SANTA CRUZ BIOTECHNOLOGY, INC.

Complexin-1 siRNA (m): sc-41924

BACKGROUND

Complexin-1 and Complexin-2, also designated Synaphin-1 and Synaphin-2, contain an α-helical middle domain of approximately 58 amino acids. Complexin-1 and Complexin-2 are expressed in presynaptic terminals of inhibitory and excitatory hippocampal neurons, respectively, and in cytoplasmic pools during early stages of development. Complexins promote SNARE (soluble N-ethylmaleimide-sensitive factor attachment protein receptors) precomplex formation by binding to synaxin with its α-helical domain. Complexins are important regulators of transmitter release at a late step in calcium dependent neurotransmitter release or immediately after the calcium-triggering step of fast synchronous transmitter release and preceding vesicle fusion. Neurons lacking complexins show reduced transmitter release efficiency due to decreased calcium sensitivity of the synaptic secretion process. Complexin-2 may play a role in only LTP (long term potentiation) following tetanic stimulation. A progressive loss of Complexin-2 occurs in the brains of mice carrying the Huntington disease mutation, an autosomal dominant neurodegenerative disorder. Changes in the neurotransmitter release might contribute to the motor, emotional and cognitive dysfunctions seen in these mice.

REFERENCES

1. McMahon, H.T., et al. 1995. Complexins: cytosolic proteins that regulate SNAP receptor function. Cell 83: 111-119.
2. Pabst, S., et al. 2000. Selective interaction of complexin with the neuronal SNARE complex. J. Biol. Chem. 275: 19808-19818.
3. Eastwood, S.L. and Harrison, P.J. 2000. Hippocampal synaptic pathology in schizophrenia, bipolar desorder and major depression: a study of complexin mRNAs. Mol. Psychiatry 5: 425-432.
4. Huang, G.Z., et al. 2000. Involvement of complexin II in synaptic plasticity in the CA1 region of the hippocampus: the use of complexin II-lacking mice. Jpn. J. Pharmacol. 84: 179-187.
5. Reim, K., et al. 2001. Complexins regulate a late step in Ca^{2+}-dependent neuro-transmitter release. Cell 104: 71-81.
6. Tokumaru, H., et al. 2001. SNARE complex oligomerization by Synaphin/Complexin is essential for synaptic vesicle exocytosis. Cell 104: 421-432.

CHROMOSOMAL LOCATION

Genetic locus: Cplx1 (mouse) mapping to 5 F.

PRODUCT

Complexin-1 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 Complexin-1 shRNA Plasmid (m): sc-41924-SH and Complexin-1 shRNA (m) Lentiviral Particles: sc-41924-V as alternate gene silencing products.

For independent verification of Complexin-1 (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-41924A, sc-41924B and sc-41924C.

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

Complexin-1 siRNA (m) is recommended for the inhibition of Complexin-1 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.

GENE EXPRESSION MONITORING

Complexin-1/2 (D-9): sc-365152 is recommended as a control antibody for monitoring of Complexin-1 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 Complexin-1 gene expression knockdown using RT-PCR Primer: Complexin-1 (m)-PR: sc-41924-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.