | nonsynonymous | NM_014287 | c.T2178A | p.N726K |
| 465 | BLOOD | <i>RBL2</i> | 16 | 53513807 | 53513807 | A | C | nonsynonymous | NM_005611 | c.A2785C | p.S929R |
| 465 | BLOOD | <i>RFPL3</i> | 22 | 32756703 | 32756703 | C | T | nonsynonymous | NM_001098535 | c.C838T | p.R280C |
| 465 | BLOOD | <i>TMEM184B</i> | 22 | 38643921 | 38643921 | G | A | nonsynonymous | NM_012264 | c.C47T | p.T16M |

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|-----|-------|-----------------|----|-----------|-----------|--|-------------------------|---------------|--------------|---------------------------------|-----------------------|
| 472 | BLOOD | <i>KRTAP4-3</i> | 17 | 39324229 | 39324229 | - | GCAGCAG GTGGTCT G | nonframeshift | NM_033187 | c.195_196insCAGAC CACCTGCTGC | p.R66delinsQTTC CR |
| 472 | BLOOD | <i>CAND2</i> | 3 | 12857978 | 12857978 | A | T | nonsynonymous | NM_001162499 | c.A1547T | p.H516L |
| 472 | BLOOD | <i>RXFP3</i> | 5 | 33937753 | 33937753 | A | G | nonsynonymous | NM_016568 | c.A908G | p.K303R |
| 472 | BLOOD | <i>TPMT</i> | 6 | 18130993 | 18130993 | C | T | nonsynonymous | NM_000367 | c.G644A | p.R215H |
| 472 | BLOOD | <i>HLA-A</i> | 6 | 29911227 | 29911227 | G | T | stopgain | NM_002116 | c.G526T | p.E176X |
| 472 | BLOOD | <i>RMND1</i> | 6 | 151744745 | 151744745 | C | G | nonsynonymous | NM_017909 | c.G852C | p.R284S |
| 472 | BLOOD | <i>SCIN</i> | 7 | 12680060 | 12680060 | A | G | nonsynonymous | NM_001112706 | c.A1499G | p.K500R |
| 472 | BLOOD | <i>KMT2C</i> | 7 | 151932991 | 151932991 | G | A | nonsynonymous | NM_170606 | c.C2680T | p.R894W |
| 472 | BLOOD | <i>CCDC172</i> | 10 | 118084877 | 118084877 | G | A | nonsynonymous | NM_198515 | c.G142A | p.E48K |
| 472 | BLOOD | <i>TAS2R31</i> | 12 | 11183576 | 11183576 | T | C | nonsynonymous | NM_176885 | c.A359G | p.H120R |
| 472 | BLOOD | <i>EFNB3</i> | 17 | 7611965 | 7611965 | G | C | nonsynonymous | NM_001406 | c.G521C | p.G174A |
| 472 | BLOOD | <i>CACNA1G</i> | 17 | 48703943 | 48703943 | G | A | nonsynonymous | NM_018896 | c.G6965A | p.R2322Q |
| 473 | BLOOD | <i>IRF5</i> | 7 | 128587352 | 128587381 | ACTCTGCA GCCGCCCA CTCTGCGG CCGCCT | - | nonframeshift | NM_001098630 | c.502_531del | p.168_177del |
| 473 | BLOOD | <i>SMARCA2</i> | 9 | 2039777 | 2039779 | CAG | - | nonframeshift | NM_001289396 | c.667_669del | p.223_223del |
| 473 | BLOOD | <i>IGFALS</i> | 16 | 1842406 | 1842406 | - | G | frameshift | NM_001146006 | c.126dupC | p.A43fs |
| 473 | BLOOD | <i>DVLI</i> | 1 | 1273395 | 1273395 | C | T | nonsynonymous | NM_004421 | c.G1601A | p.S534N |
| 473 | BLOOD | <i>TP73</i> | 1 | 3647615 | 3647615 | C | A | nonsynonymous | NM_005427 | c.C1470A | p.D490E |
| 473 | BLOOD | <i>PLEKHM2</i> | 1 | 16055209 | 16055209 | A | G | nonsynonymous | NM_015164 | c.A1967G | p.N656S |
| 473 | BLOOD | <i>SLC25A34</i> | 1 | 16064670 | 16064670 | G | A | nonsynonymous | NM_207348 | c.G527A | p.R176Q |
