SANTA CRUZ BIOTECHNOLOGY, INC.

MST-3 (47): sc-135993

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 $p21^{Rac/Cdc42}$-binding site, and these kinases can activate both p38 MAPK 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, p38 MAPK, 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.

CHROMOSOMAL LOCATION

Genetic locus: STK24 (human) mapping to 13q32.2; Stk24 (mouse) mapping to 14 E5.

SOURCE

MST-3 (47) is a mouse monoclonal antibody raised against amino acids 275-393 of MST-3 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

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.

APPLICATIONS

MST-3 (47) is recommended for detection of MST-3 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for MST-3 siRNA (h): sc-39251, MST-3 siRNA (m): sc-39252, MST-3 shRNA Plasmid (h): sc-39251-SH, MST-3 shRNA Plasmid (m): sc-39252-SH, MST-3 shRNA (h) Lentiviral Particles: sc-39251-V and MST-3 shRNA (m) Lentiviral Particles: sc-39252-V.

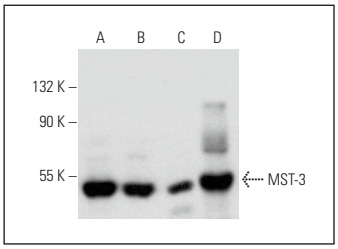
Molecular Weight of MST-3: 50/35 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201, U-87 MG cell lysate: sc-2411 or HeLa whole cell lysate: sc-2200.

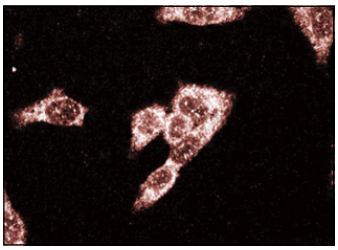
RECOMMENDED SUPPORT PRODUCTS

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



MST-3 (47): sc-135993. Western blot analysis of MST-3 expression in A-431 (**A**), HeLa (**B**) and U-87 MG (**C**) whole cell lysates and mouse spleen tissue extract (**D**).



MST-3 (47): sc-135993. Immunofluorescence staining of HeLa cells showing cytoplasmic staining.

SELECT PRODUCT CITATIONS

1. Tang, J., et al. 2014. Cdk5-dependent MST-3 phosphorylation and activity regulate neuronal migration through RhoA inhibition. J. Neurosci. 34: 7425-7436.
2. Mardakheh, F.K., et al. 2016. Rho binding to FAM65A regulates Golgi reorientation during cell migration. J. Cell Sci. 129: 4466-4479.
3. Meram, A.T., et al. 2018. Hydrogen sulfide is increased in oral squamous cell carcinoma compared to adjacent benign oral mucosae. Anticancer Res. 38: 3843-3852.
4. Chen, J., et al. 2019. The Ataxia telangiectasia-mutated and Rad3-related protein kinase regulates cellular hydrogen sulfide concentrations. DNA Repair 73: 55-63.
5. Panza, E., et al. 2022. Endogenous and exogenous hydrogen sulfide modulates urothelial bladder carcinoma development in human cell lines. Biomed. Pharmacother. 151: 113137.
6. Islam, M.Z., et al. 2022. The ataxia-telangiectasia mutated gene product regulates the cellular acid-labile sulfide fraction. DNA Repair 116: 103344.

PROTOCOLS

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