SANTA CRUZ BIOTECHNOLOGY, INC.

Dexras2 siRNA (h): sc-105290

BACKGROUND

Dexras1 (RASD1; RAS, dexamethasone-induced 1) is a steroid hormone-dependent, Ras-related GTPase that influences cell morphology, growth, and cell-extracellular matrix interactions. Dexras1 can regulate receptor-mediated $G_{\beta/\gamma}$ (heterotrimeric G protein) signaling. Dexras1 couples NMDA and light input to $G_{i/o}$ and ERK activation. Dexras2 (Rhes; Ras Homolog Enriched in Striatum, RASD2; RAS, dexamethasone-induced 2, TEM2; tumor endothelial marker 2) is a GTPase that is abundant in the striatal region of the brain where it mediates signal cascades. Dexras2 (Rhes) mRNA levels are under the influence of dopamine and may play a role in determining normal dopamine receptor sensitivity. Dexras1 and Dexras2 (Rhes) define a subfamily of proteins within the Ras family, characterized by an extended variable domain in the carboxyl terminal region.

REFERENCES

1. Fang, M., et al. 2000. Dexras1: a G protein specifically coupled to neuronal nitric oxide synthase via CAPON. Neuron 28: 183-193.
2. Graham, T.E., et al. 2002. Dexras1/AGS-1 inhibits signal transduction from the G_i-coupled formyl peptide receptor to Erk-1/2 MAP kinases. J. Biol. Chem. 277: 10876-10882.
3. Graham, T.E., et al. 2004. Dexras1 inhibits adenylyl cyclase. Biochem. Biophys. Res. Commun. 316: 307-312.
4. Van Gelder, R.N. 2004. Resetting the clock: Dexras1 defines a path. Neuron 43: 603-604.
5. Cheng, H.Y., et al. 2004. Dexras1 potentiates photic and suppresses nonphotic responses of the circadian clock. Neuron 43: 715-728.
6. Spano, D., et al. 2004. Rhes is involved in striatal function. Mol. Cell. Biol. 24: 5788-5796.
7. Nguyen, C.H., et al. 2005. Dexras1 blocks receptor-mediated heterologous sensitization of adenylyl cyclase 1. Biochem. Biophys. Res. Commun. 332: 913-920.
8. Harrison, L.M., et al. 2006. Rhes, the Ras homolog enriched in striatum, is reduced under conditions of dopamine supersensitivity. Neuroscience 137: 483-492.

CHROMOSOMAL LOCATION

Genetic locus: RASD2 (human) mapping to 22q12.3.

PRODUCT

Dexras2 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 Dexras2 shRNA Plasmid (h): sc-105290-SH and Dexras2 shRNA (h) Lentiviral Particles: sc-105290-V as alternate gene silencing products.

For independent verification of Dexras2 (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-105290A, sc-105290B and sc-105290C.

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

Dexras2 siRNA (h) is recommended for the inhibition of Dexras2 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

Dexras1/2 (C-11): sc-398988 is recommended as a control antibody for monitoring of Dexras2 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 Dexras2 gene expression knockdown using RT-PCR Primer: Dexras2 (h)-PR: sc-105290-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.