

# IRAK-2 (G-20): sc-23652

## BACKGROUND

The interleukin-1 receptor-associated kinases (IRAKs) are important downstream signaling components of Toll-like receptors (TLRs). Four mammalian IRAKs have been found, namely IRAK-1, IRAK-2, IRAK-4, and IRAK-M, all of which share sequence homology to the *Drosophila melanogaster* protein kinase Pelle, and all contain a death domain (DD). The DD is used for protein-protein interactions with the DDs of other molecules, IRAK2 uses its DD to mediate its interaction with MyD88. The IRAKs have putative kinase domains, although IRAK1 has dispensable kinase activity because interleukin-1-induced NF $\kappa$ B activation could still be driven by a kinase-inactive mutant. Due to the absence of certain key residues within their putative kinase domains, both IRAK-2 and IRAK-M are catalytically inactive.

## 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.
4. 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.
5. 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.
6. 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.
7. Cao, Z., et al. 1996. IRAK: a kinase associated with the interleukin-1 receptor. *Science* 271: 1128-1131.

## CHROMOSOMAL LOCATION

Genetic locus: Irak2 (mouse) mapping to 6 E3.

## SOURCE

IRAK-2 (G-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of IRAK-2 of mouse 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-23652 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## RESEARCH USE

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

## APPLICATIONS

IRAK-2 (G-20) is recommended for detection of IRAK-2 of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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-2 siRNA (m): sc-146281, IRAK-2 shRNA Plasmid (m): sc-146281-SH and IRAK-2 shRNA (m) Lentiviral Particles: sc-146281-V.

Molecular Weight of IRAK-2: 69 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## SELECT PRODUCT CITATIONS

1. 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.
2. 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 $\kappa$ B in stressed human astroglial cells and in Alzheimer disease. *J. Biol. Chem.* 285: 38951-38960.

## STORAGE

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

## PROTOCOLS

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