| 473 | BLOOD | <i>DNAJC8</i> | 1 | 28559436 | 28559436 | C | G | nonsynonymous | NM_014280 | c.G74C | p.S25T |

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|-----|-------|------------------|----|-----------|-----------|---|---|---------------|--------------|----------|----------|
| 473 | BLOOD | <i>SEC16B</i> | 1 | 177937065 | 177937065 | C | T | nonsynonymous | NM_033127 | c.G52A | p.A18T |
| 473 | BLOOD | <i>RYR2</i> | 1 | 237868623 | 237868623 | A | G | nonsynonymous | NM_001035 | c.A9560G | p.K3187R |
| 473 | BLOOD | <i>DIS3L2</i> | 2 | 232995389 | 232995389 | C | G | nonsynonymous | NM_152383 | c.C662G | p.T221R |
| 473 | BLOOD | <i>ALS2CL</i> | 3 | 46730845 | 46730845 | T | C | nonsynonymous | NM_147129 | c.A86G | p.Q29R |
| 473 | BLOOD | <i>GRID2</i> | 4 | 94436437 | 94436437 | C | A | nonsynonymous | NM_001510 | c.C2068A | p.H690N |
| 473 | BLOOD | <i>TRIO</i> | 5 | 14508484 | 14508484 | C | T | nonsynonymous | NM_007118 | c.C9247T | p.R3083C |
| 473 | BLOOD | <i>LOC441155</i> | 6 | 66014503 | 66014503 | G | A | nonsynonymous | NM_001271675 | c.G2089A | p.A697T |
| 473 | BLOOD | <i>KIF20B</i> | 10 | 91484779 | 91484779 | A | C | nonsynonymous | NM_001284259 | c.A1865C | p.E622A |
| 473 | BLOOD | <i>TRPM5</i> | 11 | 2439507 | 2439507 | G | T | nonsynonymous | NM_014555 | c.C796A | p.L266I |
| 473 | BLOOD | <i>GJB6</i> | 13 | 20797144 | 20797144 | T | C | nonsynonymous | NM_001110219 | c.A476G | p.N159S |
| 473 | BLOOD | <i>CCDC78</i> | 16 | 775540 | 775540 | C | T | nonsynonymous | NM_001031737 | c.G308A | p.R103Q |
| 473 | BLOOD | <i>CLCN7</i> | 16 | 1498408 | 1498408 | G | A | nonsynonymous | NM_001287 | c.C1961T | p.T654M |
| 473 | BLOOD | <i>MC1R</i> | 16 | 89986252 | 89986252 | T | C | nonsynonymous | NM_002386 | c.T586C | p.F196L |
| 473 | BLOOD | <i>SGSM2</i> | 17 | 2264988 | 2264988 | G | A | nonsynonymous | NM_001098509 | c.G191A | p.R64H |
| 473 | BLOOD | <i>MINK1</i> | 17 | 4795722 | 4795722 | A | C | nonsynonymous | NM_153827 | c.A2113C | p.I705L |
| 473 | BLOOD | <i>GPR179</i> | 17 | 36485883 | 36485883 | C | T | nonsynonymous | NM_001004334 | c.G3569A | p.R1190Q |
| 473 | BLOOD | <i>KRTAP4-6</i> | 17 | 39296361 | 39296361 | A | G | nonsynonymous | NM_030976 | c.T379C | p.S127P |
| 473 | BLOOD | <i>CCDC57</i> | 17 | 80159796 | 80159796 | C | T | nonsynonymous | NM_198082 | c.G25A | p.A9T |
| 473 | BLOOD | <i>POLRMT</i> | 19 | 620005 | 620005 | C | T | nonsynonymous | NM_005035 | c.G2839A | p.E947K |
| 473 | BLOOD | <i>CLEC4G</i> | 19 | 7794969 | 7794969 | G | A | nonsynonymous | NM_198492 | c.C563T | p.A188V |
| 473 | BLOOD | <i>SNAPC2</i> | 19 | 7987428 | 7987428 | C | T | nonsynonymous | NM_003083 | c.C784T | p.R262C |
| 473 | BLOOD | <i>FBN3</i> | 19 | 8212232 | 8212232 | C | T | nonsynonymous | NM_032447 | c.G133A | p.V45M |
