

p-MARCKS (Ser 170): sc-293104

BACKGROUND

Myristoylated alanine-rich C-kinase substrate (MARCKS) is a major *in vivo* substrate of protein kinase C (PKC) and for the lipid-activated PKC-related kinase (PRK1). Furthermore, PRK1 and PKC phosphorylate MARCKS on the same sites *in vitro*, Serine 152, 156 and 163. MARCKS serves as an *in vitro* substrate for PKC μ as well. However, in contrast to other PKCs, MARCKS is phosphorylated by PKC μ only at Serine 156 and not at Serines 152 and 163, implicating a differential regulation by PKC μ . Therefore, control of MARCKS phosphorylation on these previously identified PKC sites may be regulated under certain circumstances by PRK as well as PKC mediated signalling pathways. MARCKS associates with the plasma membrane in response to PKC-catalyzed phosphorylation of MARCKS. It has been suggested that MARCKS is capable of associating with the plasma membrane through binding to phospholipids without interaction with membranous proteins.

REFERENCES

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2. Verghese, G.M., Johnson, J.D., Vasulka, C., Haupt, D.M., Stumpo, D.J. and Blackshear, P.J. 1994. Protein kinase C-mediated phosphorylation and calmodulin binding of recombinant myristoylated alanine-rich C kinase substrate (MARCKS) and MARCKS-related protein. *J. Biol. Chem.* 269: 9361-9367.
3. Nakaoka, T., Kojima, N., Ogita, T. and Tsuji, S. 1995. Characterization of the phosphatidylserine-binding region of rat MARCKS (myristoylated, alanine-rich protein kinase C substrate). Its regulation through phosphorylation of Serine 152. *J. Biol. Chem.* 270: 12147-12151.
4. Palmer, R.H., Schonwasser, D.C., Rahman, D., Pappin, D.J., Herget, T. and Parker, P.J. 1996. PRK1 phosphorylates MARCKS at the PKC sites: Serine 152, Serine 156 and Serine 163. *FEBS Lett.* 378: 281-285.
5. Dieterich, S., Herget, T., Link, G., Bottinger, H., Pfizenmaier, K. and Johannes, F.J. 1996. *In vitro* activation and substrates of recombinant, baculovirus expressed human protein kinase C μ . *FEBS Lett.* 381: 183-187.

CHROMOSOMAL LOCATION

Genetic locus: MARCKS (human) mapping to 6q21.

SOURCE

p-MARCKS (Ser 170) is a rabbit polyclonal antibody raised against a short amino acid sequence containing phosphorylated Ser 170 of MARCKS of human origin.

PRODUCT

Each vial contains 100 μ g IgG in 1.0 ml 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.

APPLICATIONS

p-MARCKS (Ser 170) is recommended for detection of Ser 170 phosphorylated MARCKS of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for MARCKS siRNA (h): sc-35857, MARCKS shRNA Plasmid (h): sc-35857-SH and MARCKS shRNA (h) Lentiviral Particles: sc-35857-V.

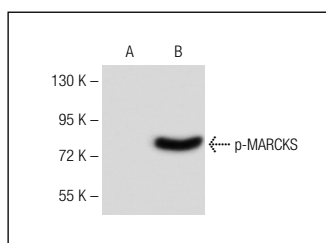
Molecular Weight of p-MARCKS: 80 kDa.

Positive Controls: MCF7 whole cell lysate: sc-2206 or human lung carcinoma tissue.

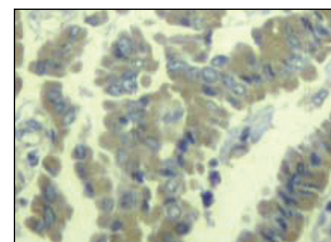
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: 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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: 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. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



p-MARCKS (Ser 170): sc-293104. Western blot analysis of MARCKS phosphorylation expression in untreated (A) and EGF treated (B) MCF7 whole cell lysates.



p-MARCKS (Ser 170): sc-293104. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human lung carcinoma tissue showing cytoplasmic localization.

RESEARCH USE

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

PROTOCOLS

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