

# Type I 4-phosphatase (S-21): sc-12316

## BACKGROUND

The inositol polyphosphate 4-phosphatases selectively remove the phosphate from the 4-position of various phosphatidylinositols, which generates second messengers in response to extracellular signals. Both the Type I and Type II 4-phosphatases catalyze the hydrolysis of phosphatidylinositol 3,4-bisphosphate, inositol 1,3,4-trisphosphate, and inositol 3,4-bisphosphate. Type I and Type II 4-phosphatases are both alternatively spliced into two isoforms,  $\alpha$  and  $\beta$ , which have been detected in human platelets, rat brain, heart, skeletal muscle and spleen; and all isoforms contain a conserved motif CKSAKDRT, which contains the active site consensus sequence C-X5-R. Both Type I and II 4-phosphatases are thought to regulate the level of intracellular calcium by acting as signal terminating enzymes.

## REFERENCES

1. Bansal, V.S., et al. 1990. The isolation and characterization of inositol polyphosphate 4-phosphatase. *J. Biol. Chem.* 265: 1806-1811.
2. Norris, F.A., et al. 1995. The isolation and characterization of cDNA encoding human and rat brain inositol polyphosphate 4-phosphatase. *J. Biol. Chem.* 270: 16128-16133.
3. Norris, F.A., et al. 1997. Inositol polyphosphate 4-phosphatase is inactivated by calpain-mediated proteolysis in stimulated human platelets. *J. Biol. Chem.* 272: 10987-10989.
4. Norris, F.A., et al. 1997. The cDNA cloning and characterization of inositol polyphosphate 4-phosphatase Type II. Evidence for conserved alternative splicing in the 4-phosphatase family. *J. Biol. Chem.* 272: 23859-23864.

## CHROMOSOMAL LOCATION

Genetic locus: INPP4A (human) mapping to 2q11.2.

## SOURCE

Type I 4-phosphatase (S-21) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Type I 4-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-12316 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.

## APPLICATIONS

Type I 4-phosphatase (S-21) is recommended for detection of Type I 4-phosphatase isoform  $\beta$  of 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 4-phosphatase (S-21) is also recommended for detection of Type I 4-phosphatase isoform  $\beta$  in additional species, including equine, canine and bovine.

Suitable for use as control antibody for Type I 4-phosphatase siRNA (h): sc-44177, Type I 4-phosphatase shRNA Plasmid (h): sc-44177-SH and Type I 4-phosphatase shRNA (h) Lentiviral Particles: sc-44177-V.

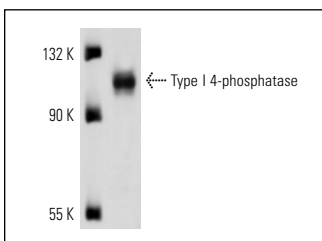
Molecular Weight of Type I 4-phosphatase: 104 kDa.

Positive Controls: human platelet extract: sc-363773.

## 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 4-phosphatase (S-21): sc-12316. Western blot analysis of Type I 4-phosphatase expression in rat brain tissue extract.

## RESEARCH USE

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



Try **Type I 4-phosphatase (E-2): sc-390549** or **Type I 4-phosphatase (D-10): sc-390550**, our highly recommended monoclonal alternatives to Type I 4-phosphatase (S-21).