

MARK4 (H-125): sc-98357

BACKGROUND

The phosphorylation and dephosphorylation of proteins on serine and threonine residues is an essential means of regulating a broad range of cellular functions in eukaryotes, including cell division, homeostasis and apoptosis. The serine/threonine (Ser/Thr) protein kinases are a group of proteins that are intimately involved in this process. MARK4 (MAP/microtubule affinity-regulating kinase 4), also known as MARKL1 or KIAA1860, is a 752 amino acid protein that contains one UBA domain, one protein kinase domain and one kinase-associated domain and belongs to the Ser/Thr protein kinase family. Expressed ubiquitously as two alternatively spliced isoforms, one of which is brain-specific, MARK4 uses ATP to catalyze the phosphorylation of target proteins and is thought to be involved in cell growth. MARK4 is up-regulated in hepatocellular carcinoma cells, suggesting a role for MARK4 in tumorigenesis.

REFERENCES

1. Drewes, G., et al. 1997. MARK, a novel family of protein kinases that phosphorylate microtubule-associated proteins and trigger microtubule disruption. *Cell* 89: 297-308.
2. Nagase, T., et al. 2001. Prediction of the coding sequences of unidentified human genes. XX. The complete sequences of 100 new cDNA clones from brain which code for large proteins *in vitro*. *DNA Res.* 8: 85-95.
3. Kato, T., et al. 2001. Isolation of a novel human gene, MARKL1, homologous to MARK3 and its involvement in hepatocellular carcinogenesis. *Neoplasia* 3: 4-9.
4. Beghini, A., et al. 2003. The neural progenitor-restricted isoform of the MARK4 gene in 19q13.2 is upregulated in human gliomas and overexpressed in a subset of glioblastoma cell lines. *Oncogene* 22: 2581-2591.
5. Trinczek, B., et al. 2004. MARK4 is a novel microtubule-associated proteins/microtubule affinity-regulating kinase that binds to the cellular microtubule network and to centrosomes. *J. Biol. Chem.* 279: 5915-5923.
6. Schneider, A., et al. 2004. Identification of regulated genes during permanent focal cerebral ischaemia: characterization of the protein kinase 9b5/MARKL1/MARK4. *J. Neurochem.* 88: 1114-1126.
7. Moroni, R.F., et al. 2006. Distinct expression pattern of microtubule-associated protein/microtubule affinity-regulating kinase 4 in differentiated neurons. *Neuroscience* 143: 83-94.

CHROMOSOMAL LOCATION

Genetic locus: MARK4 (human) mapping to 19q13.32; Mark4 (mouse) mapping to 7 A3.

SOURCE

MARK4 (H-125) is a rabbit polyclonal antibody raised against amino acids 628-752 mapping at the C-terminus of MARK4 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.

APPLICATIONS

MARK4 (H-125) is recommended for detection of MARK4 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).

MARK4 (H-125) is also recommended for detection of MARK4 in additional species, including canine.

Suitable for use as control antibody for MARK4 siRNA (h): sc-97671, MARK4 siRNA (m): sc-149275, MARK4 shRNA Plasmid (h): sc-97671-SH, MARK4 shRNA Plasmid (m): sc-149275-SH, MARK4 shRNA (h) Lentiviral Particles: sc-97671-V and MARK4 shRNA (m) Lentiviral Particles: sc-149275-V.

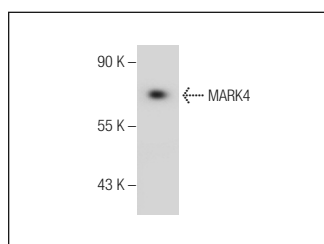
Molecular Weight of MARK4: 83 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204.

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 A Blocking Reagent: sc-2333 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.

DATA



MARK4 (H-125): sc-98357. Western blot analysis of MARK4 expression in Jurkat whole cell lysate.

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.