

p-CPI-17 (Ser 12): sc-17559

BACKGROUND

A phosphorylation-dependent inhibitory protein for smooth muscle myosin phosphate, CPI-17 was originally identified as a PKC-potentiated inhibitory protein of protein phosphatase-1, which is dominantly expressed in smooth muscle. Phosphorylation at Threonine 38, *in vitro*, by PKC or Rho-kinase enhances the inhibitory potency toward myosin phosphatase. CPI-17 is also phosphorylated at Threonine 38 by protein kinase N and might be involved in the calcium sensitization of smooth muscle contraction as a downstream effector of Rho and/or arachidonic acid. CPI-17 is dually phosphorylated at Serine 12 and Threonine 38 by a MYPT-associated kinase, M110 kinase.

REFERENCES

1. Senba, S., et al. 1999. Identification of trimeric Myosin phosphatase (PP1M) as a target for a novel PKC-potentiated protein phosphatase-1 inhibitory protein (CPI17) in porcine aorta smooth muscle. *J. Biochem.* 125: 354-362.
2. Eto, M., et al. 2000. Inhibition of Myosin/Moesin phosphatase by expression of the phosphoinhibitor protein CPI-17 alters microfilament organization and retards cell spreading. *Cell Motil. Cytoskeleton* 46: 222-234.
3. Hamaguchi, T., et al. 2000. Phosphorylation of CPI-17, an inhibitor of Myosin phosphatase, by protein kinase N. *Biochem. Biophys. Res. Commun.* 274: 825-830.
4. Kitazawa, T., et al. 2000. Agonists trigger G protein-mediated activation of the CPI-17 inhibitor phosphoprotein of Myosin light chain phosphatase to enhance vascular smooth muscle contractility. *J. Biol. Chem.* 275: 9897-9900.
5. Koyama, M., et al. 2000. Phosphorylation of CPI-17, an inhibitory phosphoprotein of smooth muscle Myosin phosphatase, by Rho-kinase. *FEBS Lett.* 475: 197-200.
6. MacDonald, J.A., et al. 2001. Dual Ser and Thr phosphorylation of CPI-17, an inhibitor of Myosin phosphatase, by MYPT-associated kinase. *FEBS Lett.* 493: 91-94.

CHROMOSOMAL LOCATION

Genetic locus: Ppp1r14a (mouse) mapping to 7 B1.

SOURCE

p-CPI-17 (Ser 12) is available as either goat (sc-17559) or rabbit (sc-17559-R) polyclonal affinity purified antibody raised against a short amino acid sequence containing Ser 12 phosphorylated CPI-17 of mouse 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-17559 P, (100 µg 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

p-CPI-17 (Ser 12) is recommended for detection of Ser 12 phosphorylated CPI-17 of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

p-CPI-17 (Ser 12) is also recommended for detection of correspondingly phosphorylated CPI-17 in additional species, including bovine and porcine.

Suitable for use as control antibody for CPI-17 siRNA (m): sc-40424, CPI-17 siRNA (r): sc-108091, CPI-17 shRNA Plasmid (m): sc-40424-SH, CPI-17 shRNA Plasmid (r): sc-108091-SH, CPI-17 shRNA (m) Lentiviral Particles: sc-40424-V and CPI-17 shRNA (r) Lentiviral Particles: sc-108091-V.

Molecular Weight of CPI-17: 17 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: for goat primary antibody (sc-17559): 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), for rabbit primary antibody (sc-17559-R): use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent) and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: for goat primary antibody (sc-17559): 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, for rabbit primary antibody (sc-17559-R): use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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 or our catalog for detailed protocols and support products.