

Rabbit Anti-Phospho-IRAK1 (Thr209)/Cy5 Conjugated antibody

SL3193R-Cy5

Product Name	Anti-Phospho-IRAK1 (Thr209)/Cy5
Chinese Name	Cy5 标记的磷酸化白介素-1 受体相关激酶 1 抗体
Alias	IRAK (phospho T209); p-IRAK (phospho T209); IRAK1 (Phospho-Thr209); IRAK1 (Phospho-T209); IRAK1 (p-Thr209); Il1rak; Il1rak; Interleukin 1 receptor associated kinase 1; Interleukin 1 receptor associated kinase 1; Interleukin 1 receptor associated kinase 2; Interleukin-1 receptor-associated kinase 1; IRAK; IRAK-1; IRAK1; IRAK1; IRAK1_HUMAN; IRAK2; IRAK2; mPLK; mPLK; Pelle; Pelle; Pelle homolog; Pelle-like protein kinase; Plpk.
Product Type	Phosphorylated anti
Research Area	Tumour immunology Apoptosis transcriptional regulatory factor
Immunogen Species	Rabbit
Clonality	Polyclonal
React Species	Human,Rat
Applications	Flow-Cyt=0.2µg /Test,ICC/IF=1:100-500,IF=1:100-500 not yet tested in other applications. optimal dilutions/concentrations should be determined by the end user.
Molecular weight	78kDa
Form	Lyophilized or Liquid
Concentration	1mg/ml
immunogen	KLH conjugated synthesised phosphopeptide derived from human IRAK1 around the phosphorylation site of Thr209 [RG(p-T)HN]
Lsotype	IgG
Purification	affinity purified by Protein A
Storage Buffer	1M TBS(pH7.4) with 1% BSA, 3% Proclin300 and 50% Glycerol.
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. The lyophilized antibody is stable at room temperature for at least one month and for greater than a year when kept at -20°C. When reconstituted in sterile pH 7.4 1M PBS or diluent of antibody the antibody is stable for at least two weeks

at 2-4 °C.

background:

This gene encodes the interleukin-1 receptor-associated kinase 1, one of two putative serine/threonine kinases that become associated with the interleukin-1 receptor (IL1R) upon stimulation. This gene is partially responsible for IL1-induced upregulation of the transcription factor NF-kappa B. Alternatively spliced transcript variants encoding different isoforms have been found for this gene. [provided by RefSeq, Jul 2008]

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

Product Detail

Subunit:

Homodimer. Interacts with TOLLIP; this interaction occurs in the cytosol prior to receptor activation. Interacts with MYD88; this interaction recruits IRAK1 to the stimulated receptor complex. Interacts with IL1RL1. Interacts with IRAK1BP1. Associates with TRAF6, PELI1 and IRAK4; this complex recruits MAP3K7/TAK1, TAB1 and TAB2 to mediate NF-kappa-B activation. Interacts (when polyubiquitinated) with IKBKG/NEMO.

Subcellular Location:

Cytoplasm. Nucleus. Note=Translocates to the nucleus when sumoylated.

Tissue Specificity:

Isoform 1 and isoform 2 are ubiquitously expressed in all tissues examined, with isoform 1 being more strongly expressed than isoform 2.

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 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.

Similarity:

Belongs to the protein kinase superfamily. TKL Ser/Thr protein kinase family. Pelle subfamily.

Contains 1 death domain.

Contains 1 protein kinase domain.

Database links:

[Entrez Gene: 3654](#) Human

[Entrez Gene: 16179](#) Mouse

[Entrez Gene: 363520](#) Rat

[Omim: 300283](#) Human

[SwissProt: P51617](#) Human

[SwissProt: Q62406](#) Mouse

[Unigene: 522819](#) Human

[Unigene: 38241](#) Mouse

[Unigene: 22238](#) Rat

Important Note:

This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.