Anti-IRAK-1 Antibody [JE60-03]

HA720079

Product Type:	Recombinant Rabbit monoclonal IgG, primary antibodies
Species reactivity:	Human, Mouse
Applications:	WB, IHC-P, IP
Molecular Wt:	Predicted band size: 77 kDa
Clone number:	JE60-03

Description: 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.

Immunogen: Recombinant protein within human IRAK-1 aa 201-500/712.

Positive control: A549 cell lysate, HeLa cell lysate, human colon cancer tissue.

Subcellular location: Cytoplasm, Lipid droplet, Nucleus.

Database links: SwissProt: P51617 Human | Q62406 Mouse

Recommended Dilutions:

WB	1:2,000
IHC-P	1:100-1:200
IP	1-2μg/sample

Storage Buffer: 1*TBS (pH7.4), 0.05% BSA, 40% Glycerol. Preservative: 0.05% Sodium Azide.

Storage Instruction: Shipped at 4℃. Store at +4℃ short term (1-2 weeks). It is recommended to aliquot into single-use upon delivery. Store at -20℃ long term.

Purity: Protein A affinity purified.

Images

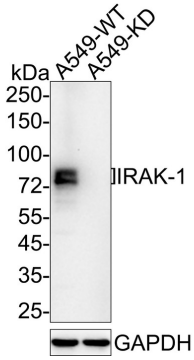

Fig1: Western blot analysis of IRAK-1 on different lysates with Rabbit anti-IRAK-1 antibody (HA720079) at 1/2,000 dilution.

Lane 1: A549-si NT cell lysate
Lane 2: A549-si IRAK-1 cell lysate

Lysates/proteins at 10 µg/Lane.

Predicted band size: 77 kDa
Observed band size: 75/77 kDa

Exposure time: 3 minutes; ECL: K1801;

4-20% SDS-PAGE gel.

Proteins were transferred to a PVDF membrane and blocked with 5% NFDM/TBST for 1 hour at room temperature. The primary antibody (HA720079) at 1/2,000 dilution was used in 5% NFDM/TBST at 4℃ overnight. Goat Anti-Rabbit IgG - HRP Secondary Antibody (HA1001) at 1/50,000 dilution was used for 1 hour at room temperature.

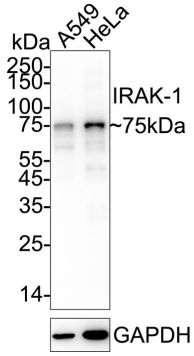

Fig2: Western blot analysis of IRAK-1 on different lysates with Rabbit anti-IRAK-1 antibody (HA720079) at 1/2,000 dilution.

Lane 1: A549 cell lysate
Lane 2: HeLa cell lysate

Lysates/proteins at 10 µg/Lane.

Predicted band size: 77 kDa
Observed band size: 75 kDa

Exposure time: 30 seconds; ECL: K1802;

4-20% SDS-PAGE gel.

Proteins were transferred to a PVDF membrane and blocked with 5% NFDM/TBST for 1 hour at room temperature. The primary antibody (HA720079) at 1/2,000 dilution was used in 5% NFDM/TBST at 4℃ overnight. Goat Anti-Rabbit IgG - HRP Secondary Antibody (HA1001) at 1/50,000 dilution was used for 1 hour at room temperature.

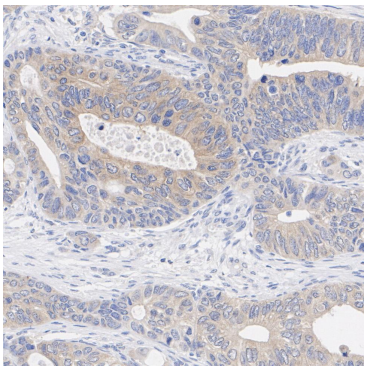

Fig3: Immunohistochemical analysis of paraffin-embedded human colon cancer tissue with Rabbit anti-IRAK-1 antibody (HA720079) at 1/200 dilution.

The section was pre-treated using heat mediated antigen retrieval with Tris-EDTA buffer (pH 9.0) for 20 minutes. The tissues were blocked in 1% BSA for 20 minutes at room temperature, washed with ddH_2O and PBS, and then probed with the primary antibody (HA720079) at 1/200 dilution for 1 hour at room temperature. The detection was performed using an HRP conjugated compact polymer system. DAB was used as the chromogen. Tissues were counterstained with hematoxylin and mounted with DPX.

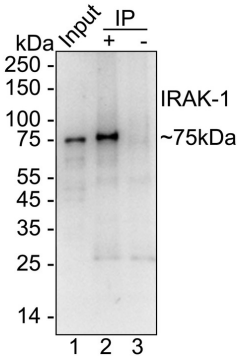

Fig4: IRAK-1 was immunoprecipitated from 0.2 mg HeLa cell lysate with HA720079 at 2 µg/10 µl beads. Western blot was performed from the immunoprecipitate using HA720079 at 1/2,000 dilution. Anti-Rabbit IgG for IP Nano-secondary antibody (NBI01H) at 1/5,000 dilution was used for 1 hour at room temperature.

Lane 1: HeLa cell lysate (input)
Lane 2: HA720079 IP in HeLa cell lysate
Lane 3: Rabbit IgG instead of HA720079 in HeLa cell lysate

Blocking/Dilution buffer: 5% NFDM/TBST
Exposure time: 1 minute; ECL: K1802

Background References

1. Liu X. et. al. BAP31 regulates IRAK1-dependent neuroinflammation in microglia. J Neuroinflammation. 2019 Dec
2. Liu PH. et. al. An IRAK1-PIN1 signalling axis drives intrinsic tumour resistance to radiation therapy. Nat Cell Biol. 2019 Feb