

C30F12.4 influences oogenesis, fat metabolism and lifespan in *C.elegans*

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Figure S1: Brood size of wild type and *c30f12.4* RNAi worms. All experiments were performed for three independent trials with at least 5 individuals per strain, once. * $p < 0.05$, *t*-test.

Figure S2: Real-time PCR analysis of *fat-5* and *fat-7* gene expression in total RNAs from late L4 stage of N2 and *c30f12.4* mutant worms. * $P < 0.05$, *t*-test.

Figure S3: GFP::C30F12.4 was specifically expressed and located in germ cells and early embryos. Scale bar = 20 μ m.

Figure S4: Brood size of wild-type, *c30f12.4* (ust 043) and *c30f12.4; c30f12.4::gfp* worms. Greater than five animals per trial, average of three trials. *** $p < 0.001$, *t*-test.

Figure S5: Co-immunoprecipitation (IP) using antibodies to GFP, followed by commassie blue staining and Western blotting using an antibody to GFP in GFP::C30F12.4 and N2 worms.

Figure S6: Identification of GFP::C30F12.4 transgene worms by PCR (A) and Western blotting (B).

Table S1 List of primers

| Gene | Sequence (5' to 3') |
|----------------------------|---|
| <i>sgRNA#1</i> | Forward: GAGCCCCCACTCACGCCTGAGTTTTAGAGCTAGAAATAGC Reverse: TCAGGCGTGAGTGGGGGCTCAAACATTTAGATTGCAATT |
| <i>sgRNA#2</i> | Forward: GATGACTCAGATGGCTCAAAGTTTTAGAGCTAGAAATAGC Reverse: TTTGAGCCATCTGAGTCATCAAACATTTAGATTGCAATT |
| <i>c30f12.4 (mutation)</i> | Forward: GCTCAAGATGACAATTAATCCGACT Reverse: GACTAACCTTTCTCAATCGATCTTG |
| <i>pc30f12.4</i> | Forward: <u>C</u> GTGGATCCAGATATCCTGCAGGTTAGTTATAAAAAGCTTCGT Reverse: ATCAGTCGGATTAATTGTCATCTTGAGCAACGATTTCCGA |
| 3×FLAG-GFP | Forward: ATGACAATTAATCCGACTGATATGGACTACAAAGACCATGA Reverse: TCAGTCGGATTAATTGTCATTTTGTATAGTTCATCCATGC |
| <i>c30f12.4</i> + 3'UTR | Forward: ATGACAATTAATCCGACTGA Reverse: TATAAGATCTAAAAATAATTCAAGAAAGAAAC |

