SANTA CRUZ BIOTECHNOLOGY, INC.

Krs-1 (87.K): sc-130405

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 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 Krs proteins, are members of the GCK subfamily. Krs-1 (MST-2) and Krs-2 (MST-1) 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., et al. 1992. The protein kinase homologue Ste20p is required to link the yeast pheromone response G protein β γ subunits to downstream signalling components. EMBO J. 11: 4815-4824.
2. Schinkmann, K., et al. 1997. Cloning and characterization of a human Ste20-like protein kinase with unusual cofactor requirements. J. Biol. Chem. 272: 28695-28703.
3. Raitt, D., et al. 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., et al. 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., et al. 2001. MST4, a new Ste20-related kinase that mediates cell growth and transformation via modulating ERK pathway. Oncogene 20: 6559-6569.
6. Lee, K., et al. 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: STK3 (human) mapping to 8q22.2; Stk3 (mouse) mapping to 15 B3.1.

SOURCE

Krs-1 (87.K) is a mouse monoclonal antibody raised against amino acids 253-350 representing partial length Krs-1 of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Krs-1 (87.K) is recommended for detection of Krs-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for Krs-1 siRNA (h): sc-39247, Krs-1 siRNA (m): sc-39248, Krs-1 shRNA Plasmid (h): sc-39247-SH, Krs-1 shRNA Plasmid (m): sc-39248-SH, Krs-1 shRNA (h) Lentiviral Particles: sc-39247-V and Krs-1 shRNA (m) Lentiviral Particles: sc-39248-V.

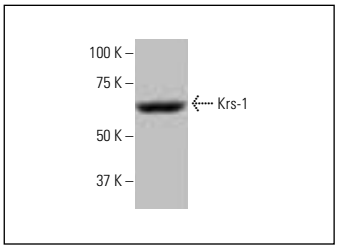
Molecular Weight of Krs-1: 63 kDa.

Positive Controls: RAW 264.7 whole cell lysate: sc-2211, A-431 whole cell lysate: sc-2201 or NIH/3T3 whole cell lysate: sc-2210.

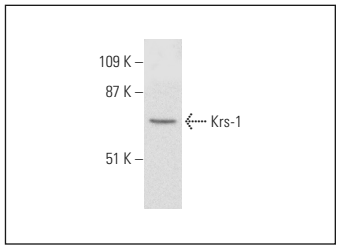
RECOMMENDED SUPPORT REAGENTS

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).

DATA



Krs-1 (87.K): sc-130405. Western blot analysis of Krs-1 expression in RAW 264.7 whole cell lysate.



Krs-1 (87.K): sc-130405. Western blot analysis of Krs-1 expression in NIH/3T3 whole cell lysate.

SELECT PRODUCT CITATIONS

1. O'Driscoll, N.A. and Matallanas, D. 2019. Quantifying the kinase activities of MST1/2. Methods Mol. Biol. 1893: 289-304.
2. Tang, Y., et al. 2019. Architecture, substructures, and dynamic assembly of STRIPAK complexes in Hippo signaling. Cell Discov. 5: 3.
3. Tang, Y., et al. 2020. Selective inhibition of STRN3-containing PP2A phosphatase restores Hippo tumor-suppressor activity in gastric cancer. Cancer Cell. E-published.

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.