SANTA CRUZ BIOTECHNOLOGY, INC.

ISYNA1 (C-9): sc-271830

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Myo-inositol is an important constituent of membrane phospholipids and is a precursor for the phosphoinositide signaling pathway. ISYNA1 (inositol-3-phosphate synthase 1), also known as IPS, INO1 or INOS, is a 558 amino acid enzyme belonging to the myo-inositol-1-phosphate synthase family. Highly expressed in testis, ovary, heart, placenta and pancreas, with weak expression in blood leukocytes, thymus, skeletal muscle and colon, SYNA1 is the key enzyme myo-inositol biosynthesis, as it catalyzes the conversion of glucose 6-phosphate to 1-myo-inositol 1-phosphate in a NAD-dependent manner. ISYNA1 is the rate-limiting enzyme in the synthesis of all inositol-containing compounds. ISYNA1 may be upregulated by E2F-1, and is inhibited by valproate (VPA) and lithium, which are mood-stabilizing drugs.

CHROMOSOMAL LOCATION

Genetic locus: ISYNA1 (human) mapping to 19p13.11.

SOURCE

ISYNA1 (C-9) is a mouse monoclonal antibody raised against amino acids 259-558 mapping at the C-terminus of ISYNA1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

ISYNA1 (C-9) is available conjugated to agarose (sc-271830 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-271830 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271830 PE), fluorescein (sc-271830 FITC), Alexa Fluor® 488 (sc-271830 AF488), Alexa Fluor® 546 (sc-271830 AF546), Alexa Fluor® 594 (sc-271830 AF594) or Alexa Fluor® 647 (sc-271830 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271830 AF680) or Alexa Fluor® 790 (sc-271830 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

ISYNA1 (C-9) is recommended for detection of ISYNA1 of 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).

Suitable for use as control antibody for ISYNA1 siRNA (h): sc-97862, ISYNA1 shRNA Plasmid (h): sc-97862-SH and ISYNA1 shRNA (h) Lentiviral Particles: sc-97862-V.

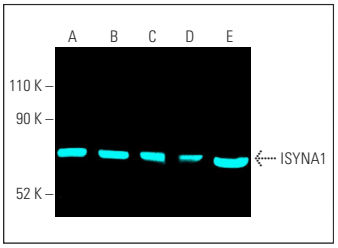
Molecular Weight of ISYNA1: 62 kDa.

Positive Controls: HCT-116 whole cell lysate: sc-364175, Y79 whole cell lysate: sc-2240 or K-562 whole cell lysate: sc-2203.

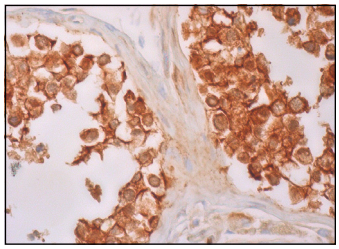
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



ISYNA1 (C-9) Alexa Fluor® 647: sc-271830 AF647. Direct fluorescent western blot analysis of ISYNA1 expression in HCT-116 (**A**), Y79 (**B**), K-562 (**C**) and HEK293T (**D**) whole cell lysates and human testis tissue extract (**E**). Blocked with UltraCruz® Blocking Reagent: sc-516214.



ISYNA1 (C-9): sc-271830. Immunoperoxidase staining of formalin fixed, paraffin-embedded human testis tissue showing cytoplasmic and membrane staining of cells in seminiferous ducts.

SELECT PRODUCT CITATIONS

1. Koguchi, T., et al. 2016. Regulation of myo-inositol biosynthesis by p53-ISYNA1 pathway. Int. J. Oncol. 48: 2415-2424.
2. Qiu, D., et al. 2020. Analysis of inositol phosphate metabolism by capillary electrophoresis electrospray ionization mass spectrometry. Nat. Commun. 11: 6035.
3. Wei, Y., et al. 2022. SLC5A3-dependent myo-inositol auxotrophy in acute myeloid leukemia. Cancer Discov. 12: 450-467.
4. Zhao, X., et al. 2023. Colnoy-stimulating factor 1 positive ($CSF1^+$) secretory epithelial cells induce excessive trophoblast invasion in tubal pregnancy rupture. Cell Prolif. 56: e13408.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.