SANTA CRUZ BIOTECHNOLOGY, INC.

MAP-6D1 siRNA (h): sc-78086

BACKGROUND

MAP-6D1 (MAP6 domain-containing protein 1, STOP-like protein 21) is a 199 amino acid mammalian neuronal protein belonging to the STOP family. Found primarily as a part of the Golgi apparatus membrane, MAP-6D1 interacts with calmodulin and localizes to microtubules in the cytoskeleton. Calmodulin is involved in the genetic pathway that has a key role in efficient mitosis. This process is believed to be mediated and enhanced by the palmitoylation of cysteine residues near the N-terminus. Palmitoylation helps increase the hydrophobicity of proteins and enhances their membrane association. Palmitoylation also has a significant role in the subcellular trafficking of proteins between membrane compartments, as well as in modulating protein-protein interactions. These processes indicate that MAP-6D1 is highly involved with Golgi and microtubule stabilizing activity.

REFERENCES

1. Bosc, C., et al. 1996. Cloning, expression, and properties of the microtubule-stabilizing protein STOP. Proc. Natl. Acad. Sci. USA 93: 2125-2130.
2. Baratier, J., et al. 2006. Phosphorylation of microtubule-associated protein STOP by calmodulin kinase II. J. Biol. Chem. 281: 19561-19569.
3. Gory-Faure, S., et al. 2006. STOP-like protein 21 is a novel member of the STOP family, revealing a Golgi localization of STOP proteins. J. Biol. Chem. 281: 28387-28396.
4. Galiano, M.R., et al. 2006. Myelin basic protein functions as a microtubule stabilizing protein in differentiated oligodendrocytes. J. Neurosci. Res. 84: 534-541.
5. Makarov, A.A., et al. 2007. Vinflunine, a novel microtubule inhibitor, suppresses calmodulin interaction with the microtubule-associated protein STOP. Biochemistry 46: 14899-14906.
6. Bouvrais-Veret, C., et al. 2008. Microtubule-associated STOP protein deletion triggers restricted changes in dopaminergic neurotransmission. J. Neurochem. 104: 745-756.
7. Hanaya, R., et al. 2008. Deletion of the STOP gene, a microtubule stabilizing factor, leads only to discrete cerebral metabolic changes in mice. J. Neurosci. Res. 86: 813-820.

CHROMOSOMAL LOCATION

Genetic locus: MAP6D1 (human) mapping to 3q27.1.

PRODUCT

MAP-6D1 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see MAP-6D1 shRNA Plasmid (h): sc-78086-SH and MAP-6D1 shRNA (h) Lentiviral Particles: sc-78086-V as alternate gene silencing products.

For independent verification of MAP-6D1 (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-78086A, sc-78086B and sc-78086C.

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

MAP-6D1 siRNA (h) is recommended for the inhibition of MAP-6D1 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 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

MAP-6D1 (F-6): sc-515352 is recommended as a control antibody for monitoring of MAP-6D1 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 MAP-6D1 gene expression knockdown using RT-PCR Primer: MAP-6D1 (h)-PR: sc-78086-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.