Table S2 Proteins from ME analysis which interacted with C30F12.4

| Group number | Protein name |
|--------------|--|
| 1 | Uncharacterized protein OS=Caenorhabditis elegans GN=CELE_T09B4.5 PE=4 SV=1 |
| 2 | Uncharacterized protein OS=Caenorhabditis elegans GN=hpo-10 PE=4 SV=1 |
| 3 | Inositol Polyphosphate-5-Phosphatase OS=Caenorhabditis elegans GN=inpp-1 PE=4 SV=1 |
| 4 | Serpentine Receptor, class T OS=Caenorhabditis elegans GN=srt-47 PE=4 SV=2 |
| 5 | Structural maintenance of chromosomes protein 3 OS=Caenorhabditis elegans GN=smc-3 PE=1 SV=1 |
| 6 | AEX-2 related neuropeptide Receptor OS=Caenorhabditis elegans GN=aexr-3 PE=4 SV=1 |
| 7 | Uncharacterized protein OS=Caenorhabditis elegans GN=CELE_F49H6.5 PE=4 SV=1 |
| 8 | Uncharacterized protein OS=Caenorhabditis elegans GN=CELE_F32B4.4 PE=1 SV=3 |
| 9 | 60S ribosomal protein L22 OS=Caenorhabditis elegans GN=rpl-22 PE=1 SV=3 |
| 10 | Uncharacterized protein OS=Caenorhabditis elegans GN=CELE_Y116A8A.150 PE=4 SV=1 |
| 11 | Uncharacterized protein OS=Caenorhabditis elegans GN=CELE_H28G03.2 PE=4 SV=1 |
| 12 | SCP-Like extracellular protein OS=Caenorhabditis elegans GN=scl-24 PE=4 SV=1 |
| 13 | WD repeat-containing protein wdr-5.3 OS=Caenorhabditis elegans GN=wdr-5.3 PE=3 SV=1 |
| 14 | Uncharacterized protein OS=Caenorhabditis elegans GN=CELE_T28D6.4 PE=4 SV=1 |
| 15 | Enhancer of Glp-One (Glp-1) OS=Caenorhabditis elegans GN=ego-1 PE=2 SV=1 |
| 16 | DAF-16/FOXO Controlled, germline Tumor affecting OS=Caenorhabditis elegans GN=dct-14 PE=4 SV=2 |
| 17 | Uncharacterized protein OS=Caenorhabditis elegans GN=CELE_W04E12.7 PE=4 SV=1 |
| 18 | Protein-tyrosine-phosphatase OS=Caenorhabditis elegans GN=CELE_W03F11.4 PE=4 SV=3 |
| 19 | ATP synthase lipid-binding protein, mitochondrial OS=Caenorhabditis elegans GN=Y82E9BR.3 PE=3 SV=1 |
| 20 | Uncharacterized protein OS=Caenorhabditis elegans GN=C55C3.6 PE=4 SV=1 |
| 21 | Cytochrome P450 family OS=Caenorhabditis elegans GN=cyp-33d1 PE=3 SV=1 |
| 22 | Uncharacterized protein OS=Caenorhabditis elegans GN=CELE_F12F6.1 PE=4 SV=1 |
| 23 | Uncharacterized protein OS=Caenorhabditis elegans GN=CELE_ZC373.4 PE=4 SV=1 |
| 24 | Tubulin alpha-8 chain OS=Caenorhabditis elegans GN=tba-8 PE=3 SV=2 |
| 25 | Uncharacterized protein OS=Caenorhabditis elegans GN=CELE_R03E9.2 PE=4 SV=3 |
| 26 | Ankyrin repeat and KH domain-containing protein R11A8.7 OS=Caenorhabditis elegans GN=R11A8.7 PE=3 SV=3 |
| 27 | Uncharacterized protein OS=Caenorhabditis elegans GN=CELE_F44A2.3 PE=4 SV=5 |

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| 28 | Uncharacterized protein OS=Caenorhabditis elegans GN=CELE_F15E6.6 PE=4 SV=3 |
| 29 | Serpentine Receptor, class W OS=Caenorhabditis elegans GN=srw-100 PE=4 SV=1 |
| 30 | QUAHog (Hedgehog related) OS=Caenorhabditis elegans GN=qua-1 PE=4 SV=1 |
| 31 | SET (Trithorax/polycomb) domain containing OS=Caenorhabditis elegans GN=set-30 PE=4 SV=3 |
| 32 | Uncharacterized protein OS=Caenorhabditis elegans GN=CELE_Y69A2AR.18 PE=3 SV=1 |
| 33 | Ig-like and fibronectin type-III domain-containing protein C27B7.7 OS=Caenorhabditis elegans GN=C27B7.7 PE=1 SV=2 |
| 34 | Uncharacterized protein OS=Caenorhabditis elegans GN=CELE_ZC15.3 PE=4 SV=1 |
| 35 | Uncharacterized protein OS=Caenorhabditis elegans GN=CELE_Y57G11B.1 PE=4 SV=1 |
| 36 | Auxilin OS=Caenorhabditis elegans GN=dnj-25 PE=2 SV=1 |
| 37 | Uncharacterized protein OS=Caenorhabditis elegans GN=CELE_F22B3.5 PE=4 SV=4 |
| 38 | Seven TM Receptor OS=Caenorhabditis elegans GN=str-12 PE=4 SV=2 |
| 39 | Peptidyl-prolyl cis-trans isomerase 4 OS=Caenorhabditis elegans GN=cyn-4 PE=1 SV=3 |
| 40 | Uncharacterized protein OS=Caenorhabditis elegans GN=CELE_Y39G10AR.11 PE=4 SV=1 |
| 41 | Ribosomal Protein, Large subunit OS=Caenorhabditis elegans GN=rpl-30 PE=1 SV=2 |
| 42 | Mitogen-activated protein kinase kinase kinase OS=Caenorhabditis elegans GN=gck-2 PE=4 SV=1 |
| 43 | Ran GTPase-activating protein 2 OS=Caenorhabditis elegans GN=ran-2 PE=4 SV=3 |
| 44 | Coiled-coil and C2 domain-containing protein 1-like OS=Caenorhabditis elegans GN=Y37H9A.3 PE=3 SV=2 |
| 45 | F-box A protein OS=Caenorhabditis elegans GN=fbxa-210 PE=4 SV=1 |
| 46 | ACTin OS=Caenorhabditis elegans GN=act-5 PE=1 SV=1 |
| 47 | Nose resistant to fluoxetine protein 6 OS=Caenorhabditis elegans GN=nrf-6 PE=1 SV=3 |
| 48 | MAM (Meprin, A5-protein, PTPmu) domain protein OS=Caenorhabditis elegans GN=mam-3 PE=4 SV=3 |
| 49 | Seven TM Receptor OS=Caenorhabditis elegans GN=str-119 PE=4 SV=1 |
| 50 | Formin-homology and zinc finger domains protein 1 OS=Caenorhabditis elegans GN=fozi-1 PE=3 SV=1 |
| 51 | Na/Ca eXchangers OS=Caenorhabditis elegans GN=nxc-9 PE=4 SV=1 |
| 52 | Heavy Metal Tolerance factor OS=Caenorhabditis elegans GN=hmt-1 PE=2 SV=1 |
| 53 | Uncharacterized protein OS=Caenorhabditis elegans GN=CELE_T23B3.1 PE=4 SV=1 |
| 54 | Cytosolic carboxypeptidase 6 OS=Caenorhabditis elegans GN=ccpp-6 PE=2 SV=2 |
| 55 | Seven TM Receptor OS=Caenorhabditis elegans GN=str-156 PE=4 SV=2 |
| 56 | Uncharacterized protein OS=Caenorhabditis elegans GN=CELE_F01F1.3 PE=4 SV=2 |
| 57 | SMAII OS=Caenorhabditis elegans GN=sma-10 PE=4 SV=1 |

