

Supplementary Table 1. Gene ID and function

Gene ID	Full gene name	Summary of functions
CD14	Cluster of differentiation 14	Essential for TLR4 immune response. Binds to bacterial LPS and delivers it to MD-2/TLR 4 complex. Role in activation of MyD88, TIRAP and TRAF 6, leading to NFκB activation and cytokine secretion.
CEBPB/ NF-IL-6 beta	Nuclear factor IL-6	Specifically binds to an IL-1 response element in the IL-6 gene. Binds to regulatory regions of several acute-phase and cytokines genes. Interacts with PTGES2.
GUSB	Glucuronidase beta	Hydrolase that degrades glycosaminoglycans.
IFNB1	Interferon beta 1	Early innate immune response cytokine
IRAK1	Interleukin-1 receptor-associated kinase 1	Has a role in IL-1 receptor activation. Binds to MyD88 which phosphorylates IRAK1 by IRAK4 and leads to NFκB activation.
IRAK4	Interleukin-1-receptor-associated kinase 4	Forms a complex with MyD88 and IRAK2. Phosphorylated IRAK4 associates with TRAF 6 and TIRAP and PELI1 this intermediate complex is required for NFκB activation.
IκBKB	Inhibitor of nuclear factor kappa B kinase subunit beta	Critical role in the NFκB pathway as an enzyme complex of the canonical IKK complex. Phosphorylates inhibitors of NFκB on 2 critical serine residues and degrades them by the proteasome to allow NFκB translocation into the nucleus.
MAP2K1	Mitogen-activated protein kinase kinase 1	Important component of the MAP kinase signal transduction pathway, binds cytokine ligands.
MAP3K1	Mitogen-activated protein kinase kinase kinase 1	A stress activated serine/threonine kinase ,plays a role in signal transduction cascades of the JNK kinase and the NFκB pathway.
MAPK8	mitogen-activated protein kinase 8	Mediates early gene expression in response to LPS and pro-inflammatory cytokines and regulates JNK signalling

MAPK8IP3	Mitogen-activated protein kinase 8 interacting protein 3	Role in the function of JNK signalling as a scaffold protein for MAPK cascade.
MYD88	Myeloid differentiation primary response gene 88 also known as TIRAP	Adaptor protein involved in TLR2 and -4 and IL-1 signalling. Acts via IRAK1, IRAK2, IRF7 and TRAF 6, leading to NFκB activation, cytokine secretion and IL-8 transcription.
NFκB1	Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1	Has dual function of cytoplasmic retention of NFκB proteins by p105 and generates p50 by co-translational processing.
NFκBIA	Nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, alpha	Retains the NFκB complexes in the cytoplasm until required in the nucleus. Also known as IκBα.
PPAR-α	Peroxisome proliferator-activated receptor alpha	Involved in the immune and inflammation responses and regulates fatty acid synthesis, oxidation and lipoprotein assembly.
PTGS2	Prostaglandin-endoperoxide synthase 2	Inducible key membrane protein in prostaglandin biosynthesis. NFκB can also induce PTGS2 expression. Also known as cyclo-oxygenase 2 (COX2).
RIPK2	Receptor interacting serine/threonine kinase 2	Potent activator of NFκB especially by peptidoglycans. Activates tyrosine phosphorylation that leads to NFκB activation by NOD2.
SOCS1	Suppressor of cytokine signalling 1	A negative regulator of cytokine signalling through the JAK/STAT3 pathway. Major regulator of IL-6.
SOCS3	Suppressor of cytokine signalling 3	A negative regulator of cytokine signalling through the JAK/STAT3 pathway by binding to tyrosine kinase receptors including gp130. Induced by various cytokines, including IL-6.
STAT1	Signal transducer and activator of transcription 1	Protein is phosphorylated by the receptor-associated kinases, translocates to the nucleus, and acts as transcription activator. Role in the activation of JAK kinases.
STAT3	Signal transducer and activator of transcription 3	Part of JAK-STAT signalling cascade and are phosphorylated by receptor associated kinases in responses to IL-6. Localised in mitochondria.

TAB1	TGF-beta-activated kinase 1/map3k7-binding protein	Regulator of MAP3K pathway mediating intracellular signalling induced by TGF- β , IL-1. Interacts with TRAF 6 and MAP3K7 leading to NF κ B activation
TBK1	Tank binding kinase 1	Involved in activation of TLRs by bacteria. Serine/threonine kinase with essential role in regulating inflammatory responses by mediating NF κ B activation through phosphorylation of serine.
TICAM1	Toll like receptor adaptor molecule 1 (also known as TRIF)	Facilitates protein-protein interactions for TLR4 and signal-transduction constituents, Recruits proteins TBK1, TRAF6 and RIPK1 which activates NF κ B
TICAM2; TMED7- TICAM2	Tmed7-ticam2 read through	Negatively regulates MyD88-independent TLR4 pathway
TOLLIP	Toll interacting protein	Ubiquitin-binding protein interacts with TLR signalling cascades. Inhibits cell activation by bacterial products. Inhibits IRAK1 phosphorylation.
TRAF6	TNF receptor-associated factor 6	Signal transducer in the Toll/IL-1 family and NF κ B pathway
XPO1	Exportin 1	Mediates export of cellular proteins (mRNA) between the nucleus and cytoplasm. Possible nuclear export inhibitor.