

Ksr-2 (K75): sc-100421

BACKGROUND

Kinase suppressor of Ras (Ksr) and MAP kinase kinase kinase (MEKK3) are integral members of the MAP kinase pathway. Ksr is a conserved protein that positively regulates Ras signaling and may function as a scaffold for Raf, MEK and ERK. There are two types of Ksr proteins: Ksr-1 and Ksr-2. These two are individually necessary for a few specific Ras-dependent processes, but they are required together for most aspects of Ras-mediated signaling. Ksr-2 plays a key role in Ras-mediated signaling during germline meiotic progression and functions redundantly with Ksr-1 during the development of the excretory system pathway, hermaphrodite vulva, and male spicules. Ksr-2 also functions as a negative regulator of the MEKK3-mediated activation of the MAP kinase pathways (specifically ERK and JNK) and of the NF κ B pathways, and it simultaneously inhibits MEKK3-mediated I κ B production.

REFERENCES

1. Sundaram, M. and Han, M. 1996. The *C. elegans* Ksr-1 gene encodes a novel Raf-related kinase involved in Ras-mediated signal transduction. *Cell* 83: 889-901.
2. Denouel-Galy, A., et al. 1998. Murine Ksr interacts with MEK and inhibits Ras-induced transformation. *Curr. Biol.* 8: 46-55.
3. Yu, W., et al. 1998. Regulation of the MAP kinase pathway by mammalian Ksr through direct interaction with MEK and ERK. *Curr. Biol.* 8: 56-64.
4. Joneson, T., et al. 1998. Kinase suppressor of Ras inhibits the activation of extracellular ligand-regulated (ERK) mitogen-activated protein (MAP) kinase by growth factors, activated Ras and Ras effectors. *J. Biol. Chem.* 273: 7743-7748.
5. Sugimoto, T., et al. 1998. The kinase suppressor of Ras (Ksr) modulates growth factor and Ras signaling by uncoupling Elk-1 phosphorylation from MAP kinase activation. *EMBO J.* 17: 1717-1727.
6. Stewart, S., et al. 1999. Kinase suppressor of Ras forms a multiprotein signaling complex and modulates MEK localization. *Mol. Cell. Biol.* 19: 5523-5534.

CHROMOSOMAL LOCATION

Genetic locus: KSR2 (human) mapping to 12q24.22; Ksr2 (mouse) mapping to 5 F.

SOURCE

Ksr-2 (K75) is a mouse monoclonal antibody raised against an internal region of Ksr-2 of human origin.

PRODUCT

Each vial contains 100 μ g IgG $_1$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4 $^{\circ}$ C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

Ksr-2 (K75) is recommended for detection of Ksr-2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

Suitable for use as control antibody for Ksr-2 siRNA (h): sc-60901, Ksr-2 siRNA (m): sc-60902, Ksr-2 shRNA Plasmid (h): sc-60901-SH, Ksr-2 shRNA Plasmid (m): sc-60902-SH, Ksr-2 shRNA (h) Lentiviral Particles: sc-60901-V and Ksr-2 shRNA (m) Lentiviral Particles: sc-60902-V.

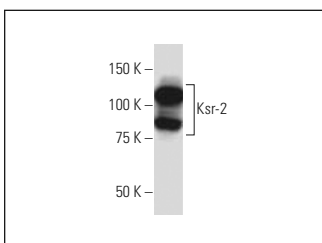
Molecular Weight of Ksr-2: 94 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201.

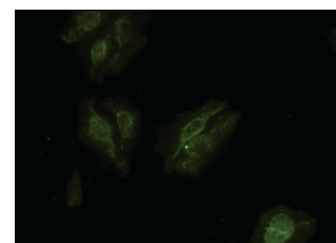
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz MarkerTM 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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



Ksr-2 (K75): sc-100421. Western blot analysis of Ksr-2 expression in A-431 whole cell lysate.



Ksr-2 (K75): sc-100421. Immunofluorescence staining of paraformaldehyde-fixed HeLa cells showing nuclear and cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Fernandez, M.R., et al. 2012. Kinase suppressor of Ras 2 (Ksr-2) regulates tumor cell transformation via AMPK. *Mol. Cell. Biol.* 32: 3718-3731.
2. Rauch, J., et al. 2016. Differential localization of A-Raf regulates MST2-mediated apoptosis during epithelial differentiation. *Cell Death Differ.* 23: 1283-1295.
3. Verlande, A., et al. 2018. Metabolic stress regulates ERK activity by controlling Ksr-RAF heterodimerization. *EMBO Rep.* 19: 320-336.

RESEARCH USE

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