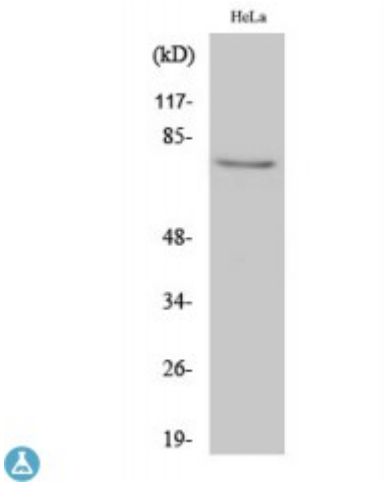
# Anti-IRAK-1 antibody

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| **Description** | Rabbit polyclonal to IRAK-1. |

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| **Model** | STJ93756 |
| **Host** | Rabbit |
| **Reactivity** | Human, Mouse, Rat |
| **Applications** | ELISA, IF, WB |
| **Immunogen** | Synthesized peptide derived from human IRAK-1 around the non-phosphorylation site of T387. |
| **Immunogen Region** | 330-410 aa |
| **Gene ID** | 3654 |
| **Gene Symbol** | IRAK1 |
| **Dilution range** | WB 1:500-1:2000IF 1:200-1:1000ELISA 1:5000 |
| **Specificity** | IRAK-1 Polyclonal Antibody detects endogenous levels of IRAK-1 protein. |
| **Tissue Specificity** | Isoform 1 and isoform 2 are ubiquitously expressed in all tissues examined, with isoform 1 being more strongly expressed than isoform 2. |
| **Purification** | The antibody was affinity-purified from rabbit antiserum by affinity-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 |

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| **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** | HGNC:6112OMIM:300283 |
| **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 Modifications** | 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. |