

X11 β siRNA (h): sc-36849

BACKGROUND

The β -Amyloid precursor protein (β -APP) is a major constituent of the amyloid deposits in patients with Alzheimer's disease. The β -Amyloid precursor is known to interact with several proteins, including X11 and the G heterotrimeric protein APP-BP1. The neuronal, transmembrane protein X11 is known to bind to the β -Amyloid precursor protein via a phosphotyrosine binding (PTB) domain, reducing the secretion of cellular β -APP and slowing β -APP processing pathways. X11 binds specifically to the YENPTY motif, which is involved in the internalization of β -APP. Multiple splice variants of X11 have been identified, including X11 α (also designated Mint 1), X11 β (Mint 2) and X11 γ (Mint 3).

REFERENCES

1. Borg, J.P., et al. 1996. The phosphotyrosine interaction domains of X11 and FE65 bind to distinct sites on the YENPTY motif of Amyloid precursor protein. *Mol. Cell. Biol.* 16: 6229-6241.
2. Okamoto, M., et al. 1997. Mints, Munc18-interacting proteins in synaptic vesicle exocytosis. *J. Biol. Chem.* 272: 31459-31464.
3. Zhang, Z., et al. 1997. Sequence-specific recognition of the internalization motif of the Alzheimer's Amyloid precursor protein by the X11 PTB domain. *EMBO J.* 16: 6141-6150.
4. Russo, T., et al. 1998. Fe65 and the protein network centered around the cytosolic domain of the Alzheimer's β -Amyloid precursor protein. *FEBS Lett.* 434: 1-7.
5. Borg, J.P., et al. 1998. The X11 α protein slows cellular Amyloid precursor protein processing and reduces A β 40 and A β 42 secretion. *J. Biol. Chem.* 273: 14761-14766.
6. Sastre, M., et al. 1998. X11 interaction with β -Amyloid precursor protein modulates its cellular stabilization and reduces Amyloid β -protein secretion. *J. Biol. Chem.* 273: 22351-22357.

CHROMOSOMAL LOCATION

Genetic locus: APBA2 (human) mapping to 15q13.1.

PRODUCT

X11 β 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see X11 β shRNA Plasmid (h): sc-36849-SH and X11 β shRNA (h) Lentiviral Particles: sc-36849-V as alternate gene silencing products.

For independent verification of X11 β (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-36849A, sc-36849B and sc-36849C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

X11 β siRNA (h) is recommended for the inhibition of X11 β 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 μ M in 66 μ l. 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

X11 β (B-5): sc-377060 is recommended as a control antibody for monitoring of X11 β 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 X11 β gene expression knockdown using RT-PCR Primer: X11 β (h)-PR: sc-36849-PR (20 μ l). 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.