SANTA CRUZ BIOTECHNOLOGY, INC.

Krs-2 (RJ-5): sc-100449

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 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 βγ 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. MST-4, a new Ste20-related kinase that mediates cell growth and transformation via modulating ERK pathway. Oncogene 20: 6559-6569.

CHROMOSOMAL LOCATION

Genetic locus: STK4 (human) mapping to 20q13.12; Stk4 (mouse) mapping to 2 H3.

SOURCE

Krs-2 (RJ-5) is a mouse monoclonal antibody raised against recombinant Krs-2 of human origin.

PRODUCT

Each vial contains 100 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.

APPLICATIONS

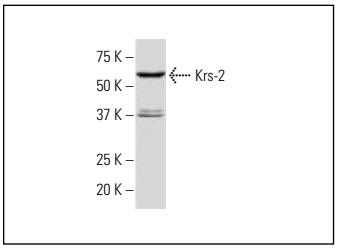
Krs-2 (RJ-5) is recommended for detection of Krs-2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Krs-2 siRNA (h): sc-39249, Krs-2 siRNA (m): sc-39250, Krs-2 shRNA Plasmid (h): sc-39249-SH, Krs-2 shRNA Plasmid (m): sc-39250-SH, Krs-2 shRNA (h) Lentiviral Particles: sc-39249-V and Krs-2 shRNA (m) Lentiviral Particles: sc-39250-V.

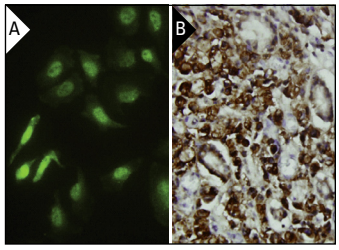
Molecular Weight of Krs-2: 60 kDa.

Positive Controls: HeLa nuclear extract: sc-2120 or Jurkat whole cell lysate: sc-2204.

DATA



Krs-2 (RJ-5): sc-100449. Western blot analysis of Krs-2 expression in HeLa nuclear extract.



Krs-2 (RJ-5): sc-100449. Immunofluorescence staining of paraformaldehyde-fixed HeLa cells showing nuclear and cytoplasmic localization (**A**). Immunoperoxidase staining of formalin-fixed, paraffin-embedded human stomach carcinoma tissue showing nuclear and cytoplasmic localization (**B**).

SELECT PRODUCT CITATIONS

1. Gholinejad, M., et al. 2018. Adenosine decreases oxidative stress and protects H_2O_2-treated neural stem cells against apoptosis through decreasing MST-1 expression. Biomed. Rep. 8: 439-446.
2. Turunen, S.P., et al. 2019. FGFR4 phosphorylates MST-1 to confer breast cancer cells resistance to MST-1/2-dependent apoptosis. Cell Death Differ. 26: 2577-2593.

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.