SANTA CRUZ BIOTECHNOLOGY, INC.

p-CPI-17 (Thr 38): sc-17560

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 Threonin 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.

CHROMOSOMAL LOCATION

Genetic locus: PPP1R14A (human) mapping to 19q13.2; Ppp1r14a (mouse) mapping to 7 B1.

SOURCE

p-CPI-17 (Thr 38) is available as either goat (sc-17560) or rabbit (sc-17560-R) affinity purified polyclonal antibody raised against a short amino acid sequence containing Thr 38 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-17560 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-CPI-17 (Thr 38) is recommended for detection of Thr 38 phosphorylated CPI-17 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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), immunohistochemistry (including paraffin-embedded sections) (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 (Thr 38) 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 (h): sc-40423, CPI-17 siRNA (m): sc-40424, CPI-17 shRNA Plasmid (h): sc-40423-SH, CPI-17 shRNA Plasmid (m): sc-40424-SH, CPI-17 shRNA (h) Lentiviral Particles: sc-40423-V and CPI-17 shRNA (m) Lentiviral Particles: sc-40424-V.

Molecular Weight of p-CPI-17: 17 kDa.

STORAGE

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

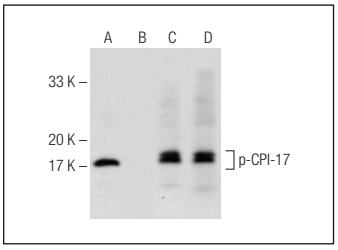
PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

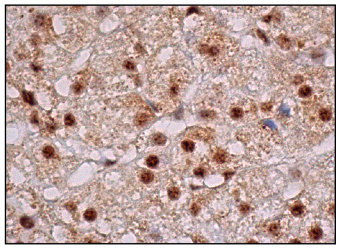
RESEARCH USE

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

DATA



Western blot analysis of CPI-17 phosphorylation in untreated (**A**,**C**) and lambda protein phosphatase (sc-200312A) treated (**B**,**D**) human platelet extracts. Antibodies tested include p-CPI-17 (Thr 38)-R: sc-17560-R (**A**,**B**) and CPI-17 (F-4): sc-48406 (**C**,**D**).



p-CPI-17 (Thr 38)-R: sc-17560-R. Immunoperoxidase staining of formalin fixed, paraffin-embedded human adrenal gland tissue showing nuclear and cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Ohama, T., et al. 2003. Chronic treatment with Interleukin-1β attenuates contractions by decreasing the activities of CPI-17 and MYPT1 in intestinal smooth muscle. J. Biol. Chem. 278: 48794-48804.
2. Huang, J., et al. 2006. G_i-coupled receptors mediate phosphorylation of CPI-17 and MLC20 via preferential activation of the PI3K/ILK pathway. Biochem. J. 396: 193-200.
3. Srinivas, S.P., et al. 2006. Histamine-induced phosphorylation of the regulatory light chain of myosin II disrupts the barrier integrity of corneal endothelial cells. Invest. Ophthalmol. Vis. Sci. 47: 4011-4018.
4. Sakai, H., et al. 2006. Augmentation of endothelin-1-induced phosphorylation of CPI-17 and myosin light chain in bronchial smooth muscle from airway hyperresponsive rats. Biol. Pharm. Bull. 29: 1897-1899.
5. Murthy, K.S. 2008. Contractile agonists attenuate cGMP levels by stimulating phosphorylation of cGMP-specific PDE5; an effect mediated by RhoA/PKC-dependent inhibition of protein phosphatase 1. Br. J. Pharmacol. 153: 1214-1224.
6. Wang, T., et al. 2009. Carbachol-induced rabbit bladder smooth muscle contraction: roles of protein kinase C and Rho kinase. Am. J. Physiol. Renal Physiol. 297: F1534-F1542.
7. Chang, S., et al. 2009. Alteration of the PKC-mediated signaling pathway for smooth muscle contraction in obstruction-induced hypertrophy of the urinary bladder. Lab. Invest. 89: 823-832.
8. Mori, D., et al. 2011. Synchronous phosphorylation of CPI-17 and MYPT1 is essential for inducing Ca^{2+} sensitization in intestinal smooth muscle. Neurogastroenterol. Motil. 23: 1111-1122.
9. Kikkawa, Y., et al. 2012. Mechanisms underlying potentiation of endothelin-1-induced myofilament Ca^{2+} sensitization after subarachnoid hemorrhage. J. Cereb. Blood Flow Metab. 32: 341-352.