| 473 | BLOOD | <i>ZNF726</i> | 19 | 24116119 | 24116119 | G | A | nonsynonymous | NM_001244038 | c.G1201A | p.E401K |
| 473 | BLOOD | <i>VCX</i> | X | 7811747 | 7811747 | T | C | nonsynonymous | NM_013452 | c.T311C | p.L104P |
| 473 | BLOOD | <i>SUPT20HL2</i> | X | 24329890 | 24329890 | G | C | nonsynonymous | NM_001136233 | c.C1543G | p.P515A |

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|-----|-------|-----------------|----|-----------|-----------|---------------------|----------------------------|---------------|--------------|--|-------------------------|
| 473 | BLOOD | <i>MAGEB18</i> | X | 26157220 | 26157220 | C | T | nonsynonymous | NM_173699 | c.C118T | p.P40S |
| 473 | BLOOD | <i>FAM155B</i> | X | 68749438 | 68749438 | G | A | nonsynonymous | NM_015686 | c.G1058A | p.R353H |
| 473 | BLOOD | <i>NHSL2</i> | X | 71360100 | 71360100 | C | T | nonsynonymous | NM_001013627 | c.C2702T | p.T901I |
| 473 | BLOOD | <i>ZCCHC5</i> | X | 77913569 | 77913569 | G | A | nonsynonymous | NM_152694 | c.C349T | p.P117S |
| 473 | BLOOD | <i>ZNF185</i> | X | 152083059 | 152083059 | G | A | nonsynonymous | NM_007150 | c.G26A | p.R9H |
| 473 | BLOOD | <i>SLC10A3</i> | X | 153716220 | 153716220 | C | T | nonsynonymous | NM_001142392 | c.G1060A | p.V354I |
| 474 | BLOOD | <i>IL33</i> | 9 | 6254555 | 6254555 | - | A | splicing | NM_001199641 | c.234+2->A | |
| 474 | BLOOD | <i>AKR1C4</i> | 10 | 5255003 | 5255003 | G | A | nonsynonymous | NM_001818 | c.G727A | p.A243T |
| 474 | BLOOD | <i>ONECUT1</i> | 15 | 53082004 | 53082004 | G | C | nonsynonymous | NM_004498 | c.C78G | p.D26E |
| 474 | BLOOD | <i>C17orf59</i> | 17 | 8093152 | 8093152 | C | T | nonsynonymous | NM_017622 | c.G307A | p.E103K |
| 475 | BLOOD | <i>UBXN11</i> | 1 | 26608878 | 26608883 | CCGGGA | - | nonframeshift | NM_001077262 | c.1110_1115del | p.370_372del |
| 475 | BLOOD | <i>PDLIM3</i> | 4 | 186425729 | 186425729 | C | - | frameshift | NM_014476 | c.805delG | p.A269fs |
| 475 | BLOOD | <i>TUBGCP3</i> | 13 | 113201853 | 113201867 | TGGGAAAG TCGCGCG | - | nonframeshift | NM_001286279 | c.1235_1249del | p.412_417del |
| 475 | BLOOD | <i>SLC5A10</i> | 17 | 18918510 | 18918510 | - | CGGTACG GGGGTGG GGGC | nonframeshift | NM_001042450 | c.1239_1240insCGG TACGGGGGTGGG GGC | p.G413delinsGR YGGGG |
| 475 | BLOOD | <i>CROCC</i> | 1 | 17256695 | 17256695 | G | A | nonsynonymous | NM_014675 | c.G614A | p.R205Q |
| 475 | BLOOD | <i>RBMXL1</i> | 1 | 89449298 | 89449298 | C | G | nonsynonymous | NM_019610 | c.G212C | p.G71A |
| 475 | BLOOD | <i>RBMXL1</i> | 1 | 89449390 | 89449390 | T | C | nonsynonymous | NM_019610 | c.A120G | p.I40M |
| 475 | BLOOD | <i>CWH43</i> | 4 | 49034606 | 49034606 | C | A | nonsynonymous | NM_025087 | c.C1532A | p.P511Q |
| 475 | BLOOD | <i>PRDM5</i> | 4 | 121739628 | 121739628 | G | C | nonsynonymous | NM_018699 | c.C530G | p.T177S |
