

IRAK-1 (B-5): sc-55530

BACKGROUND

Three structurally related ligands for IL-1Rs have been described. These include two agonists, IL-1 α and IL-1 β , and a specific receptor antagonist, IL-1R α . Two distinct receptors designated IL-1RI and IL-1RII have been identified, each of which belong to the Ig superfamily. The preponderance of evidence suggests IL-1RI to be the functional IL-1 receptor. Binding of IL-1 to its cognate receptor results in the activation of the NF κ B signaling pathway. The IL-1-dependent kinase termed IRAK (for IL-1 receptor-associated kinase) co-immunoprecipitates with activated IL-1RI and has been implicated as an upstream mediator of NF κ B activation. Additional support for this assertion comes from the fact that a related *Drosophila* protein, Pelle, is a known upstream activator of Dorsal, the *Drosophila* homolog of NF κ B.

REFERENCES

1. Sims, J.E., et al. 1989. Cloning of the interleukin-1 receptor from human T cells. Proc. Natl. Acad. Sci. USA 86: 8946-8950.
2. McMahan, C.J., et al. 1991. A novel IL-1 receptor, cloned from B cells by mammalian expression, is expressed in many cell types. EMBO J. 10: 2821-2832.
3. Dower, S.K., et al. 1992. The interleukin-1 system: receptors, ligands and signals. Chem. Immunol. 51: 33-64.

CHROMOSOMAL LOCATION

Genetic locus: IRAK1 (human) mapping to Xq28.

SOURCE

IRAK-1 (B-5) is a mouse monoclonal antibody raised against amino acids 440-712 mapping at the C-terminus of IRAK-1 of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

IRAK-1 (B-5) is recommended for detection of IRAK-1 of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for IRAK-1 siRNA (h): sc-35704, IRAK-1 shRNA Plasmid (h): sc-35704-SH and IRAK-1 shRNA (h) Lentiviral Particles: sc-35704-V.

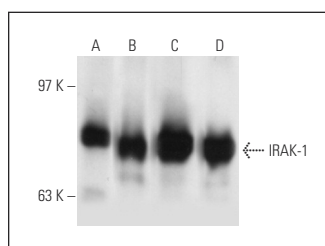
Molecular Weight of IRAK-1: 80 kDa.

Positive Controls: IRAK-1 (h4): 293T Lysate: sc-177400, MCF7 whole cell lysate: sc-2206 or HeLa whole cell lysate: sc-2200.

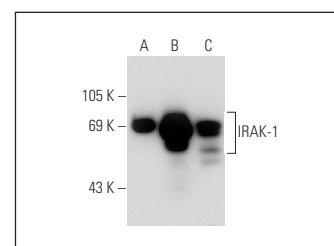
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz[®] Mounting Medium: sc-24941 or UltraCruz[®] Hard-set Mounting Medium: sc-359850.

DATA



IRAK-1 (B-5): sc-55530. Western blot analysis of IRAK-1 expression in HeLa (A) and PMA treated K-562 (B) whole cell lysates and K-562 (C) and PMA treated K-562 (D) nuclear extracts.



IRAK-1 (B-5): sc-55530. Western blot analysis of IRAK-1 expression in non-transfected 293T: sc-117752 (A), human IRAK-1 transfected 293T: sc-177400 (B) and MCF7 (C) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Cui, J.G., et al. 2010. Differential regulation of interleukin-1 receptor-associated kinase-1 (IRAK-1) and IRAK-2 by microRNA-146a and NF κ B in stressed human astroglial cells and in Alzheimer disease. J. Biol. Chem. 285: 38951-38960.
2. Lin, X.W., et al. 2013. WW domain containing E3 ubiquitin protein ligase 1 (WWP1) negatively regulates TLR4-mediated TNF- α and IL-6 production by proteasomal degradation of TNF receptor associated factor 6 (TRAF6). PLoS ONE 8: e67633.
3. Ke, Y., et al. 2017. PARP1 promotes gene expression at the post-transcriptional level by modulating the RNA-binding protein HuR. Nat. Commun. 8: 14632.
4. O'Driscoll, D.N., et al. 2017. Expression of X-linked Toll-like receptor 4 signaling genes in female vs. male neonates. Pediatr. Res. 81: 831-837.
5. Smith, T.L., et al. 2018. Tie2 signalling through Erk1/2 regulates TLR4 driven inflammation. Cell. Signal. 51: 211-221.

STORAGE

Store at 4 $^{\circ}$ C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.



See **IRAK-1 (F-4): sc-5288** for IRAK-1 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor[®] 488, 546, 594, 647, 680 and 790.