

CPI-17 (A-7): sc-28378



The Power to Question

BACKGROUND

CPI-17 is 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 (CPI-17) 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.

CHROMOSOMAL LOCATION

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

SOURCE

CPI-17 (A-7) is a mouse monoclonal antibody raised against amino acids 88-147 of CPI-17 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.

APPLICATIONS

CPI-17 (A-7) is recommended for detection of CPI-17 of mouse, rat, human and porcine 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).

Suitable for use as control antibody for CPI-17 siRNA (h): sc-40423, CPI-17 siRNA (m): sc-40424, CPI-17 siRNA (r): sc-108091, CPI-17 shRNA Plasmid (h): sc-40423-SH, CPI-17 shRNA Plasmid (m): sc-40424-SH, CPI-17 shRNA Plasmid (r): sc-108091-SH, CPI-17 shRNA (h) Lentiviral Particles: sc-40423-V, CPI-17 shRNA (m) Lentiviral Particles: sc-40424-V and CPI-17 shRNA (r) Lentiviral Particles: sc-108091-V.

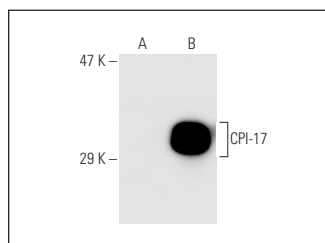
Molecular Weight of CPI-17: 17 kDa.

Positive Controls: CPI-17 (h): 293T Lysate: sc-175952, CPI-17 (m): 293T Lysate: sc-126662 or A549 cell lysate: sc-2413.

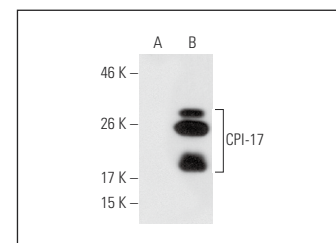
RECOMMENDED SUPPORT REAGENTS

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



CPI-17 (A-7): sc-28378. Western blot analysis of CPI-17 expression in non-transfected: sc-117752 (A) and mouse CPI-17 transfected: sc-126662 (B) 293T whole cell lysates.



CPI-17 (A-7): sc-28378. Western blot analysis of CPI-17 expression in non-transfected: sc-117752 (A) and human CPI-17 transfected: sc-175952 (B) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Touw, K., et al. 2012. Altered calcium signaling in colonic smooth muscle of type 1 diabetic mice. *Am. J. Physiol. Gastrointest. Liver Physiol.* 302: G66-G76.
2. Kikkawa, Y., et al. 2012. Mechanisms underlying potentiation of endothelin-1-induced myofilament Ca²⁺ sensitization after subarachnoid hemorrhage. *J. Cereb. Blood Flow Metab.* 32: 341-352.

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.

PROTOCOLS

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