| 475 | BLOOD | <i>UBE3D</i> | 6 | 83667038 | 83667038 | G | T | nonsynonymous | NM_198920 | c.C1142A | p.S381Y |
| 475 | BLOOD | <i>SYNE1</i> | 6 | 152540278 | 152540278 | A | C | nonsynonymous | NM_182961 | c.T21904G | p.F7302V |
| 475 | BLOOD | <i>FNDCl</i> | 6 | 159652953 | 159652953 | G | C | nonsynonymous | NM_032532 | c.G1409C | p.G470A |

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|-----|-------|----------------|----|-----------|-----------|---|---|---------------|--------------|----------|----------|
| 475 | BLOOD | <i>CCDC129</i> | 7 | 31692270 | 31692270 | G | A | nonsynonymous | NM_194300 | c.G2962A | p.D988N |
| 475 | BLOOD | <i>CFTR</i> | 7 | 117232305 | 117232305 | A | G | nonsynonymous | NM_000492 | c.A2084G | p.E695G |
| 475 | BLOOD | <i>ZNF212</i> | 7 | 148950691 | 148950691 | G | A | nonsynonymous | NM_012256 | c.G673A | p.E225K |
| 475 | BLOOD | <i>ZNF862</i> | 7 | 149557663 | 149557663 | C | G | nonsynonymous | NM_001099220 | c.C1414G | p.Q472E |
| 475 | BLOOD | <i>ASIC3</i> | 7 | 150747896 | 150747896 | C | T | nonsynonymous | NM_004769 | c.C865T | p.P289S |
| 475 | BLOOD | <i>TBC1D2</i> | 9 | 100962566 | 100962566 | G | A | nonsynonymous | NM_018421 | c.C2515T | p.R839C |
| 475 | BLOOD | <i>MUC5B</i> | 11 | 1267972 | 1267972 | A | G | nonsynonymous | NM_002458 | c.A9862G | p.R3288G |
| 475 | BLOOD | <i>SYT8</i> | 11 | 1856622 | 1856622 | G | A | nonsynonymous | NM_001290334 | c.G230A | p.R77K |
| 475 | BLOOD | <i>CNTN5</i> | 11 | 99690461 | 99690461 | A | G | nonsynonymous | NM_014361 | c.A242G | p.N81S |
| 475 | BLOOD | <i>TPSAB1</i> | 16 | 1291622 | 1291622 | A | G | nonsynonymous | NM_003294 | c.A421G | p.T141A |
| 475 | BLOOD | <i>NCOR1</i> | 17 | 16097870 | 16097870 | C | A | nonsynonymous | NM_006311 | c.G14T | p.G5V |
| 475 | BLOOD | <i>FLII</i> | 17 | 18150086 | 18150086 | T | G | nonsynonymous | NM_002018 | c.A2873C | p.K958T |
| 475 | BLOOD | <i>KRT14</i> | 17 | 39743014 | 39743014 | C | T | nonsynonymous | NM_000526 | c.G73A | p.G25R |
| 475 | BLOOD | <i>TMEM100</i> | 17 | 53798158 | 53798158 | C | A | nonsynonymous | NM_001099640 | c.G274T | p.V92F |
| 475 | BLOOD | <i>TMC8</i> | 17 | 76133356 | 76133356 | G | A | nonsynonymous | NM_152468 | c.G1168A | p.V390I |
| 475 | BLOOD | <i>ARSD</i> | X | 2835863 | 2835863 | G | T | nonsynonymous | NM_001669 | c.C845A | p.A282D |
| 475 | BLOOD | <i>ARSD</i> | X | 2836041 | 2836041 | A | T | nonsynonymous | NM_001669 | c.T667A | p.F223I |
| 475 | BLOOD | <i>ARSD</i> | X | 2836211 | 2836211 | A | T | nonsynonymous | NM_001669 | c.T497A | p.L166Q |
| 475 | BLOOD | <i>ARSD</i> | X | 2836238 | 2836238 | G | A | nonsynonymous | NM_001669 | c.C470T | p.S157F |
| 475 | BLOOD | <i>RBMX</i> | X | 135957672 | 135957672 | A | T | nonsynonymous | NM_002139 | c.T614A | p.V205D |
| 475 | BLOOD | <i>RBMX</i> | X | 135957690 | 135957690 | A | G | nonsynonymous | NM_002139 | c.T596C | p.L199P |
