SANTA CRUZ BIOTECHNOLOGY, INC.

VPS45 siRNA (m): sc-106700

BACKGROUND

VPS45 (vacuolar protein sorting-associated protein 45), also known as H1, H1VPS45, VPS45A or VPS45B, is a 570 amino acid peripheral membrane protein of the endosome and Golgi apparatus. Ubiquitously expressed, VPS45 is found at highest levels in brain, heart and tetis, with moderate levels in thymus, kidney, small intestine, ovary, prostate and spleen. Low levels have been observed in liver, peripheral blood leukocytes, lung, placenta, colon, pancreas and skeletal muscle. A member of the STXBP/unc-18/SEC1 family, VPS45 interacts with Syntaxin 6 and is implicated in vesicle-mediated protein trafficking. The gene encoding VPS45 maps to human chromosome 1, which spans 260 million base pairs, contains over 3,000 genes, comprises nearly 8% of the human genome and houses a large number of disease-associated genes, including those that are involved in familial adenomatous polyposis, Stickler syndrome, Parkinson's disease and Gaucher disease.

REFERENCES

1. Pevsner, J., et al. 1996. Mammalian homologues of yeast vacuolar protein sorting (vps) genes implicated in Golgi-to-lysosome trafficking. Gene 183: 7-14.
2. Rajasekariah, P., et al. 1999. Molecular cloning and characterization of a cDNA encoding the human leucocyte vacuolar protein sorting (h1Vps45). Int. J. Biochem. Cell Biol. 31: 683-694.
3. Nielsen, E., et al. 2000. Rabenosyn-5, a novel Rab5 effector, is complexed with hVPS45 and recruited to endosomes through a FYVE finger domain. J. Cell Biol. 151: 601-612.
4. Tayebi, N., et al. 2001. Gaucher disease and parkinsonism: a phenotypic and genotypic characterization. Mol. Genet. Metab. 73: 313-321.
5. de Renzis, S., et al. 2002. Divalent Rab effectors regulate the sub-compartmental organization and sorting of early endosomes. Nat. Cell Biol. 4: 124-133.
6. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 610035. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: Vps45 (mouse) mapping to 3 F2.1.

PRODUCT

VPS45 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 VPS45 shRNA Plasmid (m): sc-106700-SH and VPS45 shRNA (m) Lentiviral Particles: sc-106700-V as alternate gene silencing products.

For independent verification of VPS45 (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-106700A, sc-106700B and sc-106700C.

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

VPS45 siRNA (m) is recommended for the inhibition of VPS45 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor VPS45 gene expression knockdown using RT-PCR Primer: VPS45 (m)-PR: sc-106700-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.