SANTA CRUZ BIOTECHNOLOGY, INC.

BLP1 siRNA (h): sc-77828

BACKGROUND

Alzheimer's disease is histologically characterized by the presence of β-amyloid plaques that accumulate in brain tissue. It is thought that these plaques interfere with calcium ion homeostasis, resulting in neuron cell death. BLP1 (β-amyloid-binding protein-like protein 1), also known as TM2 domain-containing protein 2, is a 214 amino acid multi-pass transmembrane protein that is expressed ubiquitously, with highest expression in hippocampus. BLP1 shares significant structural and sequence similarity with BBP (β-amyloid peptide binding protein), which regulates responses to β-amyloid. *In vitro,* BBP binds β-amyloid with high affinity and selectivity, suggesting that BBP is a molecular target of β-amyloid. Related to the G protein-coupled receptor superfamily, BBP can modulate neuronal apoptosis initiated by β-amyloid through a G protein and caspase dependent mechanism. BLP1, which exists as two alternatively spliced isoforms, is thought to function in a similar manner to BLP1.

REFERENCES

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2. Kajkowski, E.M., et al. 2001. β -Amyloid peptide-induced apoptosis regulated by a novel protein containing a γ protein activation module. J. Biol. Chem. 276: 18748-18756.
3. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 610080. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
4. Sadowski, M., et al. 2004. A synthetic peptide blocking the apolipoprotein E/β-Amyloid binding mitigates β-Amyloid toxicity and fibril formation *in vitro* and reduces β-Amyloid plaques in transgenic mice. Am. J. Pathol. 165: 937-948.
5. Hook, V., et al. 2008. Alternative pathways for production of β-Amyloid peptides of Alzheimer's disease. Biol. Chem. 389: 993-1006.
6. Gomperts, S.N., et al. 2008. Imaging amyloid deposition in Lewy body diseases. Neurology 71: 903-910.

CHROMOSOMAL LOCATION

Genetic locus: TM2D2 (human) mapping to 8p11.22.

PRODUCT

BLP1 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 BLP1 shRNA Plasmid (h): sc-77828-SH and BLP1 shRNA (h) Lentiviral Particles: sc-77828-V as alternate gene silencing products.

For independent verification of BLP1 (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-77828A, sc-77828B and sc-77828C.

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

BLP1 siRNA (h) is recommended for the inhibition of BLP1 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 BLP1 gene expression knockdown using RT-PCR Primer: BLP1 (h)-PR: sc-77828-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.