SANTA CRUZ BIOTECHNOLOGY, INC.

DNB5 siRNA (h): sc-88721

BACKGROUND

DNB5 (deleted in neuroblastoma 5 protein), also known as PAST-A (proton-associated sugar transporter A) or SLC45A1, is a 748 amino acid member of the GPH cation symporter transporter family. Localized to membrane, DNB5 mediates the uptake of glucose along the pH gradient. DNB5 is expressed in brain, kidney, heart and muscle. The gene that encodes DNB5 maps to human chromosome 1p36.23, which is the largest human chromosome spanning approximately 260 million base pairs. Notable diseases associated with chromosome 1 include Hutchinson-Gilford progeria, familial adenomatous polyposis, Stickler syndrome, Parkinsons, Gaucher disease and Usher syndrome. A breakpoint in 1q, which disrupts the DISC1 gene, is linked to schizophrenia. Aberrations in chromosome 1 exist in a variety of cancers, including head and neck cancer, malignant melanoma and multiple myeloma.

REFERENCES

1. Ben Hamida, C., Cavalier, L., Belal, S., Sanhaji, H., Nadal, N., Barhoumi, C., M'Rissa, N., Marzouki, N., Mandel, J.L., Ben Hamida, M., Koenig, M. and Hentati, F. 1997. Homozygosity mapping of giant axonal neuropathy gene to chromosome 16q24.1. Neurogenetics 1: 129-133.
2. Amler, L.C., Bauer, A., Corvi, R., Dihlmann, S., Praml, C., Cavenee, W.K., Schwab, M. and Hampton, G.M. 2000. Identification and characterization of novel genes located at the t(1;15)(p36.2;q24) translocation breakpoint in the neuroblastoma cell line NGP. Genomics 64: 195-202.
3. Karlsson, J., Zhao, X., Lonskaya, I., Neptin, M., Holmdahl, R. and Andersson, A. 2003. Novel quantitative trait loci controlling development of experimental autoimmune encephalomyelitis and proportion of lymphocyte subpopulations. J. Immunol. 170: 1019-1026.
4. Forabosco, P., Gorman, J.D., Cleveland, C., Kelly, J.A., Fisher, S.A., Ortmann, W.A., Johansson, C., Johanneson, B., Moser, K.L., Gaffney, P.M., Tsao, B.P., Cantor, R.M., et al. 2006. Meta-analysis of genome-wide linkage studies of systemic lupus erythematosus. Genes Immun. 7: 609-614.
5. Carneiro, L.A., Travassos, L.H. and Girardin, S.E. 2007. Nod-like receptors in innate immunity and inflammatory diseases. Ann. Med. 39: 581-593.
6. Yang, Y., Allen, E., Ding, J. and Wang, W. 2007. Giant axonal neuropathy. Cell. Mol. Life Sci. 64: 601-609.
7. Gervasini, C., Castronovo, P., Bentivegna, A., Mottadelli, F., Faravelli, F., Giovannucci-Uzielli, M.L., Pessagno, A., Lucci-Cordisco, E., Pinto, A.M., Salviati, L., Selicorni, A., Tenconi, R., Neri, G. and Larizza, L. 2007. High frequency of mosaic CREBBP deletions in Rubinstein-Taybi syndrome patients and mapping of somatic and germ-line breakpoints. Genomics 90: 567-573.
8. Koop, O., Schirmacher, A., Nelis, E., Timmerman, V., De Jonghe, P., Ringelstein, B., Rasic, V.M., Evrard, P., Gärtner, J., Claeys, K.G., Appenzeller, S., Rautenstrauss, B., Hühne, K., Ramos-Arroyo, M.A., Wörle, H., et al. 2007. Genotype-phenotype analysis in patients with giant axonal neuropathy (GAN). Neuromuscul. Disord. 17: 624-630.

CHROMOSOMAL LOCATION

Genetic locus: SLC45A1 (human) mapping to 1p36.23.

PRODUCT

DNB5 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 DNB5 shRNA Plasmid (h): sc-88721-SH and DNB5 shRNA (h) Lentiviral Particles: sc-88721-V as alternate gene silencing products.

For independent verification of DNB5 (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-88721A, sc-88721B and sc-88721C.

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

DNB5 siRNA (h) is recommended for the inhibition of DNB5 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor DNB5 gene expression knockdown using RT-PCR Primer: DNB5 (h)-PR: sc-88721-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.