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IRAK-4 Antibody

Catalog # ASC10190

Product Information

Application	WB, IF, ICC, E
Primary Accession	Q9NWZ3
Other Accession	AAM15772, 20219010
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	51530
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	IRAK-4 antibody can be used for the detection of IRAK-4 by Western blot at 1 to 4 g/mL. Antibody can also be used for immunocytochemistry starting at 10 g/mL. For immunofluorescence start at 10 g/mL.

Additional Information

Gene ID	51135
Other Names	IRAK-4 Antibody: IPD1, REN64, IRAK-4, NY-REN-64, Interleukin-1 receptor-associated kinase 4, Renal carcinoma antigen NY-REN-64, interleukin-1 receptor-associated kinase 4
Target/Specificity	IRAK4; IRAK-4 antibody is predicted to not cross-react with other members of the IRAK protein family.
Reconstitution & Storage	IRAK-4 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	IRAK-4 Antibody 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.

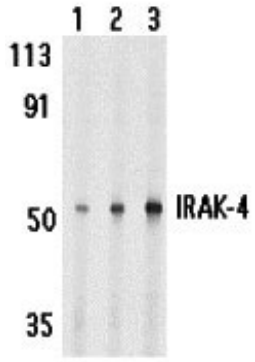
Background

IRAK-4 Antibody: Interleukin-1 (IL-1) and lipopolysaccharide (LPS) induces cellular responses through IL-1 receptor (IL-1R) and Toll-like receptors (TLR). IL-1R-associated kinases (IRAK, IRAK2, and IRAK-M) regulate the activation of NF-κB and MAP kinase (MAPK) by IL-1R/TLR. A novel member in the IRAK/Pelle family was recently identified and designated IRAK-4. Overexpression of IRAK-4 activates NF-κB and MAPK pathways. IRAK-4 interacts with and phosphorylates IRAK-1. IRAK-4-deficient animals are completely resistant to the challenge with LPS. Animals and humans lacking IRAK-4 are impaired in their responses to viral and bacterial challenges. Members in IRAK/Pelle family play a central role in IL-1R/TLR mediated inflammatory responses and in innate immunity.

References

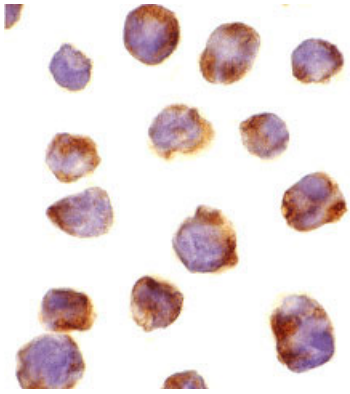
Cao Z, Henzel WJ, and Gao X. IRAK: a kinase associated with the interleukin-1 receptor. Science 1996; 271:1128-31.
Muzio M, Ni J, Feng P, et al. IRAK (Pelle) family member IRAK-2 and MyD88 as proximal mediators of IL-1 signaling. Science 1997; 278:1612-5
Wesche H, Gao X, Li X, et al. IRAK-M is a novel member of the Pelle/interleukin-1 receptor-associated kinase (IRAK) family. J. Biol. Chem. 1999; 274:19403-10.
Li S, Strelow A, Fontana EJ, et al. IRAK-4: a novel member of the IRAK family with the properties of an IRAK-kinase. Proc. Natl. Acad. Sci. USA 2002; 99:5567-72.

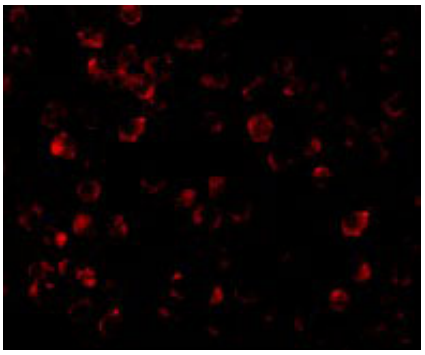
Images



Western blot analysis of IRAK-4 in HeLa cell lysate with IRAK-4 antibody at 1 (lane 1), 2 (lane 2), and 4 (lane 3) µg/mL, respectively.

Immunocytochemistry of IRAK-4 in K562 cells with IRAK-4 antibody at 10 µg/mL.





Immunofluorescence of IRAK-4 in K562 cells with IRAK-4 antibody at 10 µg/mL.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.