

# MARK4 (S-12): sc-131185

## 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

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- 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.
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- 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.
- 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.
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## CHROMOSOMAL LOCATION

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

## SOURCE

MARK4 (S-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region 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.

Blocking peptide available for competition studies, sc-131185 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

MARK4 (S-12) is recommended for detection of MARK4 isoforms 1 and 2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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); non cross-reactive with MARK1 or MARK2.

MARK4 (S-12) is also recommended for detection of MARK4 in additional species, including equine and 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.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.