



# GRIN3 siRNA (h): sc-88979

## 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/action, 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. GRIN3 (G protein-regulated inducer of neurite outgrowth 3), also known as GPRIN3, is a 776 amino acid protein that contains a C-terminal region which shares a high homology with GRIN2 and GRIN1, and may function in neurite outgrowth.

## REFERENCES

1. Strathmann, M., Wilkie, T.M. and Simon, M.I. 1989. Diversity of the G-protein family: sequences from five additional  $\alpha$  subunits in the mouse. *Proc. Natl. Acad. Sci. USA* 86: 7407-7409.
2. Chen, L.T., Gilman, A.G. and Kozasa, T. 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. *Meth. Enzymol.* 390: 475-483.
4. Nakata, H. and Kozasa, T. 2005. Functional characterization of  $G_{\alpha_o}$  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. Masuho, I., Mototani, Y., Sahara, Y., Asami, J., Nakamura, S., Kozasa, T. and Inoue, T. 2008. Dynamic expression patterns of G protein-regulated inducer of neurite outgrowth 1 (GRIN1) and its colocalization with  $G_{\alpha_o}$  implicate significant roles of  $G_{\alpha_o}$ -GRIN1 signaling in nervous system. *Dev. Dyn.* 237: 2415-2429.
7. Ge, X., Qiu, Y., Loh, H.H. and Law, P.Y. 2009. GRIN1 regulates micro-opioid receptor activities by tethering the receptor and G protein in the lipid raft. *J. Biol. Chem.* 284: 36521-36534.

## CHROMOSOMAL LOCATION

Genetic locus: GPRIN3 (human) mapping to 4q22.1.

## PRODUCT

GRIN3 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see GRIN3 shRNA Plasmid (h): sc-88979-SH and GRIN3 shRNA (h) Lentiviral Particles: sc-88979-V as alternate gene silencing products.

For independent verification of GRIN3 (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-88979A, sc-88979B and sc-88979C.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

GRIN3 siRNA (h) is recommended for the inhibition of GRIN3 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  $\mu$ M in 66  $\mu$ l. 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 GRIN3 gene expression knockdown using RT-PCR Primer: GRIN3 (h)-PR: sc-88979-PR (20  $\mu$ l). 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](http://www.scbt.com) for detailed protocols and support products.