

# Type I 5-phosphatase (N-20): sc-12302

## BACKGROUND

The inositol polyphosphate 5-phosphatases selectively remove the phosphate from the 5-position of various phosphatidylinositols, which generate second messengers in response to extracellular signals. The type I inositol polyphosphate 5-phosphatase is predominantly expressed in heart, brain, skeletal muscle, and human placenta. The 5-phosphatase associates with 14-3-3  $\zeta$ , and, in turn, activates the hydrolysis of inositol 1,4,5-trisphosphate and inositol 1,3,4,5-tetrakisphosphate. The type II inositol polyphosphate 5-phosphatase encodes a full length protein and a splice variant, which is the predominant form. The 5-phosphatase is ubiquitously expressed, and hydrolyzes inositol 1,4,5-trisphosphate, inositol 1,3,4,5-tetrakisphosphate, and phosphatidylinositol 4,5-bisphosphate. Both type I and II 5-phosphatases are thought to regulate the level of intracellular calcium by acting as signal terminating enzymes.

## REFERENCES

1. Laxminarayan, K.M., et al. 1993. Purification and characterization of a 43-kDa membrane-associated inositol polyphosphate 5-phosphatase from human placenta. *J. Biol. Chem.* 268: 4968-4974.
2. Laxminarayan, K.M., et al. 1994. Characterization of a cDNA encoding the 43-kDa membrane-associated inositol-polyphosphate 5-phosphatase. *J. Biol. Chem.* 269: 17305-17310.
3. Speed, C.J., et al. 1995. Tissue distribution and intracellular localisation of the 75-kDa inositol polyphosphate 5-phosphatase. *Eur. J. Biochem.* 234: 216-224.
4. Mitchell, C.A., et al. 1996. Regulation of second messengers by the inositol polyphosphate 5-phosphatases. *Biochem. Soc. Trans.* 24: 994-1000.
5. Campbell, J.K., et al. 1997. Activation of the 43 kDa inositol polyphosphate 5-phosphatase by 14-3-3 $\zeta$ . *Biochemistry* 36: 15363-15370.
6. Zhang, X. and Majerus, P.W. 1998. Phosphatidylinositol signalling reactions. *Semin. Cell Dev. Biol.* 9: 153-160.

## CHROMOSOMAL LOCATION

Genetic locus: INPP5A (human) mapping to 10q26.3; Inpp5a (mouse) mapping to 7 F4.

## SOURCE

Type I 5-phosphatase (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Type I 5-phosphatase of human 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-12302 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

Type I 5-phosphatase (N-20) is recommended for detection of type I 5-phosphatase of mouse and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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).

Type I 5-phosphatase (N-20) is also recommended for detection of Type I 5-phosphatase in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for Type I 5-phosphatase siRNA (h): sc-39095, Type I 5-phosphatase siRNA (m): sc-154827, Type I 5-phosphatase shRNA Plasmid (h): sc-39095-SH, Type I 5-phosphatase shRNA Plasmid (m): sc-154827-SH, Type I 5-phosphatase shRNA (h) Lentiviral Particles: sc-39095-V and Type I 5-phosphatase shRNA (m) Lentiviral Particles: sc-154827-V.

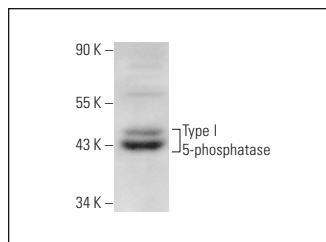
Molecular Weight of Type I 5-phosphatase: 43 kDa.

Positive Controls: mouse cerebellum extract: sc-2403.

## 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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

## DATA



Type I 5-phosphatase (N-20): sc-12302. Western blot analysis of Type I 5-phosphatase expression in mouse cerebellum tissue extract.

## STORAGE

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