**Table S1** The top ten representative differential gene sets between different infections based on GSVA.

|  |  |
| --- | --- |
| Gram-negative vs mixed sepsis | p value |
| GSE3039\_NKT\_CELL\_VS\_ALPHAALPHA\_CD8\_TCELL\_DN | 0.0009 |
| HOUSTIS\_ROS | 0.0009 |
| BOYAULT\_LIVER\_CANCER\_SUBCLASS\_G123\_DN | 0.0009 |
| NOUSHMEHR\_GBM\_SOMATIC\_MUTATED | 0.0009 |
| GSE20366\_TREG\_VS\_TCONV\_DN | 0.001 |
| GSE3982\_MAST\_CELL\_VS\_NEUTROPHIL\_UP | 0.001 |
| GSE3920\_IFNA\_VS\_IFNB\_TREATED\_ENDOTHELIAL\_CELL\_UP | 0.001 |
| GSE21033\_3H\_VS\_12H\_POLYIC\_STIM\_DC\_DN | 0.001 |
| DUTTA\_APOPTOSIS\_VIA\_NFKB | 0.001 |
| HERNANDEZ\_MITOTIC\_ARREST\_BY\_DOCETAXEL\_2\_DN | 0.001 |
| Gram- positive vs mixed sepsis | p value |
| HALLMARK\_ALLOGRAFT\_REJECTION) | 0.0009 |
| GSE15659\_RESTING\_TREG\_VS\_NONSUPPRESSIVE\_TCELL\_DN) | 0.0009 |
| GSE15930\_STIM\_VS\_STIM\_AND\_IL12\_48H\_CD8\_T\_CELL\_DN) | 0.0009 |
| GSE2706\_2H\_VS\_8H\_LPS\_STIM\_DC\_DN) | 0.0009 |
| GSE39820\_CTRL\_VS\_TGFBETA1\_IL6\_IL23A\_CD4\_TCELL\_DN) | 0.0009 |
| GSE22601\_DOUBLE\_NEGATIVE\_VS\_IMMATURE\_CD4\_SP\_THYMOCYTE\_UP) | 0.0009 |
| GSE4590\_PRE\_BCELL\_VS\_LARGE\_PRE\_BCELL\_UP) | 0.0009 |
| GSE13522\_CTRL\_VS\_T\_CRUZI\_Y\_STRAIN\_INF\_SKIN\_129\_MOUSE\_UP) | 0.0009 |
| MIKKELSEN\_ES\_LCP\_WITH\_H3K4ME3) | 0.0009 |
| NOUSHMEHR\_GBM\_SOMATIC\_MUTATED) | 0.0009 |
| Gram-negative vs Gram- positive sepsis | p value |
| GSE4590\_PRE\_BCELL\_VS\_LARGE\_PRE\_BCELL\_UP | 0.0009 |
| GSE22935\_24H\_VS\_48H\_MBOVIS\_BCG\_STIM\_MACROPHAGE\_DN | 0.0009 |
| GSE32901\_TH17\_EMRICHED\_VS\_TH17\_NEG\_CD4\_TCELL\_UP | 0.0009 |
| KEGG\_FOLATE\_BIOSYNTHESIS | 0.0009 |
| REACTOME\_ORGANIC\_ANION\_TRANSPORT | 0.0009 |
| GSE17721\_CPG\_VS\_GARDIQUIMOD\_16H\_BMDC\_UP | 0.001 |
| GSE5589\_WT\_VS\_IL10\_KO\_LPS\_STIM\_MACROPHAGE\_180MIN\_DN | 0.001 |
| GSE26488\_WT\_VS\_VP16\_TRANSGENIC\_HDAC7\_KO\_DOUBLE\_POSITIVE\_THYMOCYTE\_DN | 0.001 |
| GSE37301\_CD4\_TCELL\_VS\_RAG2\_KO\_NK\_CELL\_DN | 0.001 |
| BLANCO\_MELO\_COVID19\_SARS\_COV\_2\_INFECTION\_A594\_ACE2\_EXPRESSING\_CELLS\_DN | 0.001 |