# Transcript length distribution per Reactome Pathway (second ontology level) 0.00093 0.44 0.018 40000 Transcript Length (bp) 20000

Cytokine Signaling in Immune system

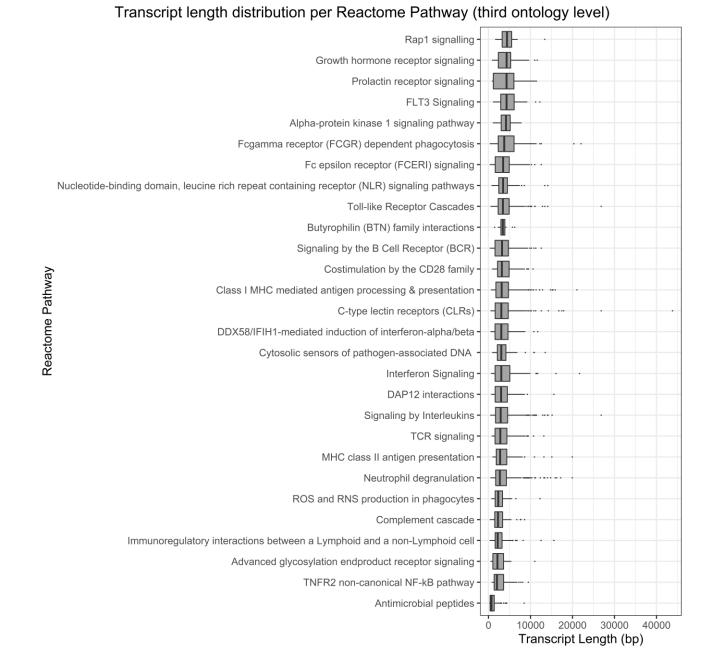
Reactome Pathway

Adaptive Immune System

## **Supplementary Figure 5A.**

Transcript length distribution per immune system pathway (second ontology level), from Reactome (Version 75).

Innate Immune System



### **Supplementary Figure 5B.**

Transcript length distribution per immune system pathway (third ontology level), from Reactome (Version 75).

#### Transcript length distribution per Reactome Pathway (fourth ontology level) Interleukin-3, Interleukin-5 and GM-CSF signaling LRR FLII-interacting protein 1 (LRRFIP1) activates type I IFN production CD28 co-stimulation CTLA4 inhibitory signaling -Interleukin-6 family signaling STAT5 Activation Interleukin-2 family signaling Antiviral mechanism by IFN-stimulated genes TRAF3-dependent IRF activation pathway NOD1/2 Signaling Pathway CD209 (DC-SIGN) signaling Ion influx/efflux at host-pathogen interface FCERI mediated MAPK activation NF-kB activation through FADD/RIP-1 pathway mediated by caspase-8 and -10 FCERI mediated Ca+2 mobilization -RAF/MAP kinase cascade Regulation of actin dynamics for phagocytic cup formation Trafficking and processing of endosomal TLR -----Antigen activates B Cell Receptor (BCR) leading to generation of second messengers -Role of phospholipids in phagocytosis -Role of LAT2/NTAL/LAB on calcium mobilization Negative regulators of DDX58/IFIH1 signaling TRAF6 mediated NF-kB activation Toll Like Receptor 9 (TLR9) Cascade Toll Like Receptor 5 (TLR5) Cascade Toll Like Receptor 10 (TLR10) Cascade Interleukin-17 signaling DAP12 signaling Toll Like Receptor 7/8 (TLR7/8) Cascade Reactome Pathway Toll Like Receptor 3 (TLR3) Cascade Toll Like Receptor 2 (TLR2) Cascade DEx/H-box helicases activate type I IFN and inflammatory cytokines production Toll Like Receptor 4 (TLR4) Cascade -Antigen processing: Ubiquitination & Proteasome degradation Antigen Presentation: Folding, assembly and peptide loading of class I MHC STING mediated induction of host immune responses Downstream signaling events of B Cell Receptor (BCR) Events associated with phagocytolytic activity of PMN cells Generation of second messenger molecules ZBP1(DAI) mediated induction of type I IFNs -Interferon gamma signaling Terminal pathway of complement Interleukin-4 and Interleukin-13 signaling CLEC7A (Dectin-1) signaling Interleukin-20 family signaling Interleukin-1 family signaling Other interleukin signaling Interleukin-12 family signaling FCERI mediated NF-kB activation Interleukin-7 signaling Downstream TCR signaling Regulation of Complement cascade Regulation of innate immune responses to cytosolic DNA TNF receptor superfamily (TNFSF) members mediating non-canonical NF-kB pathway Regulation of TLR by endogenous ligand TNFs bind their physiological receptors -----Phosphorylation of CD3 and TCR zeta chains Initial triggering of complement Interferon alpha/beta signaling -Antigen processing-Cross presentation TRAF6 mediated IRF7 activation Translocation of ZAP-70 to Immunological synapse NIK-->noncanonical NF-kB signaling -

#### **Supplementary Figure 5C.**

Transcript length distribution per immune system pathway (fourth ontology level), from Reactome (Version 75).

CD22 mediated BCR regulation -Metal sequestration by antimicrobial proteins -

10000

20000

Transcript Length (bp)

30000

40000