SANTA CRUZ BIOTECHNOLOGY, INC.

GRIN1 siRNA (m): sc-145765

BACKGROUND

G protein-coupled receptors (GPCRs) represent a large superfamily of cell-surface receptors that are involved in a multitude of physiological processes such as perception of sensory information, modulation of synaptic transmission, hormone release/actions, regulation of cell contraction/migration and cell growth/differentiation. GPCRs interact with G proteins (heterotrimeric GTPases) to synthesize intracellular second messengers, such as diacylglycerol, cyclic AMP, inositol phosphates and calcium ions. Their diverse biological functions range from vision and olfaction to neuronal and endocrine signaling and are involved in many pathological conditions. GRIN1 (G protein regulated inducer of neurite outgrowth 1), also known as GPRIN1, is a 1,008 amino acid cell membrane protein that is widely expressed in the central nervous system, with highest levels in spinal cord. GRIN1 interacts with activated forms of $G_{\alpha i}$, $G_{\alpha o}$ and $G_{\alpha z}$ and may be involved in neurite outgrowth.

REFERENCES

1. Strathmann, M., et al. 1989. Diversity of the G-protein family: sequences from five additional a subunits in the mouse. Proc. Natl. Acad. Sci. USA 86: 7407-7409.
2. Chen, L.T., et al. 1999. A candidate target for G protein action in brain. J. Biol. Chem. 274: 26931-26938.
3. Iida, N. and Kozasa, T. 2004. Identification and biochemical analysis of GRIN1 and GRIN2. Methods Enzymol. 390: 475-483.
4. Nakata, H. and Kozasa, T. 2005. Functional characterization of Galphao signaling through G protein-regulated inducer of neurite outgrowth 1. Mol. Pharmacol. 67: 695-702.
5. Mejía-Guerra, M.K. and Lareo, L.R. 2005. In silico identification of regulatory elements of GRIN1 genes. OMICS 9: 106-115.
6. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 611239. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: Gprin1 (mouse) mapping to 13 B1.

PRODUCT

GRIN1 siRNA (m) 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 GRIN1 shRNA Plasmid (m): sc-145765-SH and GRIN1 shRNA (m) Lentiviral Particles: sc-145765-V as alternate gene silencing products.

For independent verification of GRIN1 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-145765A, sc-145765B and sc-145765C.

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

GRIN1 siRNA (m) is recommended for the inhibition of GRIN1 expression in mouse 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor GRIN1 gene expression knockdown using RT-PCR Primer: GRIN1 (m)-PR: sc-145765-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. Jeon, H.J., et al. 2023. N-methyl-D-aspartate receptors induce M1 polarization of macrophages: feasibility of targeted imaging in inflammatory response *in vivo*. Cell Biosci. 13: 69.

RESEARCH USE

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