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| 58 | ATP synthase subunit beta, mitochondrial OS=Caenorhabditis elegans GN=atp-2 PE=1 SV=2 |
| 59 | Uncharacterized protein OS=Caenorhabditis elegans GN=CELE_F19B2.7 PE=4 SV=4 |
| 60 | Nuclear hormone receptor family member nhr-19 OS=Caenorhabditis elegans GN=nhr-19 PE=1 SV=2 |
| 61 | Uncharacterized protein OS=Caenorhabditis elegans GN=C41G7.3 PE=4 SV=2 |
| 62 | TWIK family of potassium channels OS=Caenorhabditis elegans GN=twk-29 PE=3 SV=2 |
| 63 | Uncharacterized protein OS=Caenorhabditis elegans GN=C44H4.4 PE=4 SV=1 |
| 64 | Protein PAT1 homolog 1 OS=Caenorhabditis elegans GN=patr-1 PE=3 SV=2 |
| 65 | Homeobox protein cut-like ceh-44 OS=Caenorhabditis elegans GN=ceh-44 PE=3 SV=1 |
| 66 | Uncharacterized protein OS=Caenorhabditis elegans GN=CELE_ZC376.3 PE=4 SV=1 |
| 67 | Protein nipi-3 OS=Caenorhabditis elegans GN=nipi-3 PE=1 SV=1 |
| 68 | Ectonucleotide pyrophosphatase/phosphodiesterase C27A7.1 OS=Caenorhabditis elegans GN=C27A7.1 PE=1 SV=1 |
| 69 | Uncharacterized protein OS=Caenorhabditis elegans GN=C01B4.8 PE=4 SV=1 |
| 70 | Serpentine receptor class alpha-18 OS=Caenorhabditis elegans GN=sra-18 PE=3 SV=1 |
| 71 | F-box C protein OS=Caenorhabditis elegans GN=fbox-22 PE=4 SV=2 |
| 72 | BTB (Broad/complex/Tramtrack/Bric a brac) domain protein OS=Caenorhabditis elegans GN=btb-16 PE=4 SV=3 |
| 73 | Innexin-6 OS=Caenorhabditis elegans GN=inx-6 PE=2 SV=1 |
| 74 | Uncharacterized protein OS=Caenorhabditis elegans GN=CELE_F36A4.2 PE=4 SV=1 |

