SANTA CRUZ BIOTECHNOLOGY, INC.

BOCT siRNA (m): sc-141722

BACKGROUND

BOCT (brain-type organic cation transporter), also known as solute carrier family 22 member 17, is a 538 amino acid protein that belongs to the major facilitator superfamily as well as the organic cation transporter family. BOCT is considered a multi-pass membrane protein and is highly conserved. BOCT is expressed in brain and is abundantly expressed in erythroid cells. Known to be a receptor for NGAL, BOCT transports iron-lacking LCN2 into cells. BOCT exists as two alternatively spliced isoforms and it's expression is supressed by c-Abl oncoprotein. The BOCT gene maps to chromosome 14q11.2. Chromosome 14 contains about 700 genes and 106 million base pairs and makes up about 3.5% of human cellular DNA. Chromosome 14 encodes the presinilin 1 (PSEN1) gene, which is one of the three key genes associated with the development of Alzheimer's disease.

REFERENCES

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2. Miyazaki, H., et al. 2004. The multispecific organic anion transporter family: properties and pharmacological significance. Trends Pharmacol. Sci. 25: 654-662.
3. Devireddy, L.R., et al. 2005. A cell-surface receptor for lipocalin 24p3 selectively mediates apoptosis and iron uptake. Cell 123: 1293-1305.
4. Yan, D., et al. 2006. A novel locus for autosomal dominant non-syndromic deafness, DFNA53, maps to chromosome 14q11.2-q12. J. Med. Genet. 43: 170-174.
5. Lee, S., et al. 2007. A dual role of lipocalin 2 in the apoptosis and deramification of activated microglia. J. Immunol. 179: 3231-3241.
6. Albani, D., et al. 2007. Presenilin-1 mutation E318G and familial Alzheimer's disease in the Italian population. Neurobiol. Aging 28: 1682-1688.
7. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 611461. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
8. Miharada, K., et al. 2008. Lipocalin 2-mediated growth suppression is evident in human erythroid and monocyte/macrophage lineage cells. J. Cell. Physiol. 215: 526-537.

CHROMOSOMAL LOCATION

Genetic locus: Slc22a17 (mouse) mapping to 14 C3.

PRODUCT

BOCT 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 BOCT shRNA Plasmid (m): sc-141722-SH and BOCT shRNA (m) Lentiviral Particles: sc-141722-V as alternate gene silencing products.

For independent verification of BOCT (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-141722A, sc-141722B and sc-141722C.

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

BOCT siRNA (m) is recommended for the inhibition of BOCT 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 BOCT gene expression knockdown using RT-PCR Primer: BOCT (m)-PR: sc-141722-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Li, Q., et al. 2022. Lipocalin-2-mediated insufficient oligodendrocyte progenitor cell remyelination for white matter injury after subarachnoid hemorrhage via SCL22A17 receptor/early growth response protein 1 signaling. Neurosci. Bull. E-published.

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.