SANTA CRUZ BIOTECHNOLOGY, INC.

p-MARCKS (Ser 159/163): sc-12971

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Myristolated 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 signaling 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.

CHROMOSOMAL LOCATION

Genetic locus: MARCKS (human) mapping to 6q21; Marcks (mouse) mapping to 10 B1.

SOURCE

p-MARCKS (Ser 159/163) is available as either goat (sc-12971) or rabbit (sc-12971-R) polyclonal antibody raised against a short amino acid sequence containing dually Ser 159 and Ser 163 phosphorylated MARCKS of human 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-12971 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-MARCKS (Ser 159/163) is recommended for detection of Ser 159 and Ser 163 phosphorylated MARCKS 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

p-MARCKS (Ser 159/163) is also recommended for detection of correspondingly phosphorylated MARCKS in additional species, including canine, bovine, porcine and avian.

Suitable for use as control antibody for MARCKS siRNA (h): sc-35857, MARCKS siRNA (m): sc-35858, MARCKS shRNA Plasmid (h): sc-35857-SH, MARCKS shRNA Plasmid (m): sc-35858-SH, MARCKS shRNA (h) Lentiviral Particles: sc-35857-V and MARCKS shRNA (m) Lentiviral Particles: sc-35858-V.

Molecular Weight of p-MARCKS: 80 kDa.

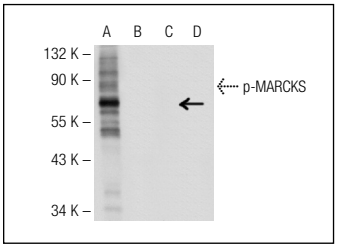
RESEARCH USE

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

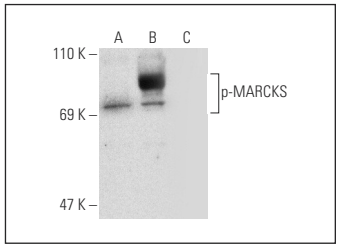
STORAGE

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

DATA



Western blot analysis of MARCKS phosphorylation in untreated (**A**,**C**) and lambda protein phosphatase (sc-200312A) treated (**B**,**D**) NIH/3T3 whole cell lysates. Antibodies tested include p-MARCKS (Ser 159/163)-R: sc-12971-R (**A**,**B**) and MARCKS (JK-8): sc-100777 (**C**,**D**).



p-MARCKS (Ser 159/163)-R: sc-12971-R. Western blot analysis of MARCKS phosphorylation in untreated (**A**), serum-starved, PMA-treated (**B**), and serum-starved, PMA and lambda protein phosphatase (sc-200312A) treated (**C**) HeLa whole cell lysates.

SELECT PRODUCT CITATIONS

1. Zhang, G.R., et al. 2005. Genetic enhancement of visual learning by activation of protein kinase C pathways in small groups of rat cortical neurons. J. Neurosci. 25: 8468-8481.
2. Ehre, C., et al. 2005. Barrier role of Actin filaments in regulated mucin secretion from airway goblet cells. Am. J. Physiol., Cell Physiol. 288: C46-C56.
3. Eliyahu, E., et al. 2006. Association between myristoylated alanin-rich C kinase substrate (MARCKS) translocation and cortical granule exocytosis in rat eggs. Reproduction 131: 221-231.
4. Yogev, O., et al. 2006. Induction of transcriptionally active Jun proteins regulates drug-induced senescence. J. Biol. Chem. 281: 34475-34483.
5. Botto, L., et al. 2007. Changes in the composition of detergent-resistant membrane domains of cultured neurons following protein kinase C activation. J. Neurosci. Res. 85: 443-450.
6. Rombouts, K., et al. 2008. MARCKS is a downstream effector in platelet-derived growth factor-induced cell motility in activated human hepatic stellate cells. Exp. Cell Res. 314: 1444-1454.
7. Theis, T., et al. 2013. Functional role of the interaction between polysialic acid and myristoylated alanine-rich C kinase substrate at the plasma membrane. J. Biol. Chem. 288: 6726-6742.

PROTOCOLS

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