

MARK3 (h2): 293T Lysate: sc-176606

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.
9. Lennerz, J.K., et al. 2010. Loss of Par-1a/MARK3/C-TAK1 kinase leads to reduced adiposity, resistance to hepatic steatosis, and defective gluconeogenesis. *Mol. Cell. Biol.* 30: 5043-5056.

CHROMOSOMAL LOCATION

Genetic locus: MARK3 (human) mapping to 14q32.32.

PRODUCT

MARK3 (h2): 293T Lysate represents a lysate of human MARK3 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

APPLICATIONS

MARK3 (h2): 293T Lysate is suitable as a Western Blotting positive control for human reactive MARK3 antibodies. Recommended use: 10-20 µl per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

RESEARCH USE

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

PROTOCOLS

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