SANTA CRUZ BIOTECHNOLOGY, INC.

IP3R-I/II/III (B-2): sc-377518

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.

SOURCE

IP3R-I/II/III (B-2) is a mouse monoclonal antibody raised against amino acids 2402-2701 mapping at the C-terminus of IP3R-II of human origin.

PRODUCT

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

IP3R-I/II/III (B-2) is available conjugated to agarose (sc-377518 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-377518 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377518 PE), fluorescein (sc-377518 FITC), Alexa Fluor® 488 (sc-377518 AF488), Alexa Fluor® 546 (sc-377518 AF546), Alexa Fluor® 594 (sc-377518 AF594) or Alexa Fluor® 647 (sc-377518 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-377518 AF680) or Alexa Fluor® 790 (sc-377518 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

IP3R-I/II/III (B-2) is recommended for detection of IP3R-I, IP3R-II and IP3R-III of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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).

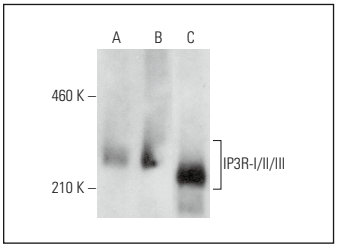
Molecular Weight of IP3R-I/II/III: 313/260/250 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, U-698-M whole cell lysate: sc-364799 or Hep G2 cell lysate: sc-2227.

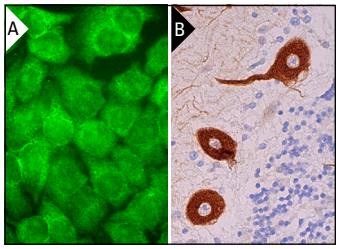
STORAGE

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

DATA



IP3R-I/II/III (B-2): sc-377518. Western blot analysis of IP3R-I/II/III expression in HeLa (**A**), U-698-M (**B**) and Hep G2 (**C**) whole cell lysates.



IP3R-I/II/III (B-2): sc-377518. Immunofluorescence staining of formalin-fixed HeLa cells showing cytoplasmic and nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebellum tissue showing cytoplasmic staining of purkinje cells (**B**).

SELECT PRODUCT CITATIONS

1. Dragoni, S., et al. 2014. Store-operated Ca^{2+} entry does not control proliferation in primary cultures of human metastatic renal cellular carcinoma. Biomed Res. Int. 2014: 739494.
2. Zuccolo, E., et al. 2016. Constitutive store-operated Ca^{2+} entry leads to enhanced nitric oxide production and proliferation in infantile hemangioma-derived endothelial colony-forming cells. Stem Cells Dev. 25: 301-319.
3. Lodola, F., et al. 2017. VEGF-induced intracellular Ca^{2+} oscillations are down-regulated and do not stimulate angiogenesis in breast cancer-derived endothelial colony forming cells. Oncotarget 8: 95223-95246.
4. Zuccolo, E., et al. 2018. Stim and Orai mediate constitutive Ca^{2+} entry and control endoplasmic reticulum Ca^{2+} refilling in primary cultures of colorectal carcinoma cells. Oncotarget 9: 31098-31119.
5. Yanda, M.K., et al. 2019. Role of calcium in adult onset polycystic kidney disease. Cell. Signal. 53: 140-150.
6. Adams, A., et al. 2020. Knockdown of IP3R1 disrupts TBC-ER contact sites and the morphology of apical processes encapsulating late spermatids. Biol. Reprod. 103: 669-680.
7. Jia, T., et al. 2021. Pharmic activation of PKG2 alleviates diabetes-induced osteoblast dysfunction by suppressing PLCβ1-Ca^{2+}-mediated endoplasmic reticulum stress. Oxid. Med. Cell. Longev. 2021: 5552530.
8. Butera, G., et al. 2021. Parvalbumin affects skeletal muscle trophism through modulation of mitochondrial calcium uptake. Cell Rep. 35: 109087.
9. Chen, Y., et al. 2021. Mannan-binding lectin deficiency augments hepatic endoplasmic reticulum stress through IP3R-controlled calcium release. Cell Calcium 100: 102477.

RESEARCH USE

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