

**Table S11.** Top enriched pathways in module 2 ranked in order of combined score by KEGG 2019 HUMAN Database.

Index	Name	Genes	Combined score
1	Influenza A	CXCL8;DDX58;PRKCB;STAT1;PIK3R1;MAPK14; MAPK13;IFIH1;SOCS3;CXCL10;IFNG;OAS1;OAS2 ;IL1B;OAS3;IRF7	1298.5
2	Pertussis	CXCL8;CALML5;NOS2;IL23A;IL1B;IRF1;CALML3 ;MAPK14;MAPK13	1012.0
3	Hepatitis C	DDX58;EGF;STAT1;STAT3;PIK3R1;SOCS3; CXCL10;IFNG;OAS1;OAS2;OAS3;IRF7;PPARA	906.5
4	RIG-I-like receptor signaling pathway	IFIH1;CXCL10;CXCL8;DDX58;IRF7;ISG15; MAPK14;MAPK13	860.8
5	Toll-like receptor signaling pathway	CXCL10;CXCL9;CXCL11;CXCL8;STAT1;IL1B; IRF7;PIK3R1;MAPK14;MAPK13	845.2
6	C-type lectin receptor signaling pathway	CALML5;IL23A;STAT1;IL1B;IRF1;CALML3; PIK3R1;MAPK14;MAPK13	660.1
7	Salmonella infection	TJP1;CXCL8;IFNG;NOS2;IL1B;MYH14;MAPK14; MAPK13	650.9
8	Prolactin signaling pathway	SOCS3;STAT1;IRF1;STAT3;PIK3R1;MAPK14; MAPK13	632.2
9	Prolactin signaling pathway	SOCS3;STAT1;IRF1;STAT3;PIK3R1;MAPK14; MAPK13	632.2
10	Epstein-Barr virus infection	LYN;DDX58;STAT1;STAT3;ISG15;PIK3R1; MAPK14;MAPK13;CXCL10;OAS1;OAS2;OAS3; IRF7	629.4