SANTA CRUZ BIOTECHNOLOGY, INC.

Rit2 siRNA (h): sc-62950

BACKGROUND

Ras-like expressed in many tissues (Rit) is a member of a subgroup within the larger Ras superfamily of small guanine triphosphatases (GTP-binding proteins). Rit contains a unique effector domain that is similar to same domain in the closely related RIN and *Drosophila* Ric proteins. Rit is involved in neuronal differentiation, development and regeneration by coupling specific trophic factor signals to sustained activation of the B-Raf/ERK and p38 MAP kinase cascades. Rit also appears to play a critical role in neurotrophin-mediated MAP kinase signaling and has modest transforming ability.

REFERENCES

1. Chang, S. and Raible, D.W. 1994. RIN, a novel cell-surface protein that labels reticular neurons early in chick neurogenesis. J. Neurobiol. 25: 395-405.
2. Lee, C.H., et al. 1996. RIN, a neuron-specific and calmodulin-binding small G-protein, and Rit define a novel subfamily of Ras proteins. J. Neurosci. 16: 6784-6794.
3. Rusyn, E.V., et al. 2000. Rit, a non-lipid-modified Ras-related protein, transforms NIH3T3 cells activating the ERK, JNK, p38 MAPK or PI3K/Akt pathways. Oncogene 19: 4685-4694.
4. Hoshino, M. and Nakamura, S. 2002. The Ras-like small GTP-binding protein RIN is activated by growth factor stimulation. Biochem. Biophys. Res. Commun. 295: 651-656.
5. Hynds, D.L., et al. 2003. Rit promotes MEK-independent neurite branching in human neuroblastoma cells. J. Cell Sci. 116: 1925-1935.
6. Shi, G.X. and Andres, D.A. 2005. Rit contributes to nerve growth factor-induced neuronal differentiation via activation of B-Raf-extracellular signal-regulated kinase and p38 mitogen-activated protein kinase cascades. Mol. Cell. Biol. 25: 830-846.
7. Bliss, J.M., et al. 2006. The RIN family of Ras effectors. Meth. Enzymol 407: 335-344.

CHROMOSOMAL LOCATION

Genetic locus: RIT2 (human) mapping to 18q12.3.

PRODUCT

Rit2 siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Rit2 shRNA Plasmid (h): sc-62950-SH and Rit2 shRNA (h) Lentiviral Particles: sc-62950-V as alternate gene silencing products.

For independent verification of Rit2 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-62950A, sc-62950B and sc-62950C.

PROTOCOLS

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

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCL, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Rit2 siRNA (h) is recommended for the inhibition of Rit2 expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

Rit2 (27G2): sc-58474 is recommended as a control antibody for monitoring of Rit2 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Rit2 gene expression knockdown using RT-PCR Primer: Rit2 (h)-PR: sc-62950-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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