Fig. S1

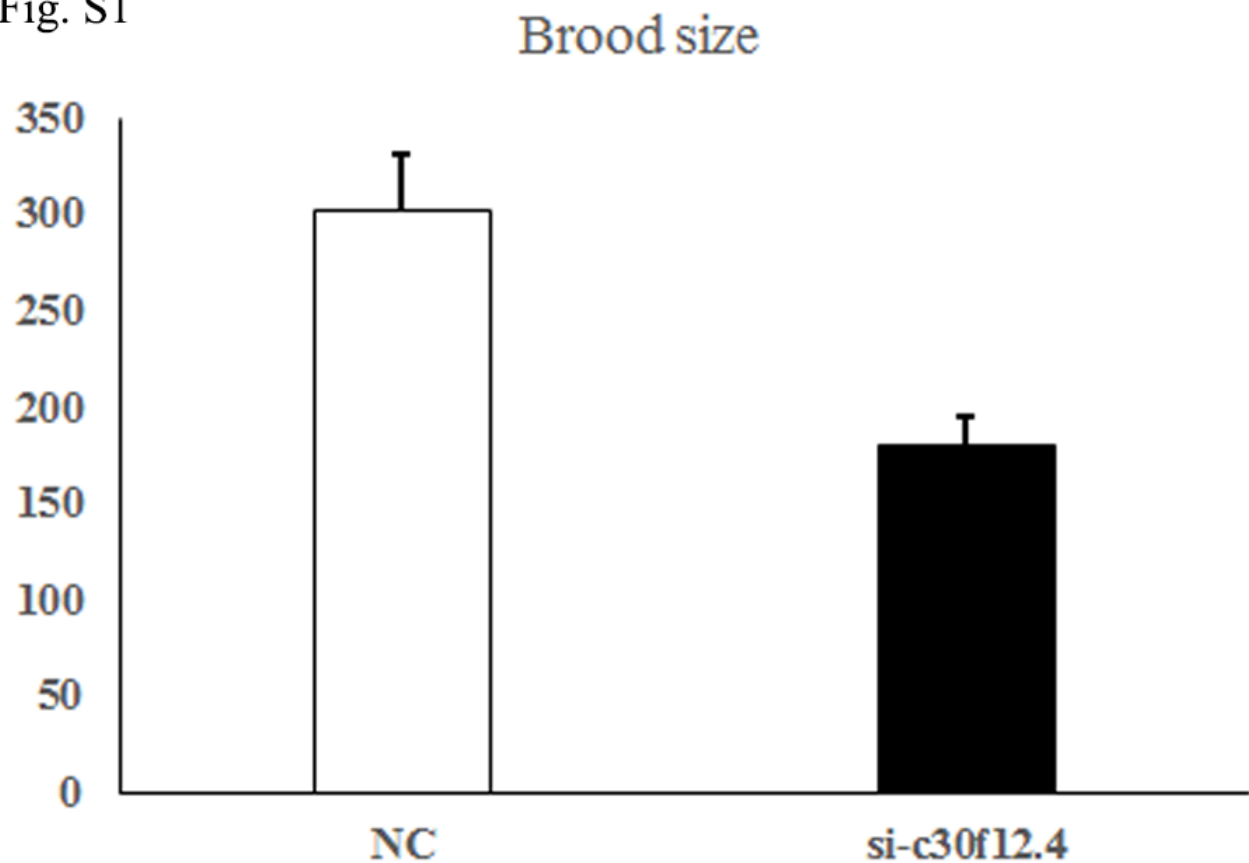


Fig. S2

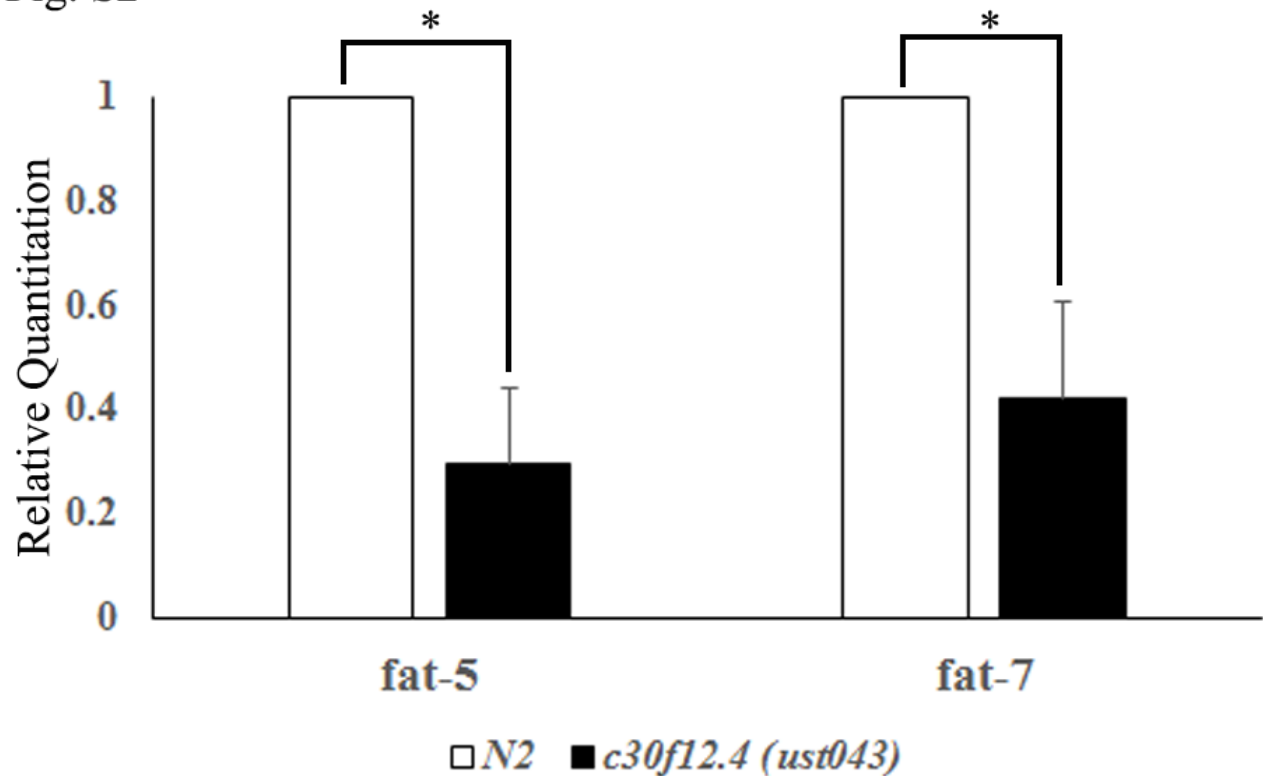
