SANTA CRUZ BIOTECHNOLOGY, INC.

APP siRNA (m): sc-29678

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. The Amyloid precursor protein (APP) undergoes alternative splicing, resulting in several isoforms. 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. APLP1 (Amyloid precursor-like protein 1) and APLP2 are structurally similar to APP. Human APLP2 is a membrane-bound sperm protein that contains a region highly homologous to the transmembrane-cytoplasmic domains of APP found in brain plaques of Alzheimer's disease patients.

REFERENCES

1. Kosik, K.S. 1992. Alzheimer's disease: a cell perspective. Science 256: 780-783.
2. Dyrks, T., et al. 1993. Generation of β/A4 from the Amyloid protein precursor and fragments thereof. FEBS Lett. 335: 89-93.
3. Hirai, S., et al. 1993. Amyloid β/A4 peptide associated with Alzheimer's disease and cerebral Amyloid angiopathy. Intern. Med. 32: 923-925.
4. Arendt, T., et al. 1995. Paired helical filament-like phosphorylation of Tau, deposition of β/A4-Amyloid and memory impairment in rat induced by chronic inhibition of phosphatase 1 and 2A. Neuroscience 69: 691-698.
5. van Leeuwen, F.W., et al. 1998. Frameshift mutants of β-Amyloid precursor protein and ubiquitin-B in Alzheimer's and Down patients. Science 279: 242-247.
6. Tamboli I.Y., et al. 2005. Inhibition of glycosphingolipid biosynthesis reduces secretion of the β-Amyloid precursor protein and Amyloid β-peptide. J. Biol. Chem. 280: 28110-28117.

CHROMOSOMAL LOCATION

Genetic locus: App (mouse) mapping to 16 C3.3.

PRODUCT

APP 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 APP shRNA Plasmid (m): sc-29678-SH and APP shRNA (m) Lentiviral Particles: sc-29678-V as alternate gene silencing products.

For independent verification of APP (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-29678A, sc-29678B and sc-29678C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support 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

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

GENE EXPRESSION MONITORING

β-Amyloid (B-4): sc-28365 is recommended as a control antibody for monitoring of APP gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor APP gene expression knockdown using RT-PCR Primer: APP (m)-PR: sc-29678-PR (20 µl, 407 bp). 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.