SANTA CRUZ BIOTECHNOLOGY, INC.

pantophysin siRNA (h): sc-89785

BACKGROUND

The MARVEL domain is a 130 amino acid motif that contains four transmembrane helices, both of which have cytoplasmic N- and C-terminal regions. MARVEL domain-containing proteins are thought to participate in tight junction regulation, the biogenesis of vesicular transport carriers and in cholesterol-rich membrane apposition events. Pantophysin, also known as SYPL1 (synaptophysin-like protein 1) or H-SP1, is a 259 amino acid multi-pass membrane protein that localizes to melanosomes and vesicles, as well as to the cytoplasm, and contains one MARVEL domain. Expressed as multiple alternatively spliced isoforms, pantophysin is present in tissues throughout the body where it may play a role in vesicle trafficking and protein transport. The gene encoding pantophysin maps to human chromosome 7, which houses over 1,000 genes and comprises nearly 5% of the human genome. Defects in some of the genes localized to chromosome 7 have been linked to osteogenesis imperfecta, Williams-Beuren syndrome, Pendred syndrome, lissencephaly, citrullinemia and Shwachman-Diamond syndrome.

REFERENCES

1. Zhong, C.Z., et al. 1992. Molecular cloning of a cDNA encoding a novel protein related to the neuronal vesicle protein synaptophysin. Biochim. Biophys. Acta 1129: 235-238.
2. Leube, R.E. 1994. Expression of the synaptophysin gene family is not restricted to neuronal and neuroendocrine differentiation in rat and human. Differentiation 56: 163-171.
3. Haass, N.K., et al. 1996. Pantophysin is a ubiquitously expressed synaptophysin homologue and defines constitutive transport vesicles. J. Cell Biol. 134: 731-746.
4. Windoffer, R., et al. 1999. Tissue expression of the vesicle protein pantophysin. Cell Tissue Res. 296: 499-510.
5. Brooks, C.C., et al. 2000. Pantophysin is a phosphoprotein component of adipocyte transport vesicles and associates with GLUT4-containing vesicles. J. Biol. Chem. 275: 2029-2036.
6. Bradley, R.L., et al. 2001. The adipocyte as a secretory organ: mechanisms of vesicle transport and secretory pathways. Recent Prog. Horm. Res. 56: 329-358.
7. Chi, A., et al. 2006. Proteomic and bioinformatic characterization of the biogenesis and function of melanosomes. J. Proteome Res. 5: 3135-3144.
8. Henriksson, R., et al. 2008. Elevated synaptophysin I in the prefrontal cortex of human chronic alcoholics. Synapse 62: 829-833.

CHROMOSOMAL LOCATION

Genetic locus: SYPL1 (human) mapping to 7q22.3.

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.

PRODUCT

pantophysin 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 pantophysin shRNA Plasmid (h): sc-89785-SH and pantophysin shRNA (h) Lentiviral Particles: sc-89785-V as alternate gene silencing products.

For independent verification of pantophysin (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-89785A, sc-89785B and sc-89785C.

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

pantophysin siRNA (h) is recommended for the inhibition of pantophysin 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.