SANTA CRUZ BIOTECHNOLOGY, INC.

Rab GDI β siRNA (h): sc-106475

BACKGROUND

Rab proteins, a family of Ras-related small GTP-binding proteins, play a key role in regulating intracellular vesicle trafficking. Rab GDP dissociation inhibitor (Rab GDI or GDI2) forms a soluble complex with Rab proteins and thereby prevents the exchange of GDP for GTP. In mammals, there exist two major isoforms, Rab GDI α, also known as XAP-4, and Rab GDI β. While the mammalian Rab GDI β-genes are ubiquitously expressed, the Rab GDI α genes are predominantly brain-specific. Since it is expressed predominantly in neural and sensory tissues, Rab GDI α may serve a specific function in neural signal transmission. The gene sequences for the Rab GDI proteins are extremely conserved in evolution, with substantial homology preserved across three eukaryotic kingdoms.

REFERENCES

1. Nishimura, N., et al. 1994. Molecular cloning and characterization of two rab GDI species from rat brain: brain-specific and ubiquitous types. J. Biol. Chem. 269: 14191-14198.
2. Shisheva, A., et al. 1994. Differential intracellular localizations of GDP dissociation inhibitor isoforms. Insulin-dependent redistribution of GDP dissociation inhibitor-2 in 3T3-L1 adipocytes. J. Biol. Chem. 269: 23865-23868.
3. Nishimura, N., et al. 1995. Cloning of a brain-type isoform of human Rab GDI and its expression in human neuroblastoma cell lines and tumor specimens. Cancer Res. 55: 5445-5450.
4. Araki, K., et al. 1995. Purification and characterization of Rab GDI β from rat brain. Biochem. Biophys. Res. Commun. 211: 296-305.
4. Bachner, D., et al. 1995. Expression patterns of two human genes coding for different rab GDP-dissociation inhibitors (GDIs), extremely conserved proteins involved in cellular transport. Hum. Mol. Genet. 4: 701-708.
5. Sedlacek, Z., et al. 1998. The human rab GDI β gene with long retroposon-rich introns maps to 10p15 and its pseudogene to 7p11-p13. Mamm. Genome 9: 78-80.
6. Sedlacek, Z., et al. 1999. The amphioxus rab GDP-dissociation inhibitor (GDI) gene is neural-specific: implications for the evolution of chordate Rab GDI genes. Mol. Biol. Evol. 16: 1231-1237.

CHROMOSOMAL LOCATION

Genetic locus: GDI2 (human) mapping to 10p15.1.

PRODUCT

Rab GDI β 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 Rab GDI β shRNA Plasmid (h): sc-106475-SH and Rab GDI β shRNA (h) Lentiviral Particles: sc-106475-V as alternate gene silencing products.

For independent verification of Rab GDI β (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-106475A, sc-106475B and sc-106475C.

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

Rab GDI β siRNA (h) is recommended for the inhibition of Rab GDI β 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

Rab GDI β (D-2): sc-515143 is recommended as a control antibody for monitoring of Rab GDI β 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).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Rab GDI β gene expression knockdown using RT-PCR Primer: Rab GDI β (h)-PR: sc-106475-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.

PROTOCOLS

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