SANTA CRUZ BIOTECHNOLOGY, INC.

# IP3R-I (H-80): sc-28614

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## BACKGROUND

Inositol 1,4,5-triphosphate (IP3) functions as a second messenger for a myriad of extracellular stimuli including hormones, growth factors and neurotransmitters. Receptor tyrosine kinases indirectly increase the intracellular levels of IP3 through the activation of phospholipases such as phospholipase C (PLC), which convert phosphatidylinositol-4,5 bisphosphate into IP3 and diacylglycerol (DAG). The inositol 1,4,5- triphosphate receptor, IP3R, acts as an inositol triphosphate (IP3)-gated calcium release channel in a variety of cell types. Three IP3 receptor subtypes have been described and are designated IP3R-I, IP3R-II and IP3R-III. IP3R-I is the predominant IP3R subtype expressed in neuronal tissues and the central nervous system, but is also expressed at high levels in the liver.

## REFERENCES


1. Blondel, O., et al. 1993. Sequence and functional characterization of a third inositol trisphosphate receptor subtype, IP3R-3, expressed in pancreatic islets, kidney, gastrointestinal tract, and other tissues. J. Biol. Chem. 268: 11356-11363.
2. Cameron, A.M., et al. 1995. Calcineurin associated with the inositol 1,4,5-trisphosphate receptor-FKBP12 complex modulates $Ca^{2+}$ flux. Cell 83: 463-472.
3. Raghu, P., et al. 1995. The inositol 1,4,5-triphosphate receptor expression in Drosophila suggests a role for IP3 signalling in muscle development and adult hemosensory functions. Dev. Biol. 171: 564-577.
4. Zhang, S.X., et al. 1995. In situ hybridization of mRNA expression for IP3 receptor and IP3-3-kinase in rat brain after transient focal cerebral ischemia. Mol. Brain Res. 32: 252-260.
5. Joseph, S.K., et al. 1995. Heteroligomers of type-I and type-III inositol trisphosphate receptors in WB rat liver epithelial cells. J. Biol. Chem. 270: 23310-23316.


## CHROMOSOMAL LOCATION

Genetic locus: ITPR1 (human) mapping to 3p26.1; Itpr1 (mouse) mapping to 6 E1.

## SOURCE

IP3R-I (H-80) is a rabbit polyclonal antibody raised against amino acids 1894-1973 mapping within a cytoplasmic domain of IP3R-I of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## 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.

## APPLICATIONS

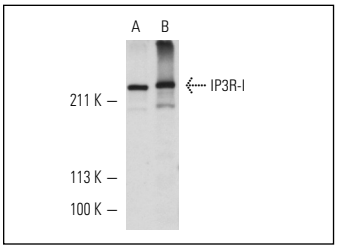
IP3R-I (H-80) is recommended for detection of IP3R-I of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000). IP3R-I (H-80) is also recommended for detection of IP3R-I in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for IP3R-I siRNA (h): sc-42475, IP3R-I siRNA (m): sc-42476, IP3R-I shRNA Plasmid (h): sc-42475-SH, IP3R-I shRNA Plasmid (m): sc-42476-SH, IP3R-I shRNA (h) Lentiviral Particles: sc-42475-V and IP3R-I shRNA (m) Lentiviral Particles: sc-42476-V.

Molecular Weight of IP3R-I monomer: 313 kDa.

Positive Controls: HuT 78 whole cell lysate: sc-2208 or mouse brain extract: sc-2253.

## DATA




IP3R-I (H-80): sc-28614. Western blot analysis of IP3R-I expression in HuT 78 whole cell lysate (**A**) and mouse brain tissue extract (**B**).

## SELECT PRODUCT CITATIONS


1. Kalamvoki, M., et al. 2007. Bcl-2 blocks accretion or depletion of stored calcium but has no effect on the redistribution of IP3 receptor I mediated by glycoprotein E of herpes simplex virus 1. J. Virol. 81: 6316-6325.
2. Guillemin, Y., et al. 2009. Oocytes and early embryos selectively express the survival factor Bcl-2 L10. J. Mol. Med. 87: 923-940.
3. Gerasimenko, J.V., et al. 2009. Pancreatic protease activation by alcohol metabolite depends on $Ca^{2+}$ release via acid store IP3 receptors. Proc. Natl. Acad. Sci. USA 106: 10758-10763.
4. Yehuda-Shnaidman, E., et al. 2010. Gating of the mitochondrial permeability transition pore by thyroid hormone. FASEB J. 24: 93-104.
5. Oláh, T., et al. 2011. Trisk 32 regulates IP(3) receptors in rat skeletal myoblasts. Pflugers Arch. 462: 599-610.