| 475 | BLOOD | <i>RBMX</i> | X | 135957700 | 135957700 | T | C | nonsynonymous | NM_002139 | c.A586G | p.R196G |
| 475 | BLOOD | <i>RBMX</i> | X | 135957716 | 135957716 | A | G | nonsynonymous | NM_001164803 | c.T245C | p.M82T |
| 475 | BLOOD | <i>RBMX</i> | X | 135958730 | 135958730 | C | A | nonsynonymous | NM_002139 | c.G473T | p.G158V |
| 475 | BLOOD | <i>RBMX</i> | X | 135961560 | 135961560 | C | G | nonsynonymous | NM_002139 | c.G27C | p.K9N |

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|-----|-------|-----------------|----|-----------|-----------|--|---------------|---------------|--------------|---------------------------|---------------------|
| 476 | BLOOD | <i>LURAPIL</i> | 9 | 12775861 | 12775861 | - | GGCGGCG GC | nonframeshift | NM_203403 | c.147_148insGGCGG CGGC | p.G49delinsGGG G |
| 476 | BLOOD | <i>CCDC180</i> | 9 | 100092968 | 100092968 | - | GAGGAG | nonframeshift | NM_020893 | c.2325_2326insGAG GAG | p.E775delinsEEE |
| 476 | BLOOD | <i>KRT1</i> | 12 | 53069223 | 53069243 | ACCTCCGG AGCCGTAG CTGCT | - | nonframeshift | NM_006121 | c.1669_1689del | p.557_563del |
| 476 | BLOOD | <i>C17orf97</i> | 17 | 263586 | 263645 | GACCCCGA GGCCCTCA AGGGCTTC CACCCCGA CCCCAAGG CCCTCAAG GGCTTCCA CCCC | - | nonframeshift | NM_001013672 | c.952_1011del | p.318_337del |
| 477 | BLOOD | <i>HOXB3</i> | 17 | 46628510 | 46628518 | CCGCCGCC A | - | nonframeshift | NM_002146 | c.474_482del | p.158_161del |
| 477 | BLOOD | <i>CD4</i> | 12 | 6927665 | 6927665 | T | C | nonsynonymous | NM_000616 | c.T1235C | p.I412T |
| 477 | BLOOD | <i>TLK2</i> | 17 | 60679498 | 60679498 | G | A | nonsynonymous | NM_001284333 | c.G1882A | p.V628M |
| 478 | BLOOD | <i>SEC16B</i> | 1 | 177901883 | 177901883 | G | A | nonsynonymous | NM_033127 | c.C2882T | p.S961F |
| 478 | BLOOD | <i>OTOP1</i> | 4 | 4228425 | 4228425 | T | C | nonsynonymous | NM_177998 | c.A167G | p.K56R |
| 71 | BLOOD | <i>FLG</i> | 1 | 152277587 | 152277587 | C | T | nonsynonymous | NM_002016 | c.G9775A | p.E3259K |
| 71 | BLOOD | <i>GPR62</i> | 3 | 51990315 | 51990315 | A | G | nonsynonymous | NM_080865 | c.A647G | p.H216R |
| 71 | BLOOD | <i>MEOX2</i> | 7 | 15725823 | 15725823 | G | T | nonsynonymous | NM_005924 | c.C205A | p.H69N |
| 71 | BLOOD | <i>GAB2</i> | 11 | 77991757 | 77991757 | T | C | nonsynonymous | NM_080491 | c.A266G | p.K89R |
| 71 | BLOOD | <i>ARSD</i> | X | 2836211 | 2836211 | A | T | nonsynonymous | NM_001669 | c.T497A | p.L166Q |

| | | | | | | | | | | | |
|----|-------|-----------------|----|-----------|-----------|----------------------------------|--------|---------------|--------------|--------------------------|-----------------|
| 85 | BLOOD | <i>IGSF3</i> | 1 | 117122285 | 117122285 | - | TCC | nonframeshift | NM_001007237 | c.3062_3063insGGA | p.D1021delinsED |
| 85 | BLOOD | <i>EPHB6</i> | 7 | 142562051 | 142562051 | - | CCTCCT | nonframeshift | NM_004445 | c.493_494insCCTCC T | p.P165delinsPSS |
