



MST-4 (m): 293 Lysate: sc-110717

BACKGROUND

Sterile-20 (Ste20) is a serine/threonine kinase in *Saccharomyces cerevisiae* that is involved in relaying signals from G protein-coupled receptors to cytosolic MAP kinase cascades. Mammalian protein kinases that display sequence similarity to Ste20 are divided into two groups, the PAK subfamily and the GCK subfamily. The PAK subfamily members contain a C-terminal catalytic domain and an N-terminal regulatory domain with a p21Rac/Cdc42-binding site, and these kinases can activate both p38MAPK and JNK. The GCK subfamily members contain a C-terminal regulatory domain and an N-terminal catalytic domain, and they have diverse roles in many pathways, including the activation of ERK-JNK, p38MAPK, and caspase-3. The mammalian Ste20-like kinases (MST kinases, also known as Ksr proteins) are members of the GCK subfamily. Ksr-1 and Ksr-2 (also known as MST-2 and MST-1, respectively) are both direct substrates of caspase-3 that accelerate caspase-3 activation. MST-3 is ubiquitously expressed in mammalian tissue and can phosphorylate exogenous substrates as well as itself. MST-4 is highly expressed in placenta, thymus and peripheral blood leukocytes, and it specifically activates ERK.

REFERENCES

1. Leberer, E., Dignard, D., Hargus, D., Thomas, E.Y. and Whiteway, M. 1992. The protein kinase homologue Ste20p is required to link the yeast pheromone response G protein $\beta\gamma$ subunits to downstream signalling components. *EMBO J.* 11: 4815-4824.
2. Schinkmann, K. and Blenis, J. 1997. Cloning and characterization of a human Ste20-like protein kinase with unusual cofactor requirements. *J. Biol. Chem.* 272: 28695-28703.
3. Raitt, D., Posas, F. and Saito, H. 2000. Yeast Cdc42 GTPase and Ste20 PAK-like kinase regulate Sho1-dependent activation of the Hog1 MAPK pathway. *EMBO J.* 17: 4623-4631.
4. Zhou, T.H., Ling, K., Guo, J., Zhou, H., Wu, Y.L., Jing, Q., Ma, L. and Pei, G. 2000. Identification of a human brain-specific isoform of mammalian Ste20-like kinase 3 that is regulated by cAMP-dependent protein kinase. *J. Biol. Chem.* 275: 2513-2519.
5. Lin, J.L., Chen, H.C., Fang, H.I., Robinson, D., Kung, H.J. and Shih, H.M. 2001. MST-4, a new Ste20-related kinase that mediates cell growth and transformation via modulating ERK pathway. *Oncogene* 20: 6559-6569.
6. Lee, K., Ohya, T., Yajima, N., Tsubuki, S. and Yonehara, S. 2001. MST, a physiological caspase substrate, highly sensitizes apoptosis both upstream and downstream of caspase activation. *J. Biol. Chem.* 276: 19276-19285.

CHROMOSOMAL LOCATION

Genetic locus: 2610018G03Rik (mouse) mapping to X A5.

PRODUCT

MST-4 (m): 293 Lysate represents a lysate of mouse MST-4 transfected 293 cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

RESEARCH USE

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

APPLICATIONS

MST-4 (m): 293 Lysate is suitable as a Western Blotting positive control for mouse reactive MST-4 antibodies. Recommended use: 10-20 μ l per lane.

Control 293 Lysate: sc-110760 is available as a Western Blotting negative control lysate derived from non-transfected 293 cells.

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.

PROTOCOLS

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