SANTA CRUZ BIOTECHNOLOGY, INC.

BBP siRNA (m): sc-141482

BACKGROUND

Proteolytic cleavage of the Amyloid protein precursor (APP) gives rise to the β-Amyloid and Amyloid A4 proteins, which are present in human platelets. Amyloid deposition is associated with type II diabetes, Down syndrome and a variety of neurological disorders, including Alzheimer's disease. Proteolytic cleavage of APP leads to the formation of the Amyloid β/A4 Amyloid protein. This protein is involved in the formation of neurofibrillary tangles and plaques that characterize the senile plaques of Alzheimer's patients. BBP (β-Amyloid-binding protein), also known as TM2D1 (TM2 domain-containing protein 1), is a 207 amino acid multi-pass membrane protein containing a G protein-coupling module that allows for interaction with the β-Amyloid peptide of APP. In cell culture, expression of BBP induces caspase-dependent vulnerability to β-Amyloid peptide toxicity, suggesting that it is a target of β-Amyloid and may be involved in the molecular pathophysiology of Alzheimer's disease.

REFERENCES

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2. Taru, H., et al. 2002. Interaction of Alzheimer's β-Amyloid precursor family proteins with scaffold proteins of the JNK signaling cascade. J. Biol. Chem. 277: 20070-20078.
3. Lee, Y., et al. 2003. β-Amyloid peptide binding protein does not couple to G protein in a heterologous *Xenopus* expression system. J. Neurosci. Res. 73: 255-259.
4. Kawasumi, M., et al. 2004. Cytoplasmic tail adaptors of Alzheimer's Amyloid-β protein precursor. Mol. Neurobiol. 302: 185-200.
5. Online Mendelian Inheritance in Man, OMIM™. 2006. Johns Hopkins University, Baltimore, MD. MIM Number: 610080. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Cohen, L.S., et al. 2008. Expression and biophysical analysis of two double-transmembrane domain-containing fragments from a yeast G protein-coupled receptor. Biopolymers 902: 117-130.
7. Vetrivel, K.S. and Thinakaran, G. 2010. Membrane rafts in Alzheimer's disease β-Amyloid production. Biochim. Biophys. Acta 1801: 860-867.
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CHROMOSOMAL LOCATION

Genetic locus: Tm2d1 (mouse) mapping to 4 C6.

PRODUCT

BBP siRNA (m) is a target-specific 19-25 nt siRNA 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 BBP shRNA Plasmid (m): sc-141482-SH and BBP shRNA (m) Lentiviral Particles: sc-141482-V as alternate gene silencing products.

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

BBP siRNA (m) is recommended for the inhibition of BBP 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 BBP gene expression knockdown using RT-PCR Primer: BBP (m)-PR: sc-141482-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.