| 85 | BLOOD | <i>OR13C2</i> | 9 | 107367393 | 107367396 | GTTA | - | frameshift | NM_001004481 | c.513_516del | p.N171fs |
| 85 | BLOOD | <i>THSD4</i> | 15 | 72063463 | 72063468 | ATGACT | - | nonframeshift | NM_024817 | c.2830_2835del | p.944_945del |
| 85 | BLOOD | <i>RBMX</i> | X | 135960146 | 135960146 | - | AA | frameshift | NM_002139 | c.315_316insTT | p.P106fs |
| 85 | BLOOD | <i>ECHDC2</i> | 1 | 53373560 | 53373560 | C | T | nonsynonymous | NM_001198961 | c.G344A | p.R115Q |
| 85 | BLOOD | <i>SPINK4</i> | 9 | 33240216 | 33240216 | C | T | nonsynonymous | NM_014471 | c.C10T | p.R4C |
| 85 | BLOOD | <i>COL15A1</i> | 9 | 101747877 | 101747877 | C | T | nonsynonymous | NM_001855 | c.C131T | p.T44M |
| 85 | BLOOD | <i>SLC34A3</i> | 9 | 140127809 | 140127809 | G | A | nonsynonymous | NM_001177316 | c.G709A | p.D237N |
| 85 | BLOOD | <i>COL13A1</i> | 10 | 71658478 | 71658478 | G | A | nonsynonymous | NM_001130103 | c.G740A | p.R247Q |
| 85 | BLOOD | <i>OR1D5</i> | 17 | 2966273 | 2966273 | G | A | nonsynonymous | NM_014566 | c.C629T | p.P210L |
| 85 | BLOOD | <i>ARSD</i> | X | 2836041 | 2836041 | A | T | nonsynonymous | NM_001669 | c.T667A | p.F223I |
| 85 | BLOOD | <i>ARSD</i> | X | 2836181 | 2836181 | A | T | nonsynonymous | NM_001669 | c.T527A | p.M176K |
| 85 | BLOOD | <i>RBMX</i> | X | 135961560 | 135961560 | C | G | nonsynonymous | NM_002139 | c.G27C | p.K9N |
| 92 | BLOOD | <i>AKAP2</i> | 9 | 112900341 | 112900341 | - | GAAGCT | nonframeshift | NM_001136562 | c.1824_1825insGAA GCT | p.E608delinsEEA |
| 92 | BLOOD | <i>TARP</i> | 7 | 38299727 | 38299727 | T | C | nonsynonymous | NM_001003806 | c.A298G | p.R100G |
| 92 | BLOOD | <i>ABCA13</i> | 7 | 48318185 | 48318185 | C | A | nonsynonymous | NM_152701 | c.C7394A | p.P2465H |
| 92 | BLOOD | <i>DGKZ</i> | 11 | 46401108 | 46401108 | C | G | nonsynonymous | NM_001105540 | c.C3227G | p.T1076R |
| 92 | BLOOD | <i>KRTAP2-4</i> | 17 | 39221816 | 39221816 | C | T | stopgain | NM_033184 | c.G282A | p.W94X |
| 92 | BLOOD | <i>CDC27</i> | 17 | 45214528 | 45214528 | A | T | nonsynonymous | NM_001256 | c.T1903A | p.Y635N |
| 94 | BLOOD | <i>ODF1</i> | 8 | 103573011 | 103573037 | TGCAACCC CTGCAGCC CCTGCAAC | - | nonframeshift | NM_024410 | c.652_678del | p.218_226del |

| | | | | | | CCG | | | | | |
|----|-------|-----------------|----|-----------|-----------|--|-----|---------------|--------------|-----------------|----------------|
| 94 | BLOOD | <i>PDPR</i> | 16 | 70182390 | 70182390 | T | G | nonsynonymous | NM_017990 | c.T1986G | p.N662K |
| 95 | BLOOD | <i>FAM177A1</i> | 14 | 35515790 | 35515790 | - | G | frameshift | NM_001289022 | c.52_53insG | p.S18fs |
| 95 | BLOOD | <i>OBSCN</i> | 1 | 228527662 | 228527662 | C | T | stopgain | NM_001098623 | c.C17275T | p.Q5759X |
