

IRAK1 Protein, Human (Sf9, GST)

Cat. No.:	HY-P701789
Synonyms:	IRAK1; Interleukin-1 receptor-associated kinase 1; IRAK-1
Species:	Human
Source:	Sf9 insect cells
Accession:	P51617 (R194-S712)
Gene ID:	3654
Molecular Weight:	

PROPERTIES

Appearance	Solution.
Formulation	Supplied as a 0.22 µm filtered solution of 50 mM Tris-HCl, pH7.5, 200 mM NaCl, 20% glycerol.
Endotoxin Level	<1 EU/µg, determined by LAL method.
Reconstitution	Please use rapid thawing with running water to thaw the protein.
Storage & Stability	Stored at -80°C for 1 year. It is stable at -20°C for 3 months after opening. It is recommended to freeze aliquots at -80°C for extended storage. Avoid repeated freeze-thaw cycles.
Shipping	Shipping with dry ice.

DESCRIPTION

Background	<p>IRAK1, a serine/threonine-protein kinase, assumes a crucial role in initiating the innate immune response against foreign pathogens by participating in Toll-like receptor (TLR) and IL-1R signaling pathways. Upon TLR activation, IRAK1 is swiftly recruited by MYD88 to the receptor-signaling complex, leading to its phosphorylation by IRAK4, subsequent autophosphorylation, and activation of its kinase function. IRAK1 then phosphorylates E3 ubiquitin ligases Pellino proteins (PELI1, PELI2, and PELI3), promoting pellino-mediated polyubiquitination of IRAK1. The ubiquitin-binding domain of IKBKG/NEMO binds to polyubiquitinated IRAK1, facilitating the assembly of the IRAK1-MAP3K7/TAK1-TRAF6 complex and the NEMO-IKKA-IKKB complex. This cascade activates IKKs (CHUK/IKKA and IKBKB/IKKB), leading to NF-kappa-B nuclear translocation and activation. Additionally, IRAK1 phosphorylates TIRAP, promoting its ubiquitination and degradation. Furthermore, IRAK1 phosphorylates interferon regulatory factor 7 (IRF7), inducing its activation and translocation to the nucleus, thereby initiating the transcriptional activation of type I IFN genes, establishing an antiviral cellular state. When sumoylated, IRAK1 translocates to the nucleus and phosphorylates STAT3.</p>
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Caution: Product has not been fully validated for medical applications. For research use only.

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