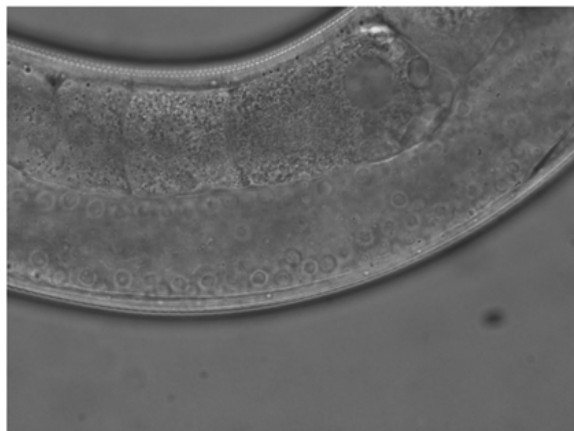
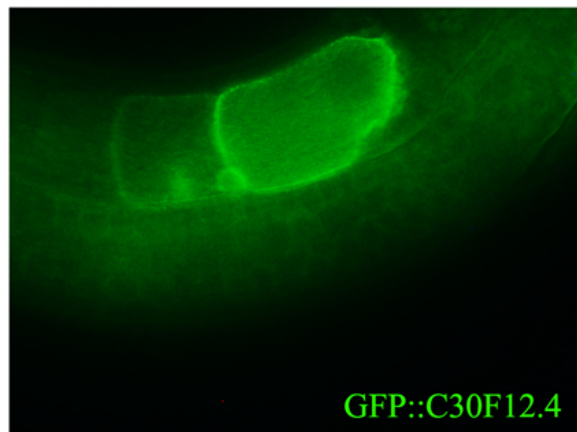


