SANTA CRUZ BIOTECHNOLOGY, INC.

Ral BP-1 siRNA (h): sc-36376

BACKGROUND

Ral A and Ral B constitute a distinct subfamily of Ras-related GTPases (i.e., GDP/GTP binding proteins). Ral proteins are activated by a unique nucleotide exchange factor, Ral GDS, and deactivated by a distinct GTPase-activating protein. Unlike Ras proteins, Ral A and Ral B fail to induce transformed foci when activated variants are expressed in various recipient cells. A potential downstream target of Ral, designated Ral BP-1, has been shown to contain a Rho-GTPase-activating domain. This Rho-GTPase-activating domain interacts preferentially with the Rho family member Cdc42. A Ras/Ral signaling pathway has been reported to mediate phospholipase D (PLD) activation by v-Src, thus indicating PLD as another downstream target of Ral A.

REFERENCES

1. Wildey, G.M., et al. 1993. Isolation of cDNA clones and tissue expression of rat Ral A and Ral B GTP-binding proteins. Biochem. Biophys. Res. Commun. 194: 552-559.
2. Hofer, F., et al. 1994. Activated Ras interacts with the Ral guanine nucleotide dissociation stimulator. Proc. Natl. Acad. Sci. USA 91: 11089-11093.
3. Spaargaren, M., et al. 1994. Identification of the guanine nucleotide dissociation stimulator for Ral as a putative effector molecule of R-Ras, H-Ras, K-Ras, and Rap. Proc. Natl. Acad. Sci. USA 91: 12609-12613.
4. Cantor, S.B., et al. 1995. Identification and characterization of Ral-binding protein 1, a potential downstream target of Ral GTPases. Mol. Cell. Biol. 15: 4578-4584.
5. Jullien-Flores, V., et al. 1995. Bridging Ral GTPase to Rho pathways. RLIP76, a Ral effector with Cdc42/Rac GTPase-activating protein activity. J. Biol. Chem. 270: 22473-22477.
6. Jiang, H., et al. 1995. Involvement of Ral GTPase in v-Src-induced phospholipase D activation. Nature 378: 409-412.
7. Yadav, S., et al. 2004. Identification of membrane-anchoring domains of RLIP76 using deletion mutant analyses. Biochemistry 43: 16243-16253.

CHROMOSOMAL LOCATION

Genetic locus: RALBP1 (human) mapping to 18p11.22.

PRODUCT

Ral BP-1 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 Ral BP-1 shRNA Plasmid (h): sc-36376-SH and Ral BP-1 shRNA (h) Lentiviral Particles: sc-36376-V as alternate gene silencing products.

For independent verification of Ral BP-1 (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-36376A, sc-36376B and sc-36376C.

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

Ral BP-1 siRNA (h) is recommended for the inhibition of Ral BP-1 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

Ral BP-1 (H-10): sc-48337 is recommended as a control antibody for monitoring of Ral BP-1 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 Ral BP-1 gene expression knockdown using RT-PCR Primer: Ral BP-1 (h)-PR: sc-36376-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Wang, Q., et al. 2020. Increased RLIP76 expression in IDH1 wild-type glioblastoma multiforme is associated with worse prognosis. Oncol. Rep. 43: 188-200.

RESEARCH USE

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