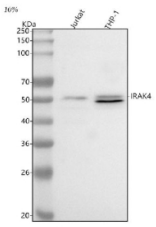
IRAK4 Antibody / Interleukin-1 receptor-associated kinase 4 (FY12813)

Catalog No.	Formulation	Size
FY12813	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q9NWZ3
Applications	Western Blot: 0.25-0.5ug/ml ELISA: 0.1-0.5ug/ml
Limitations	This IRAK4 antibody is available for research use only.



Western blot analysis of IRAK4 using anti-IRAK4 antibody. Lane 1: human Jurkat whole cell lysates, Lane 2: human THP-1 whole cell lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-IRAK4 antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using enhanced chemiluminescent. A major band is observed at ~52 kDa corresponding to full-length IRAK4. In THP-1 lysates, an additional lower-migrating band appears, consistent with a mixture of phosphorylated and non-phosphorylated forms of IRAK4 reported in activated myeloid cells.

Description

IRAK4 antibody detects Interleukin-1 receptor-associated kinase 4, a serine/threonine kinase that mediates innate immune signaling through Toll-like receptors (TLRs) and interleukin-1 receptors (IL-1Rs). Encoded by the IRAK4 gene on chromosome 12q12, this kinase functions as a central adaptor and activator in MyD88-dependent inflammatory pathways.

Upon receptor activation, IRAK4 phosphorylates downstream kinases and recruits TRAF6, leading to activation of NF-kB and MAPK signaling cascades that drive cytokine production and immune defense.

Structurally, IRAK4 contains an N-terminal death domain that mediates interaction with MyD88 and IRAK1, a kinase domain responsible for autophosphorylation, and regulatory regions that ensure signal specificity. IRAK4 acts as the first kinase activated in the TLR/IL-1R pathway, enabling the assembly of the Myddosome complex. This signaling cascade is essential for early innate immune responses against bacterial and viral pathogens.

The IRAK4 antibody is widely used in immunology, inflammation, and infection research to study signal transduction, cytokine regulation, and kinase activation. Western blot analysis detects a 52 kilodalton band corresponding to IRAK4, while immunofluorescence and immunohistochemistry show cytoplasmic staining in immune and epithelial cells. This antibody supports characterization of TLR signaling and innate immune responses in both normal and pathological states.

Deficiency or loss-of-function mutations in IRAK4 cause primary immunodeficiency characterized by impaired IL-1 and TLR signaling and recurrent bacterial infections. Conversely, overactivation contributes to chronic inflammation, autoimmune diseases, and cancer. The IRAK4 antibody provides a reliable tool for exploring innate immune signaling and therapeutic kinase targeting. NSJ Bioreagents supplies this antibody validated for its applications to ensure consistent detection across immune research applications.

Application Notes

Optimal dilution of the IRAK4 antibody should be determined by the researcher.

Immunogen

E.coli-derived human IRAK4 recombinant protein (Position: N15-S460) was used as the immunogen for the IRAK4 antibody.

Storage

After reconstitution, the IRAK4 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

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