Fig .S3

A



B

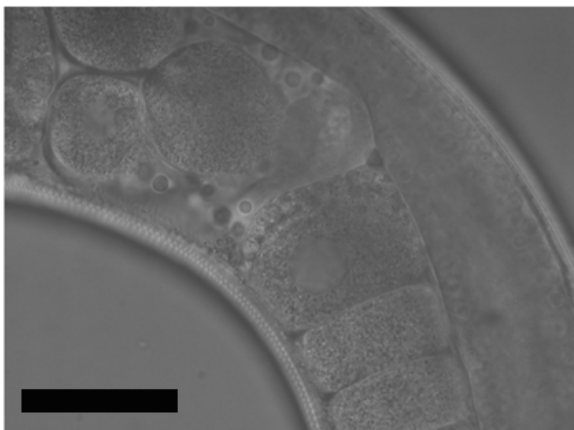
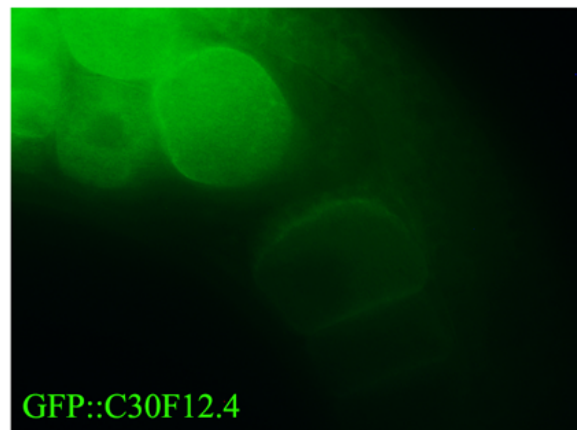


