

Type I 4-phosphatase (D-10): sc-390550

BACKGROUND

The inositol polyphosphate 4-phosphatases selectively remove the phosphate from the 4-position of various phosphatidylinositols, which generate 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, a and b, 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.
5. Majerus, P.W., et al. 1999. The role of phosphatases in inositol signaling reactions. *J. Biol. Chem.* 274: 10669-10672.

CHROMOSOMAL LOCATION

Genetic locus: INPP4A (human) mapping to 2q11.2; Inpp4a (mouse) mapping to 1 B.

SOURCE

Type I 4-phosphatase (D-10) is a mouse monoclonal antibody raised against amino acids 1-120 mapping at the N-terminus of Type I 4-phosphatase of human origin.

PRODUCT

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

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 for detailed protocols and support products.

APPLICATIONS

Type I 4-phosphatase (D-10) is recommended for detection of Type I 4-phosphatase 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Type I 4-phosphatase (D-10) is also recommended for detection of Type I 4-phosphatase in additional species, including equine and canine.

Suitable for use as control antibody for Type I 4-phosphatase siRNA (h): sc-44177, Type I 4-phosphatase siRNA (m): sc-39089, Type I 4-phosphatase shRNA Plasmid (h): sc-44177-SH, Type I 4-phosphatase shRNA Plasmid (m): sc-39089-SH, Type I 4-phosphatase shRNA (h) Lentiviral Particles: sc-44177-V and Type I 4-phosphatase shRNA (m) Lentiviral Particles: sc-39089-V.

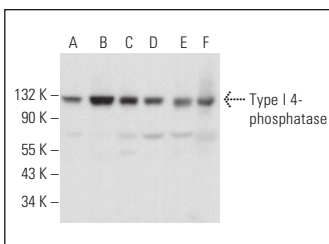
Molecular Weight of Type I 4-phosphatase: 104 kDa.

Positive Controls: MEG-01 cell lysate: sc-2283, Jurkat whole cell lysate: sc-2204 or rat brain extract: sc-2392.

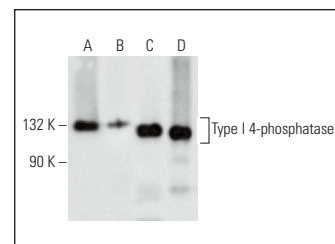
RECOMMENDED SUPPORT REAGENTS

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.

DATA



Type I 4-phosphatase (D-10): sc-390550. Western blot analysis of Type I 4-phosphatase expression in MEG-01 whole cell lysate (A), CCRF-CEM (B), PC-3 (C), NIH/3T3 (D) and C6 (E) whole cell lysates and rat heart tissue extract (F).



Type I 4-phosphatase (D-10): sc-390550. Western blot analysis of Type I 4-phosphatase expression in MEG-01 whole cell lysate (A), human platelet extract (B) and Jurkat whole cell lysate (C) and rat brain tissue extract (D).

RESEARCH USE

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