

Type I 4-phosphatase (E-2): sc-390549

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 (E-2) 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 IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Type I 4-phosphatase (E-2) is available conjugated to agarose (sc-390549 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390549 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390549 PE), fluorescein (sc-390549 FITC), Alexa Fluor[®] 488 (sc-390549 AF488), Alexa Fluor[®] 546 (sc-390549 AF546), Alexa Fluor[®] 594 (sc-390549 AF594) or Alexa Fluor[®] 647 (sc-390549 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-390549 AF680) or Alexa Fluor[®] 790 (sc-390549 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor[®] is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

Type I 4-phosphatase (E-2) 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 (E-2) 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.

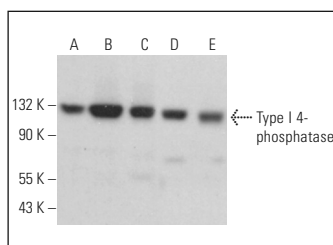
Molecular Weight of Type I 4-phosphatase: 104 kDa.

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

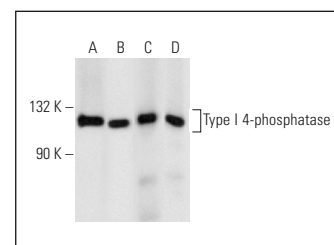
RECOMMENDED SUPPORT REAGENTS

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 (E-2): sc-390549. Western blot analysis of Type I 4-phosphatase expression in MEG-01 (A), CCRF-CEM (B), PC-3 (C), NIH/3T3 (D) and C6 (E) whole cell lysates.



Type I 4-phosphatase (E-2): sc-390549. Western blot analysis of Type I 4-phosphatase expression in MEG-01 (A) and Jurkat (B) whole cell lysates and human hippocampus (C) and rat brain (D) tissue extracts.

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.