

# IRAK-1 (h): 293T Lysate: sc-116528

## 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 upstream mediator of NF $\kappa$ 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 $\kappa$ B.

## REFERENCES

1. Sims, J.E., et al. 1989. Cloning of the IL-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.
4. Giri, J.G., et al. 1994. Elevated levels of shed type II IL-1 receptor in sepsis. Potential role for type II receptor in regulation of IL-1 responses. *J. Immunol.* 153: 5802-5809.
5. Croston, G.E., et al. 1995. NF $\kappa$ B activation by interleukin-1 (IL-1) requires an IL-1 receptor-associated protein kinase activity. *J. Biol. Chem.* 270: 16514-16517.
6. Cao, Z., et al. 1996. IRAK: a kinase associated with the IL-1 receptor. *Science* 271: 1128-1131.
7. Hartupée, J., et al. 2008. Interleukin 1 $\alpha$ -induced NF $\kappa$ B activation and chemokine mRNA stabilization diverge at IRAK1. *J. Biol. Chem.* 283: 15689-15693.
8. Conze, D.B., et al. 2008. Lys63-linked polyubiquitination of IRAK-1 is required for interleukin-1 receptor- and toll-like receptor-mediated NF $\kappa$ B activation. *Mol. Cell. Biol.* 28: 3538-3547.

## CHROMOSOMAL LOCATION

Genetic locus: IRAK1 (human) mapping to Xq28.

## PRODUCT

IRAK-1 (h): 293T Lysate represents a lysate of human IRAK-1 transfected 293T cells and is provided as 100  $\mu$ g protein in 200  $\mu$ l SDS-PAGE buffer.

## STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

## APPLICATIONS

IRAK-1 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive IRAK-1 antibodies. Recommended use: 10-20  $\mu$ l per lane.

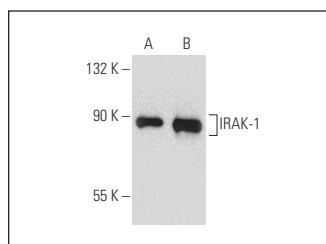
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

IRAK-1 (F-4): sc-5288 is recommended as a positive control antibody for Western Blot analysis of enhanced human IRAK-1 expression in IRAK-1 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:  
1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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.

## DATA



IRAK-1 (F-4): sc-5288. Western blot analysis of IRAK-1 expression in non-transfected: sc-117752 (A) and human IRAK-1 transfected: sc-116528 (B) 293T whole cell lysates.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.