SANTA CRUZ BIOTECHNOLOGY, INC.

Krs-1/2 (C-19): sc-6211

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 and Krs-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., 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 ahuman 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.

CHROMOSOMAL LOCATION

Genetic locus: STK3 (human) mapping to 8q22.2, STK4 (human) mapping to 20q13.13; Stk3 (mouse) mapping to 15B3.3, Stk4 (mouse) mapping to 2 H3.

SOURCE

Krs-1/2 (C-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of Krs-1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-6211 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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

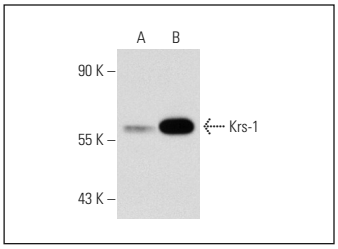
Krs-1/2 (C-19) is recommended for detection of Krs-1 and Krs-2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Krs-1/2 (C-19) is also recommended for detection of Krs-1 and Krs-2 in additional species, including equine, canine, bovine, porcine and avian.

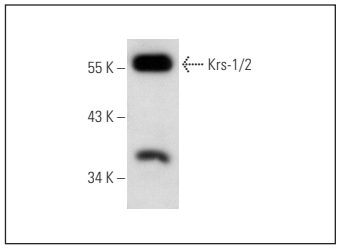
Molecular Weight of Krs-1/2: 63 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201 or Krs-1 (h): 293 Lysate: sc-111111.

DATA



Krs-1/2 (C-19): sc-6211. Western blot analysis of Krs-1 expression in non-transfected: sc-110760 (**A**) and human Krs-1 transfected: sc-111111 (**B**) 293 whole cell lysates.



Krs-1/2 (C-19): sc-6211. Western blot analysis of Krs-1 expression in A-431 whole cell lysate.

SELECT PRODUCT CITATIONS

1. O'Neill, E., et al. 2004. Role of the kinase MST2 in suppression of apoptosis by the proto-oncogene product Raf-1. Science 306: 2267-2270.
2. Rauch, J., et al. 2010. Heterogeneous nuclear ribonucleoprotein H blocks MST2-mediated apoptosis in cancer cells by regulating A-Raf transcription. Cancer Res. 70: 1679-1688.
3. Mardin, B.R., et al. 2010. Components of the Hippo pathway cooperate with Nek2 kinase to regulate centrosome disjunction. Nat. Cell Biol. 12: 1166-1176.
4. Romano, D., et al. 2013. The differential effects of wild-type and mutated K-Ras on MST2 signaling are determined by K-Ras activation kinetics. Mol. Cell. Biol. 33: 1859-1868.

PROTOCOLS

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