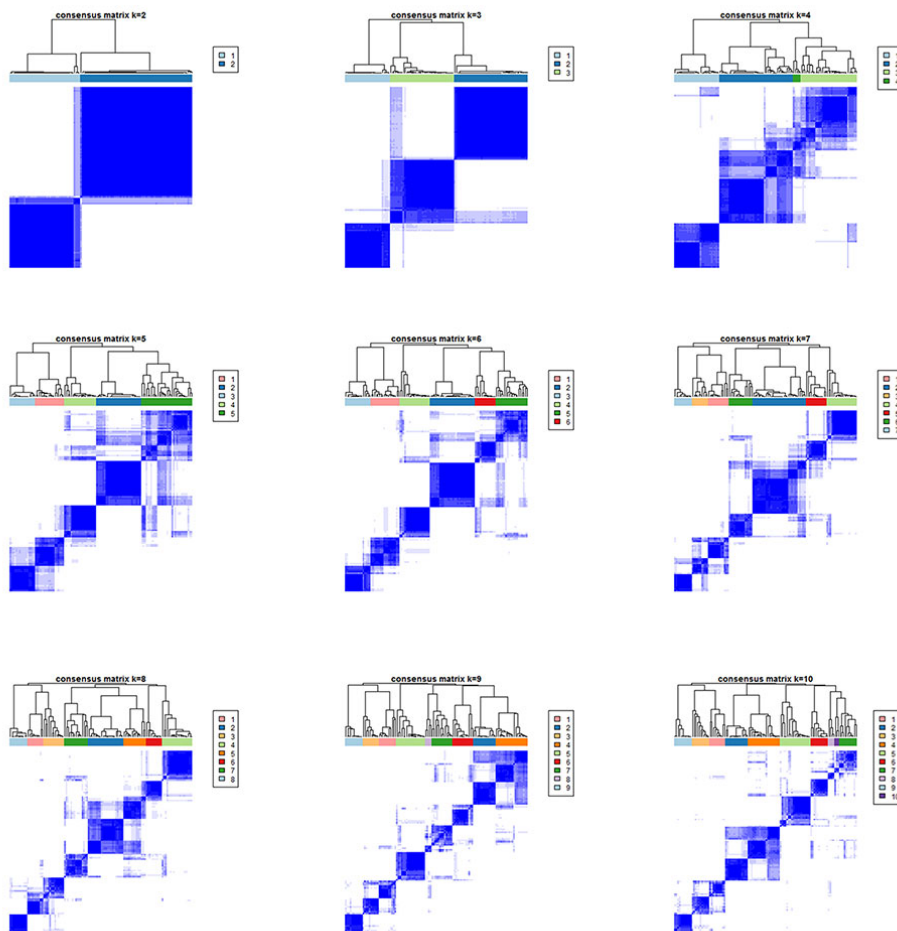
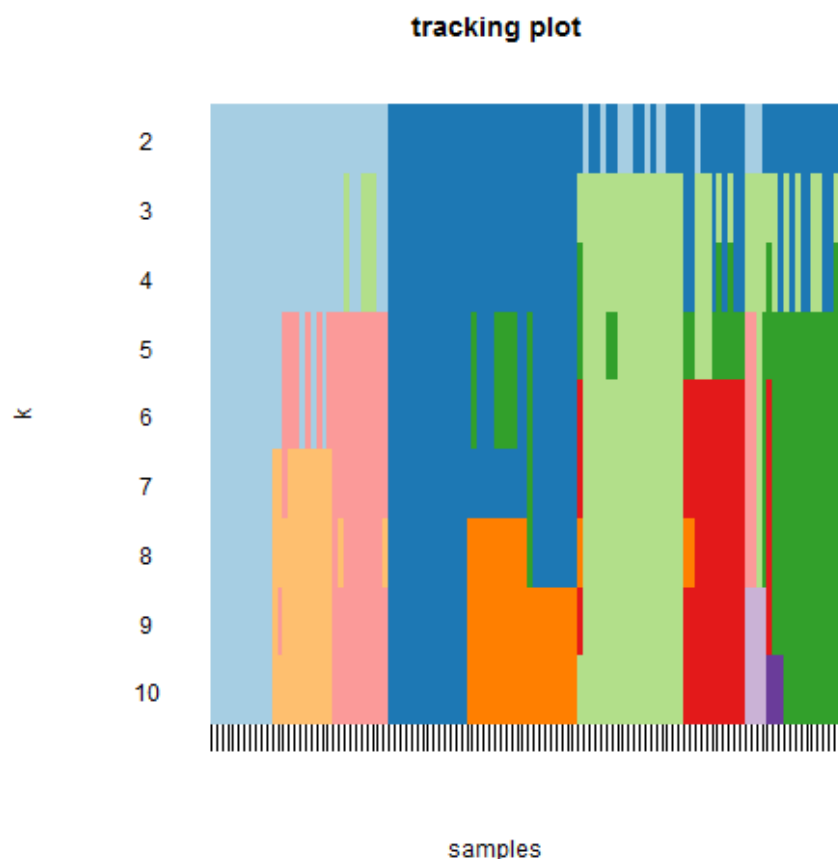


