**Supplemental Table 4  Top 20 clusters of mutural genes and their representative enriched terms.**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| GO | **Category** | **Description** | **Count** | **%** | **Log10(P)** | **Log10(q)** |
| GO:0060326 | GO Biological Processes | cell chemotaxis | 15 | 13.39 | -11.70 | -7.56 |
| ko04657 | KEGG Pathway | IL-17 signaling pathway | 9 | 8.04 | -9.88 | -6.43 |
| GO:0010035 | GO Biological Processes | response to inorganic substance | 16 | 14.29 | -8.95 | -5.73 |
| GO:0042493 | GO Biological Processes | response to drug | 13 | 11.61 | -8.14 | -5.03 |
| GO:0045637 | GO Biological Processes | regulation of myeloid cell differentiation | 10 | 8.93 | -7.88 | -4.80 |
| GO:0032103 | GO Biological Processes | positive regulation of response to external stimulus | 13 | 11.61 | -7.79 | -4.73 |
| WP2865 | WikiPathways | IL1 and megakaryocytes in obesity | 5 | 4.46 | -7.34 | -4.39 |
| GO:0019079 | GO Biological Processes | viral genome replication | 8 | 7.14 | -7.25 | -4.34 |
| GO:0001568 | GO Biological Processes | blood vessel development | 16 | 14.29 | -7.15 | -4.27 |
| GO:0009636 | GO Biological Processes | response to toxic substance | 10 | 8.93 | -7.00 | -4.15 |
| GO:0061061 | GO Biological Processes | muscle structure development | 14 | 12.50 | -6.61 | -3.86 |
| GO:0030335 | GO Biological Processes | positive regulation of cell migration | 13 | 11.61 | -6.46 | -3.74 |
| R-HSA-6798695 | Reactome Gene Sets | Neutrophil degranulation | 12 | 10.71 | -6.30 | -3.62 |
| GO:0051403 | GO Biological Processes | stress-activated MAPK cascade | 9 | 8.04 | -6.28 | -3.61 |
| GO:0032870 | GO Biological Processes | cellular response to hormone stimulus | 13 | 11.61 | -6.19 | -3.58 |
| GO:0001817 | GO Biological Processes | regulation of cytokine production | 15 | 13.39 | -6.18 | -3.58 |
| WP2882 | WikiPathways | Nuclear receptors meta-pathway | 10 | 8.93 | -6.17 | -3.58 |
| GO:0010942 | GO Biological Processes | positive regulation of cell death | 13 | 11.61 | -5.95 | -3.43 |
| GO:0001935 | GO Biological Processes | endothelial cell proliferation | 8 | 7.14 | -5.85 | -3.35 |
| WP15 | WikiPathways | Selenium micronutrient network | 6 | 5.36 | -5.73 | -3.25 |