

ISYNA1 (T-17): sc-168214

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.

REFERENCES

- Hegeman, C.E., et al. 2001. Expression of D-myo-inositol-3-phosphate synthase in soybean. Implications for phytic acid biosynthesis. *Plant Physiol.* 125: 1941-1948.
- Agam, G., et al. 2002. Myo-inositol-1-phosphate (MIP) synthase: a possible new target for antibipolar drugs. *Bipolar Disord.* 4: 15-20.
- Seelan, R.S., et al. 2004. E2F1 regulation of the human myo-inositol 1-phosphate synthase (ISYNA1) gene promoter. *Arch. Biochem. Biophys.* 431: 95-106.
- Chauvin, T.R. and Griswold, M.D. 2004. Characterization of the expression and regulation of genes necessary for myo-inositol biosynthesis and transport in the seminiferous epithelium. *Biol. Reprod.* 70: 744-751.
- Ju, S., et al. 2004. Human 1-D-myo-inositol-3-phosphate synthase is functional in yeast. *J. Biol. Chem.* 279: 21759-21765.
- Groenen, P.M., et al. 2004. Spina bifida and genetic factors related to myo-inositol, glucose, and zinc. *Mol. Genet. Metab.* 82: 154-161.
- Shaltiel, G., et al. 2007. Effect of valproate derivatives on human brain myo-inositol-1-phosphate (MIP) synthase activity and amphetamine-induced rearing. *Pharmacol. Rep.* 59: 402-407.
- Einat, H., et al. 2008. Myo-inositol-1-phosphate (MIP) synthase inhibition: *in vivo* study in rats. *J. Neural Transm.* 115: 55-58.

CHROMOSOMAL LOCATION

Genetic locus: ISYNA1 (human) mapping to 19p13.11; *Isyna1* (mouse) mapping to 8 B3.3.

SOURCE

ISYNA1 (T-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of ISYNA1 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.

Blocking peptide available for competition studies, sc-168214 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

ISYNA1 (T-17) is recommended for detection of ISYNA1 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).

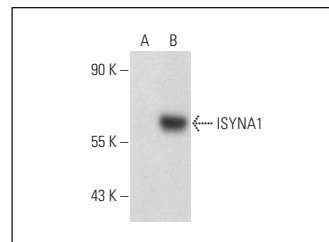
ISYNA1 (T-17) is also recommended for detection of ISYNA1 in additional species, including equine, canine and bovine.

Suitable for use as control antibody for ISYNA1 siRNA (h): sc-97862, ISYNA1 siRNA (m): sc-146305, ISYNA1 shRNA Plasmid (h): sc-97862-SH, ISYNA1 shRNA Plasmid (m): sc-146305-SH, ISYNA1 shRNA (h) Lentiviral Particles: sc-97862-V and ISYNA1 shRNA (m) Lentiviral Particles: sc-146305-V.

Molecular Weight of ISYNA1: 62 kDa.

Positive Controls: A549 cell lysate: sc-2413 or ISYNA1 (m2): 293T Lysate: sc-121125

DATA



ISYNA1 (T-17): sc-168214. Western blot analysis of ISYNA1 expression in non-transfected: sc-117752 (A) and mouse ISYNA1 transfected: sc-121125 (B) 293T whole cell lysates.

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.

PROTOCOLS

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

MONOS
Satisfaction
Guaranteed

Try **ISYNA1 (C-9): sc-271830** or **ISYNA1 (C-8): sc-377245**, our highly recommended monoclonal alternatives to ISYNA1 (T-17).