SANTA CRUZ BIOTECHNOLOGY, INC.

IRAK-1 (C-2): sc-5287

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Three structurally related ligands for IL-1Rs have been described. These include two agonists, IL-1α and IL-1β, and a specific receptor antagonist, IL-1Rα. 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 NFκB 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 NFκB 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 NFκB.

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.

CHROMOSOMAL LOCATION

Genetic locus: IRAK1 (human) mapping to Xq28.

SOURCE

IRAK-1 (C-2) is a mouse monoclonal antibody raised against amino acids 440-712 of IRAK-1 of human origin.

PRODUCT

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

APPLICATIONS

IRAK-1 (C-2) is recommended for detection of IRAK-1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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: HeLa nuclear extract: sc-2120, THP-1 cell lysate: sc-2238 or Jurkat whole cell lysate: sc-2204.

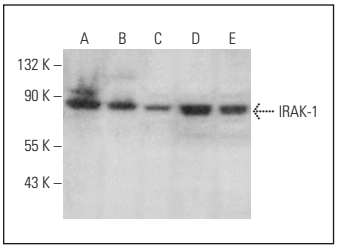
STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

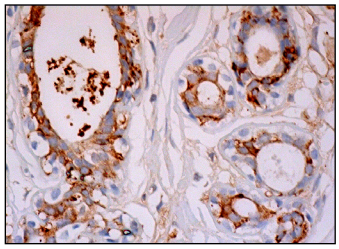
RESEARCH USE

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

DATA



IRAK-1 (C-2): sc-5287. Western blot analysis of IRAK-1 expression in HeLa nuclear extract (**A**) and SK-BR-3 (**B**), SK-N-MC (**C**), THP-1 (**D**) and Jurkat (**E**) whole cell lysates.



IRAK-1 (C-2): sc-5287. Immunoperoxidase staining of formalin fixed, paraffin-embedded human breast tissue showing cytoplasmic and membrane staining of glandular cells and membrane staining of adipocytes.

SELECT PRODUCT CITATIONS

1. Mytar, B., et al. 2003. Tumor cell-induced deactivation of human monocytes. J. Leukoc. Biol. 74: 1094-1101.
2. Siedlar, M., et al. 2004. Tolerance induced by the lipopeptide Pam3Cys is due to ablation of IL-1R-associated kinase-1. J. Immunol. 173: 2736-2745.
3. Siedlar, M., et al. 2005. Depressed tumor necrosis factor α and interleukin-12p40 production by peripheral blood mononuclear cells of gastric cancer patients: association with IL-1R-associated kinase-1 protein expression and disease stage. Int. J. Cancer 114: 144-152.
4. Albrecht, V., et al. 2008. Tolerance induced via TLR2 and TLR4 in human dendritic cells: role of IRAK-1. BMC Immunol. 9: 69.
5. Sarir, H., et al. 2009. Cigarette smoke regulates the expression of TLR4 and IL-8 production by human macrophages. J. Inflamm. 6: 12.
6. Hou, J., et al. 2009. MicroRNA-146a feedback inhibits RIG-I-dependent type I IFN production in macrophages by targeting TRAF6, IRAK1, and IRAK2. J. Immunol. 183: 2150-2158.
7. Berthet, J., et al. 2010. Toll-like receptor 4 signal transduction in platelets: novel pathways. Br. J. Haematol. 151: 89-92.
8. Roos, J., et al. 2021. miR-146a regulates Insulin sensitivity via NPR3. Cell. Mol. Life Sci. 78: 2987-3003.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

CONJUGATES

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.