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neuroigin 2 siRNA (m): sc-42086

BACKGROUND

Neuroigins are a family of plasma membrane proteins that possess an N-terminal hydrophobic domain, a large esterase homology domain, a single transmembrane region, a short cytoplasmic domain, and an EF-hand binding domain. Members of the neuroigin family include neuroigin 1, neuroigin 2 and neuroigin 3. Neuroigins are expressed in excitatory neuronal synaptic clefts. Neuroigins play a role in the formation and remodeling of CNS synapses by binding to β -neurexins, a family of neuronal cell surface proteins. neuroexin 1 β binds to the EF-hand domain of neuroigin 1 and requires calcium ion. Neuroigins also bind to PSD-95, which may recruit ion channels and neurotransmitter receptors to the synapses.

REFERENCES

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3. Irie, M., Hata, Y., Takeuchi, M., Ichtchenko, K., Toyoda, A., Hirao, K., Takai, Y., Rosahl, T.W. and Südhof, T.C. 1997. Binding of neuroigin to PSD-95. *Science* 277: 1511-1515.
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5. Tsigelny, I., Shindyalov, I.N., Bourne, P.E., Südhof, T.C. and Taylor, P. 2000. Common EF-hand motifs in cholinesterases and neuroigins suggest a role for Ca²⁺ binding in cell surface associations. *Protein Sci.* 9: 180-185.
6. Philibert R.A., Winfield, S.L., Sandhu, H.K., Martin, B.M. and Ginns, E.I. 2000. The structure and expression of the human neuroigin 3 gene. *Gene* 246: 303-310.

CHROMOSOMAL LOCATION

Genetic locus: Nlgn2 (mouse) mapping to 11 B3.

PRODUCT

neuroigin 2 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see neuroigin 2 shRNA Plasmid (m): sc-42086-SH and neuroigin 2 shRNA (m) Lentiviral Particles: sc-42086-V as alternate gene silencing products.

For independent verification of neuroigin 2 (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-42086A, sc-42086B and sc-42086C.

RESEARCH USE

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

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

APPLICATIONS

neuroigin 2 siRNA (m) is recommended for the inhibition of neuroigin 2 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 μ M in 66 μ 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 neuroigin 2 gene expression knockdown using RT-PCR Primer: neuroigin 2 (m)-PR: sc-42086-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Diniz, L.P., Tortelli, V., Garcia, M.N., Araújo, A.P., Melo, H.M., Silva, G.S., Felice, F.G., Alves-Leon, S.V., Souza, J.M., Romão, L.F., Castro, N.G. and Gomes, F.C. 2014. Astrocyte transforming growth factor β 1 promotes inhibitory synapse formation via CaM kinase II signaling. *Glia* 62: 1917-1931.

PROTOCOLS

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