| 95 | BLOOD | <i>SLC4A7</i> | 3 | 27475512 | 27475512 | G | A | nonsynonymous | NM_003615 | c.C646T | p.H216Y |
| 95 | BLOOD | <i>NID2</i> | 14 | 52520542 | 52520542 | G | A | nonsynonymous | NM_007361 | c.C1184T | p.A395V |
| 95 | BLOOD | <i>CYP46A1</i> | 14 | 100182146 | 100182146 | G | A | splicing | NM_006668 | c.694-1G>A | |
| 95 | BLOOD | <i>CLTCL1</i> | 22 | 19213150 | 19213150 | C | A | nonsynonymous | NM_007098 | c.G1954T | p.V652F |
| 96 | BLOOD | <i>CUL7</i> | 6 | 43014020 | 43014020 | C | T | nonsynonymous | NM_014780 | c.G2614A | p.G872S |
| 96 | BLOOD | <i>NCOR2</i> | 12 | 124887052 | 124887052 | G | A | nonsynonymous | NM_006312 | c.C1538T | p.P513L |
| 96 | BLOOD | <i>ADAMTS7</i> | 15 | 79051801 | 79051801 | C | A | nonsynonymous | NM_014272 | c.G5023T | p.A1675S |
| 96 | BLOOD | <i>UBASH3A</i> | 21 | 43852221 | 43852221 | G | T | nonsynonymous | NM_018961 | c.G1180T | p.A394S |
| 97 | BLOOD | <i>MAP3K1</i> | 5 | 56177849 | 56177851 | CAA | - | nonframeshift | NM_005921 | c.2822_2824del | p.941_942del |
| 97 | BLOOD | <i>IRF5</i> | 7 | 128587352 | 128587381 | ACTCTGCA GCCGCCCA CTCTGCGG CCGCCT | - | nonframeshift | NM_001098630 | c.502_531del | p.168_177del |
| 97 | BLOOD | <i>TSPAN10</i> | 17 | 79614933 | 79614936 | TAAC | - | splicing | | | |
| 97 | BLOOD | <i>ANXA6</i> | 5 | 150519008 | 150519008 | C | A | nonsynonymous | NM_001193544 | c.G14T | p.G5V |
| 97 | BLOOD | <i>RNF112</i> | 17 | 19318849 | 19318849 | G | A | nonsynonymous | NM_007148 | c.G1369A | p.D457N |
| 97 | BLOOD | <i>VTN</i> | 17 | 26696768 | 26696768 | A | G | nonsynonymous | NM_000638 | c.T289C | p.S97P |
| 98 | BLOOD | <i>EIF2B4</i> | 2 | 27590971 | 27590971 | C | A | nonsynonymous | NM_001034116 | c.G626T | p.R209L |
| 99 | BLOOD | <i>TSPYL1</i> | 6 | 116600465 | 116600465 | - | CAC | nonframeshift | NM_003309 | c.528_529insGTG | p.K177delinsVK |
| 99 | BLOOD | <i>CCNO</i> | 5 | 54529298 | 54529298 | C | G | nonsynonymous | NM_021147 | c.G54C | p.R18S |
| 99 | BLOOD | <i>PCDHGB5</i> | 5 | 140779256 | 140779256 | T | C | nonsynonymous | NM_018925 | c.T1562C | p.L521P |

| | | | | | | | | | | | |
|----|-------|----------------|----|-----------|-----------|---|---|---------------|--------------|----------|----------|
| 99 | BLOOD | <i>HK3</i> | 5 | 176314060 | 176314060 | C | G | nonsynonymous | NM_002115 | c.G1800C | p.Q600H |
| 99 | BLOOD | <i>MAPK13</i> | 6 | 36099050 | 36099050 | C | T | nonsynonymous | NM_002754 | c.C122T | p.S41L |
| 99 | BLOOD | <i>IBTK</i> | 6 | 82943903 | 82943903 | G | T | nonsynonymous | NM_015525 | c.C391A | p.P131T |
| 99 | BLOOD | <i>CFAP46</i> | 10 | 134660470 | 134660470 | G | C | nonsynonymous | NM_001200049 | c.C6233G | p.P2078R |
| 99 | BLOOD | <i>FSCN2</i> | 17 | 79495969 | 79495969 | C | T | nonsynonymous | NM_012418 | c.C412T | p.H138Y |
| 99 | BLOOD | <i>ARHGAP6</i> | X | 11157535 | 11157535 | G | C | nonsynonymous | NM_013427 | c.C2373G | p.D791E |