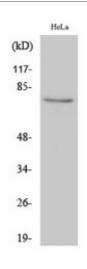


Anti-IRAK-1 antibody



Description

Dilution range

Rabbit polyclonal to IRAK-1.

Model STJ93756

Host Rabbit

Human, Mouse, Rat Reactivity

ELISA, IF, WB **Applications**

Synthesized peptide derived from human IRAK-1 around the non-**Immunogen**

phosphorylation site of T387.

Immunogen Region 330-410 aa

Gene ID <u>3654</u> **Gene Symbol IRAK1**

WB 1:500-1:2000IF 1:200-1:1000ELISA 1:5000

Specificity IRAK-1 Polyclonal Antibody detects endogenous levels of IRAK-1 protein.

Isoform 1 and isoform 2 are ubiquitously expressed in all tissues examined, **Tissue Specificity**

with isoform 1 being more strongly expressed than isoform 2.

The antibody was affinity-purified from rabbit antiserum by affinity-Purification

chromatography using epitope-specific immunogen.

Note For Research Use Only (RUO).

Protein Name Interleukin-1 receptor-associated kinase 1 IRAK-1

Molecular Weight 76 kDa

Clonality Polyclonal **Conjugation** Unconjugated

Isotype IgG

Formulation Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.

Concentration 1 mg/ml

Storage Instruction Store at -20°C, and avoid repeat freeze-thaw cycles.

Database Links <u>HGNC:6112OMIM:300283</u>

Alternative Names Interleukin-1 receptor-associated kinase 1 IRAK-1

Function Serine/threonine-protein kinase that plays a critical role in initiating innate

immune response against foreign pathogens. Involved in Toll-like receptor (TLR) and IL-1R signaling pathways. Is rapidly recruited by MYD88 to the receptor-signaling complex upon TLR activation. Association with MYD88

leads to IRAK1 phosphorylation by IRAK4 and subsequent

autophosphorylation and kinase activation. Phosphorylates E3 ubiquitin ligases Pellino proteins (PELI1, PELI2 and PELI3) to promote pellino-

mediated polyubiquitination of IRAK1. Then, the ubiquitin-binding domain of IKBKG/NEMO binds to polyubiquitinated IRAK1 bringing together the IRAK1-MAP3K7/TAK1-TRAF6 complex and the NEMO-IKKA-IKKB complex. In turn, MAP3K7/TAK1 activates IKKs (CHUK/IKKA and IKBKB/IKKB) leading to NF-kappa-B nuclear translocation and activation. Alternatively, phosphorylates TIRAP to promote its ubiquitination and subsequent degradation. Phosphorylates the interferon regulatory factor 7 (IRF7) to induce its activation and translocation to the nucleus, resulting in transcriptional activation of type I IFN genes, which drive the cell in an antiviral state. When sumoylated, translocates to the nucleus and

phosphorylates STAT3.

Sequence and Domain Family The ProST region is composed of many proline and serine residues (more than

20 of each) and some threonines. This region is the site of IRAK-1

hyperphosphorylation.

Cellular Localization Cytoplasm Nucleus Lipid droplet. Translocates to the nucleus when

sumoylated. RSAD2/viperin recruits it to the lipid droplet.

Post-translational Following recruitment on the activated receptor complex, phosphorylated on

Thr-209, probably by IRAK4, resulting in a conformational change of the kinase domain, allowing further phosphorylations to take place. Thr-387 phosphorylation in the activation loop is required to achieve full enzymatic activity. Polyubiquitinated by TRAF6 after cell stimulation with IL-1-beta by PELI1, PELI2 and PELI3. Polyubiquitination occurs with polyubiquitin chains linked through 'Lys-63'. Ubiquitination promotes interaction with

NEMO/IKBKG. Also sumoylated; leading to nuclear translocation.

Modifications