## FMD-17073-ZFS (FMD-2017-0100) Supplementary Material

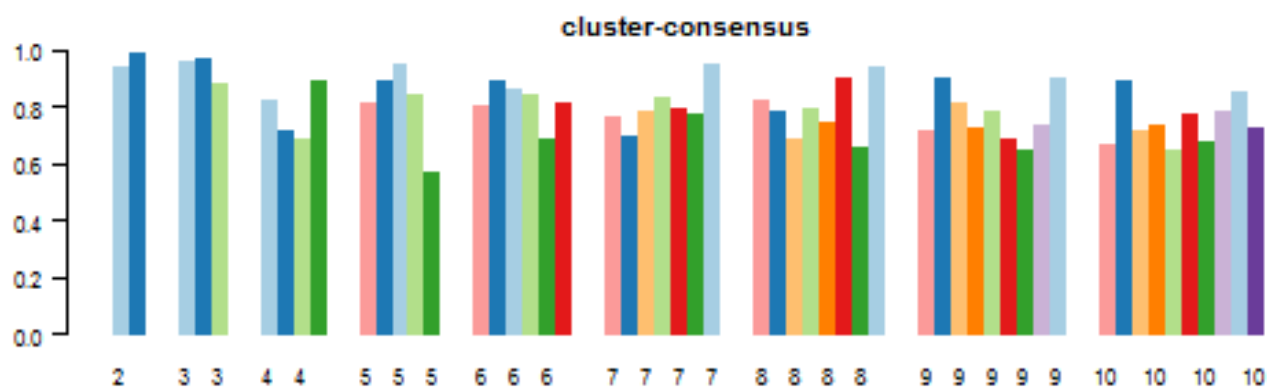


**Supplementary Fig. 1** The cluster matrix of psoriasis subclassifications from  $k = 2$  to  $k = 10$



**Supplementary Fig. 2** The trace plot from  $k = 2$  to  $k = 10$

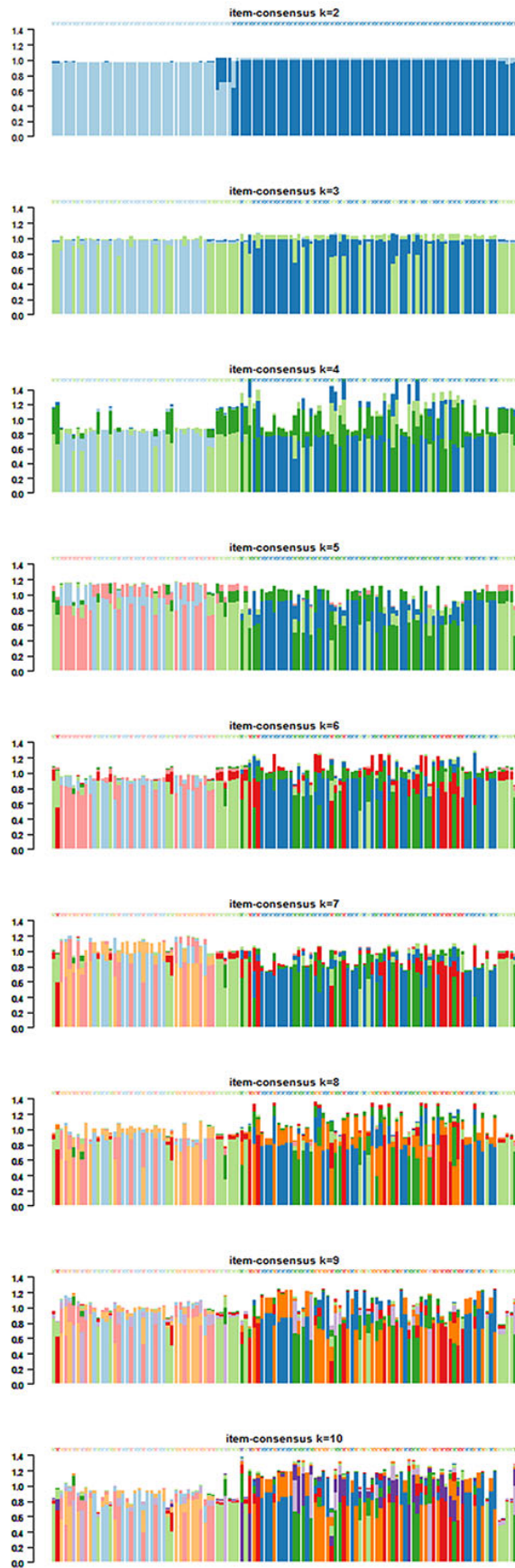
The different colors can be seen for each  $k$  (row) of the project (column) cluster distribution, the often changing cluster (change the color within the column) of the project contain unstable members, and when there are a large number of unstable members of the cluster means that the cluster is an unstable cluster. The figure shows that when  $k$  is greater, the colors change less, and therefore more stable.



**Supplementary Fig. 3** Cluster-Consensus plot of psoriasis subclassifications from  $k$

= 2 to k = 10

Cluster-Consensus plot shows the cluster-consensus value of clusters at each k. This enables a user to view the mean cluster-consensus among clusters at a given k and compare values of clusters across different k via the color scheme. Cluster is indicated by color following the same color scheme as the cluster matrices and tracking plots. The bars are grouped by k on the horizontal axis. High values indicate a cluster has high stability and low values indicate a cluster has low stability. The figure shows that when k is increasing, the average cluster consensus is decreasing gradually.



**Supplementary Fig. 4** Item-Consensus plot of psoriasis subclassifications from  $k = 2$

to  $k = 10$

Item-consensus values are the mean consensus of an item with all items in a particular cluster. An item has  $k$  item-consensus values corresponding to each cluster at a particular  $k$ . These values are depicted in bar plots for each  $k$ . Psoriasis samples are depicted as stacked bars. Item-consensus values are indicated by the heights of the colored portion of the bars, whose color corresponds to the common color scheme. Bars' rectangles are ordered by increasing value from bottom to top. The asterisks at the top indicate the consensus cluster for each item.