10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

IRAK4 Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP7805b

Product Information

Application	WB, E
Primary Accession	Q9NWZ3
Other Accession	NP_057207
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB2350
Calculated MW	51530
Antigen Region	428-459

Additional Information

Gene ID	51135
Other Names	Interleukin-1 receptor-associated kinase 4, IRAK-4, Renal carcinoma antigen NY-REN-64, IRAK4
Target/Specificity	This IRAK4 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 428-459 amino acids from the C-terminal region of human IRAK4.
Dilution	WB~~1:500 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	IRAK4 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	IRAK4
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 (PubMed:17878374). Is rapidly recruited

by MYD88 to the receptor- signaling complex upon TLR activation to form the Myddosome together with IRAK2. Phosphorylates initially IRAK1, thus stimulating the kinase activity and intensive autophosphorylation of IRAK1. 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 NCF1 and regulates NADPH oxidase activation after LPS stimulation suggesting a similar mechanism during microbial infections.

Cellular Location Cytoplasm.

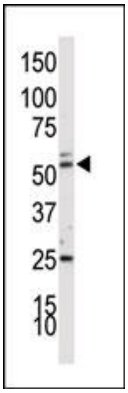
Background

Protein kinases are enzymes that transfer a phosphate group from a phosphate donor, generally the g phosphate of ATP, onto an acceptor amino acid in a substrate protein. By this basic mechanism, protein kinases mediate most of the signal transduction in eukaryotic cells, regulating cellular metabolism, transcription, cell cycle progression, cytoskeletal rearrangement and cell movement, apoptosis, and differentiation. With more than 500 gene products, the protein kinase family is one of the largest families of proteins in eukaryotes. The family has been classified in 8 major groups based on sequence comparison of their tyrosine (PTK) or serine/threonine (STK) kinase catalytic domains. The tyrosine-like kinase (TLK) group consists of 40 tyrosine and serine-threonine kinases such as MLK (mixed-lineage kinase), LISK (LIMK/TESK), IRAK (interleukin-1 receptor-associated kinase), Raf, RIPK (receptor-interacting protein kinase), and STRK (activin and TGF-beta receptors) families.

References

Medvedev, A.E., et al., J. Exp. Med. 198(4):521-531 (2003).
Jiang, Z., et al., J. Biol. Chem. 278(13):10952-10956 (2003).
Picard, C., et al., Science 299(5615):2076-2079 (2003).
Li, S., et al., Proc. Natl. Acad. Sci. U.S.A. 99(8):5567-5572 (2002).
Suzuki, N., et al., Nature 416(6882):750-756 (2002).

Images



Western blot analysis of anti-IRAK4 Pab (Cat. #AP7805b) in Jurkat cell lysate. IRAK4 (Arrow) was detected using purified Pab. Secondary HRP-anti-rabbit was used for signal visualization with chemiluminescence.