

# IRAK-1 (C-19): sc-1894

## BACKGROUND

Three structurally related ligands for IL-1Rs have been described. These include two agonists, IL-1 $\alpha$  and IL-1 $\beta$ , and a specific receptor antagonist, IL-1R $\alpha$ . 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 $\kappa$ 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 up-stream mediator of NF $\kappa$ B activation. Additional support for this assertion comes from the fact that a related *Drosophila* protein, Pelle, is a known up-stream activator of Dorsal, the *Drosophila* homolog of NF $\kappa$ 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. Arend, W.P., et al. 1994. Binding of IL-1 $\alpha$ , IL-1 $\beta$  and IL-1 receptor antagonist by soluble IL-1 receptors and levels of soluble IL-1 receptors in synovial fluids. J. Immunol. 153: 4766-4774.

## CHROMOSOMAL LOCATION

Genetic locus: IRAK1 (human) mapping to Xq28.

## SOURCE

IRAK-1 (C-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of IRAK-1 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-1894 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

IRAK-1 (C-19) 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  $\mu$ g per 100-500  $\mu$ 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.

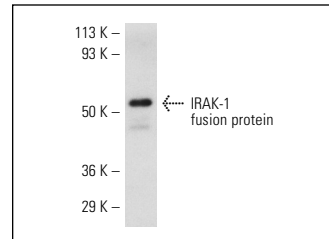
Molecular Weight of IRAK-1: 80 kDa.

Positive Controls: MCF7 nuclear extract: sc-2149, K-562 nuclear extract: sc-2130 or HeLa whole cell lysate: sc-2200.

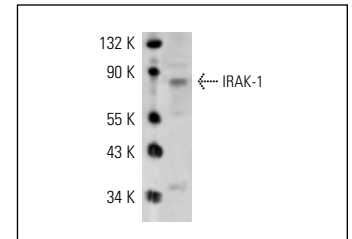
## STORAGE

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

## DATA



IRAK-1 (C-19): sc-1894. Western blot analysis of human recombinant IRAK-1 fusion protein.



IRAK-1 (C-19): sc-1894. Western blot analysis of IRAK-1 expression in MCF7 nuclear extract.

## SELECT PRODUCT CITATIONS

1. Imaeda, H., et al. 2002. *In vivo* response of neutrophils and epithelial cells to lipopolysaccharide injected into the monkey ileum. Histochem. Cell Biol. 118: 381-388.
2. Asehnoune, K., et al. 2004. Involvement of reactive oxygen species in toll-like receptor 4-dependent activation of NF $\kappa$ B. J. Immunol. 172: 2522-2529.
3. Williams, K., et al. 2005. The CATERPILLER protein monarch-1 is an antagonist of toll-like receptor-, tumor necrosis factor  $\alpha$ -, and Myco-bacterium tuberculosis-induced pro-inflammatory signals. J. Biol. Chem. 280: 39914-39924.
4. Xia, M., et al. 2008. Downregulation of toll-like receptor 4 in the granulation tissues of postoperative mastoid cavities with otorrhea. Acta Otolaryngol. 128: 1077-1084.
5. Cui, J.G., et al. 2010. Differential regulation of interleukin-1 receptor-associated kinase-1 (IRAK-1) and IRAK-2 by microRNA-146 $\alpha$  and NF- $\kappa$ B in stressed human astroglial cells and in Alzheimer disease. J. Biol. Chem. 285: 38951-38960.

## RESEARCH USE

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


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Try **IRAK-1 (F-4): sc-5288** or **IRAK-1 (B-5): sc-55530**, our highly recommended monoclonal alternatives to IRAK-1 (C-19). Also, for AC, HRP, FITC, PE, Alexa Fluor<sup>®</sup> 488 and Alexa Fluor<sup>®</sup> 647 conjugates, see **IRAK-1 (F-4): sc-5288**.