

MARK3 (G-11): sc-365461

BACKGROUND

MARK3 (MAP/microtubule affinity-regulating kinase 3), also known as C-TAK1 (Cdc25C-associated protein kinase 1), EMK-2 (ELKL motif kinase 2), protein kinase STK10 or serine/threonine-protein kinase p78, is a 753 amino acid peripheral membrane protein that phosphorylates Cdc25C on Serine 216 and is ubiquitously expressed in various human tissue and cell lines. Existing as six alternatively spliced isoforms, MARK3 belongs to the Ser/Thr protein kinase family and the protein kinase superfamily. MARK3 has been suggested to mediate the binding of the 14-3-3 proteins through its kinase activity and acts as a negative regulator of mitosis. The gene encoding MARK3 maps to human chromosome 14q32.32 and mouse chromosome 12 F1.

REFERENCES

1. Ono, T., et al. 1997. Assignment of MARK3 alias KP78 to human chromosome band 14q32.3 by *in situ* hybridization. *Cytogenet. Cell Genet.* 79: 101-102.
2. Peng, C.Y., et al. 1998. C-TAK1 protein kinase phosphorylates human Cdc25C on serine 216 and promotes 14-3-3 protein binding. *Cell Growth Differ.* 9: 197-208.
3. Müller, J., et al. 2001. C-TAK1 regulates Ras signaling by phosphorylating the MAPK scaffold, KSR1. *Mol. Cell* 8: 983-993.
4. Sun, T.Q., et al. 2001. PAR-1 is a Dishevelled-associated kinase and a positive regulator of Wnt signalling. *Nat. Cell Biol.* 3: 628-636.
5. Hurov, J.B., et al. 2004. Atypical PKC phosphorylates PAR-1 kinases to regulate localization and activity. *Curr. Biol.* 14: 736-741.
6. Lizcano, J.M., et al. 2004. LKB1 is a master kinase that activates 13 kinases of the AMPK subfamily, including MARK/PAR-1. *EMBO J.* 23: 833-843.
7. Dequiedt, F., et al. 2006. New role for hPar-1 kinases EMK and C-TAK1 in regulating localization and activity of class IIa histone deacetylases. *Mol. Cell. Biol.* 26: 7086-7102.
8. Moravcevic, K., et al. 2010. Kinase associated-1 domains drive MARK/PAR1 kinases to membrane targets by binding acidic phospholipids. *Cell* 143: 966-977.

CHROMOSOMAL LOCATION

Genetic locus: MARK3 (human) mapping to 14q32.32; Mark3 (mouse) mapping to 12 F1.

SOURCE

MARK3 (G-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 12-39 near the N-terminus of MARK3 of human origin.

PRODUCT

Each vial contains 200 µg IgG₃ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-365461 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

MARK3 (G-11) is recommended for detection of MARK3 of mouse, rat and human 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); non cross-reactive with Emk.

MARK3 (G-11) is also recommended for detection of MARK3 in additional species, including canine.

Suitable for use as control antibody for MARK3 siRNA (h): sc-43649, MARK3 siRNA (m): sc-60087, MARK3 shRNA Plasmid (h): sc-43649-SH, MARK3 shRNA Plasmid (m): sc-60087-SH, MARK3 shRNA (h) Lentiviral Particles: sc-43649-V and MARK3 shRNA (m) Lentiviral Particles: sc-60087-V.

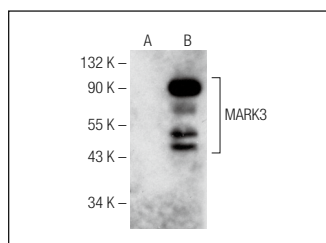
Molecular Weight of MARK3: 87 kDa.

Positive Controls: MARK3 (h): 293T Lysate: sc-114018.

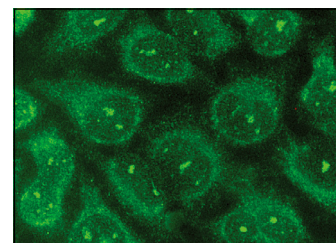
RECOMMENDED SUPPORT REAGENTS

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



MARK3 (G-11): sc-365461. Western blot analysis of MARK3 expression in non-transfected: sc-117752 (A) and human MARK3 transfected: sc-114018 (B) 293T whole cell lysates.



MARK3 (G-11): sc-365461. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

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.