Fig. S4

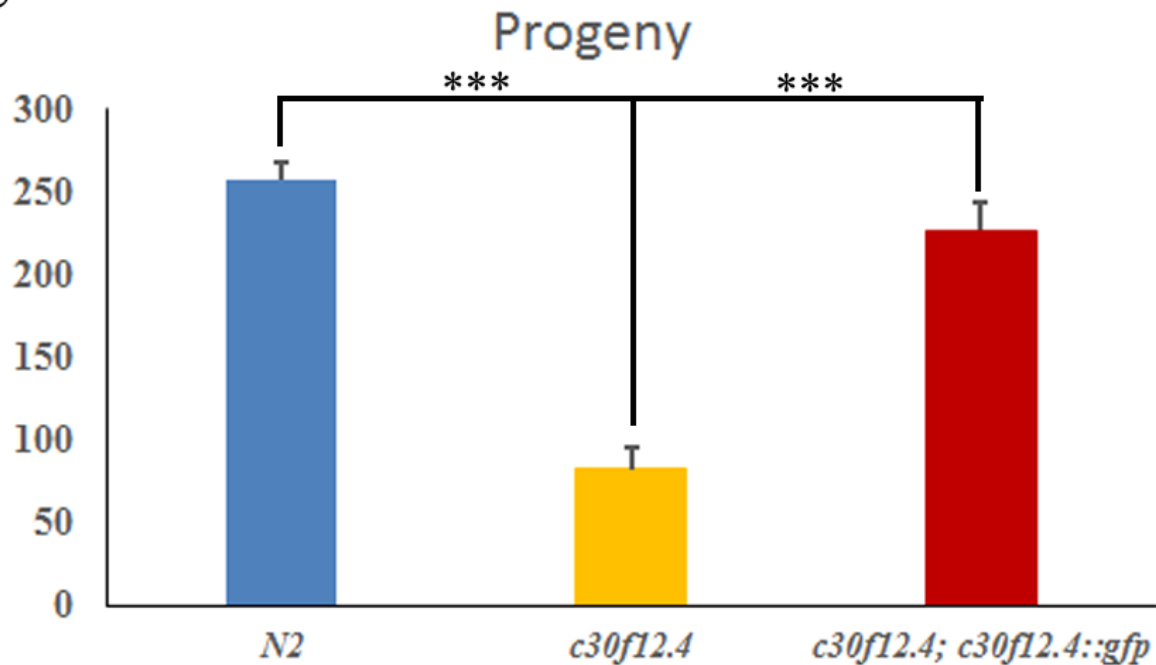


Fig. S5

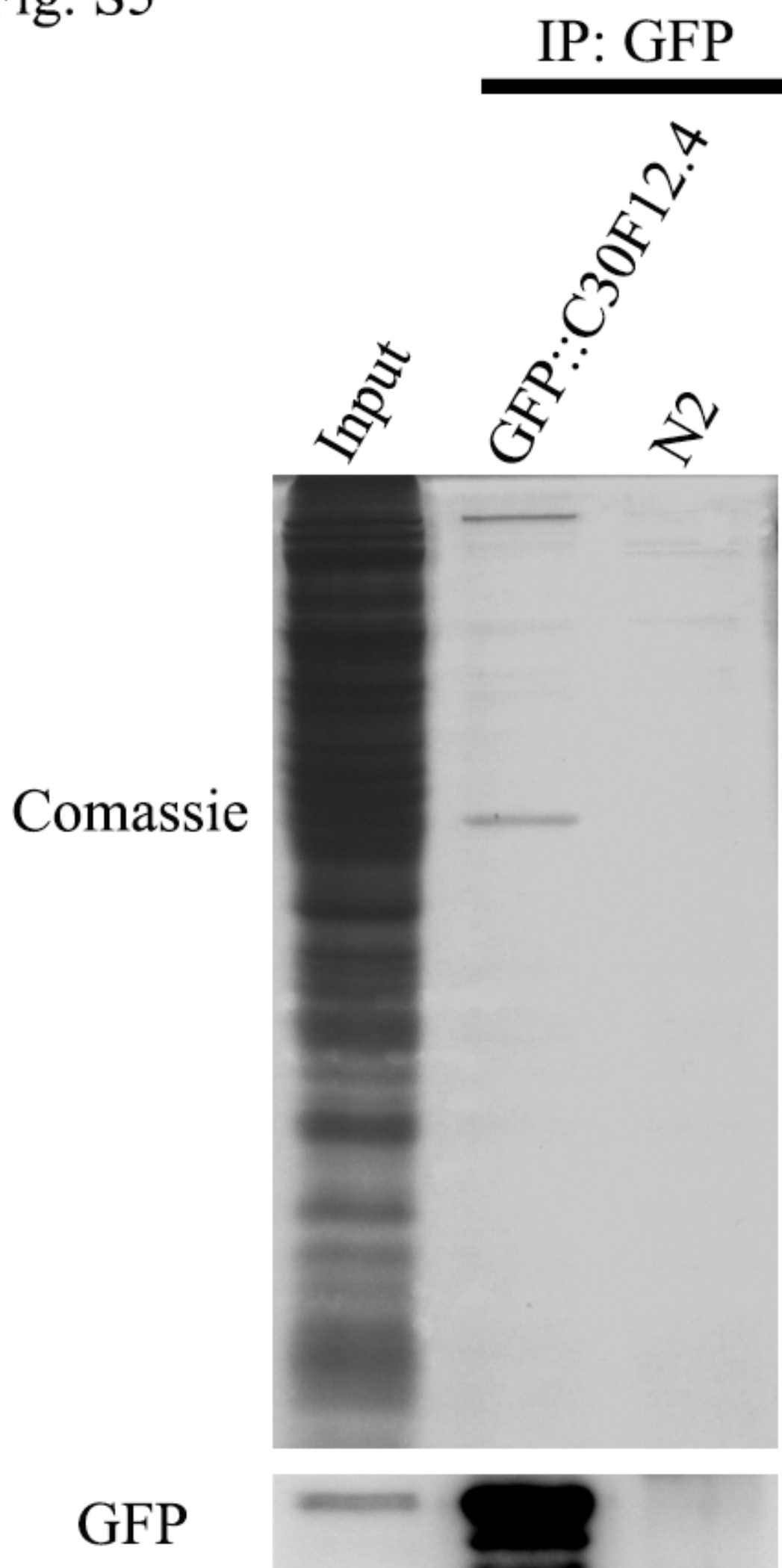
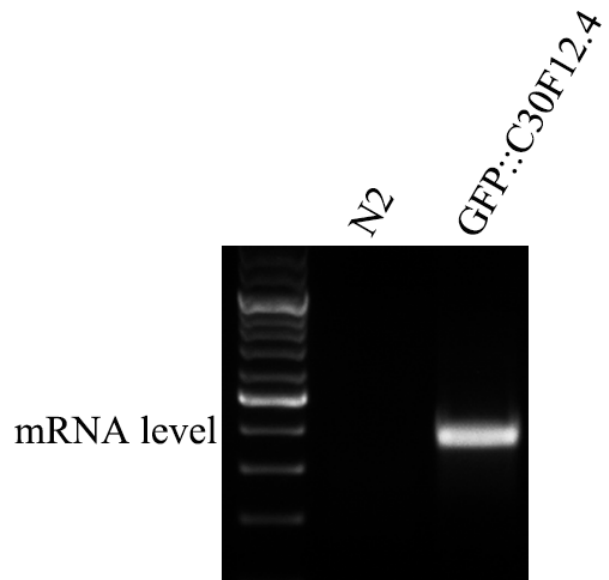


Fig. S6

A



B

