SANTA CRUZ BIOTECHNOLOGY, INC.

GODZ siRNA (m): sc-75159

BACKGROUND

Golgi-specific DHHC (Asp-His-His-Cys) zinc-finger protein (GODZ), also known as, palmitoyltransferase ZDHHC3 or zinc-finger protein 373, is a 327 amino acid protein member of the DHHC palmitoyltransferase family. Localized to the Golgi apparatus membrane, GODZ contains one DHHC-type zinc finger, which is necessary for its palmitoyltransferase activity. GODZ has been implicated in the palmitoylation and regulated trafficking of diverse substrates that function various inhibitory and excitatory synapses. Specifically, it palmitoylates the γ subunit 2 of $GABA_A$ receptors, which leads to normal synaptic GABAergic inhibitory function. GODZ also palmitoylates glutamate receptors GRIA1 and GRIA2, which leads to their retention in Golgi. Two isoforms of GODZ exist as a result of alternative splicing events.

REFERENCES

1. Uemura, T., et al. 2002. Isolation and characterization of Golgi apparatus-specific GODZ with the DHHC zinc-finger domain. Biochem. Biophys. Res. Commun. 296: 492-496.
2. Coyle, J.E., et al. 2003. GABARAP: lessons for synaptogenesis. Neuroscientist 9: 205-216.
3. Keller, C.A., et al. 2004. The γ2 subunit of $GABA_A$ receptors is a substrate for palmitoylation by GODZ. J. Neurosci. 24: 5881-5891.
4. Hayashi, T., et al. 2005. Differential regulation of AMPA receptor subunit trafficking by palmitoylation of two distinct sites. Neuron 47: 709-723.
5. Fang, C., et al. 2006. GODZ-mediated palmitoylation of $GABA_A$ receptors is required for normal assembly and function of GABAergic inhibitory synapses. J. Neurosci. 26: 12758-12768.
6. Chen, Z.W., et al. 2007. GABAA receptor associated proteins: a key factor regulating $GABA_A$ receptor function. J. Neurochem. 100: 279-294.
7. Kanematsu, T., et al. 2007. Regulation of $GABA_A$-receptor surface expression with special reference to the involvement of GABARAP ($GABA_A$ receptor-associated protein) and PRIP (phospholipase C-related, but catalytically inactive protein). J. Pharmacol. Sci. 104: 285-292.

CHROMOSOMAL LOCATION

Genetic locus: Zdhhc3 (mouse) mapping to 9 F4.

PRODUCT

GODZ 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 GODZ shRNA Plasmid (m): sc-75159-SH and GODZ shRNA (m) Lentiviral Particles: sc-75159-V as alternate gene silencing products.

For independent verification of GODZ (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-75159A, sc-75159B and sc-75159C.

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 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

GODZ siRNA (m) is recommended for the inhibition of GODZ 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

GODZ (A-10): sc-377378 is recommended as a control antibody for monitoring of GODZ 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 GODZ gene expression knockdown using RT-PCR Primer: GODZ (m)-PR: sc-75159-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.