X11α (C-2): sc-137023

SANTA CRUZ®
BIOTECHNOLOGY

The Power to Question

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 heterot-rimetric 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 varitents of X11 have been identified, including X11α (also designated Mint 1), X11β (Mint 2) and X11γ (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 X11α protein slows cellular Amyloid precursor protein processing and reduces Aβ40 and Aβ42 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.

7. Biederer, T., et al. 2000. Mints as adaptors. Direct binding to neurexins and recruitment of Munc18. J. Biol. Chem. 275: 39803-39806.

CHROMOSOMAL LOCATION

Genetic locus: APBA1 (human) mapping to 9q21.11; Apba1 (mouse) mapping to 19 B.

SOURCE

X11α (C-2) is a mouse monoclonal antibody raised against amino acids 1-265 mapping near the N-terminus of X11α of human origin.

PRODUCT

Each vial contains 200 µg IgG$_1$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

X11α (C-2) is recommended for detection of X11α of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for X11α siRNA (h): sc-36851, X11α siRNA (m): sc-36852, X11α shRNA Plasmid (h): sc-36851-SH, X11α shRNA Plasmid (m): sc-36852-SH, X11α shRNA (h) Lentiviral Particles: sc-36851-V and X11α shRNA (m) Lentiviral Particles: sc-36852-V.

Molecular Weight (predicted) of X11α: 93 kDa.

Molecular Weight (observed) of X11α: 120-156 kDa.

Positive Controls: mouse brain extract: sc-2253, rat brain extract: sc-2392 or rat cerebellum extract: sc-2398.

RECOMMENDED SUPPORT REAGENTS

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) Immunopre-cipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA
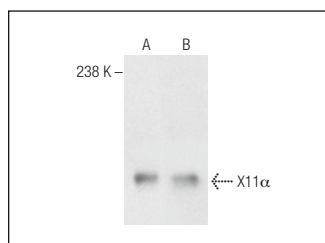
X11α (C-2): sc-137023. Western blot analysis of X11α expression in rat cerebellum (**A**) and mouse brain (**B**) tissue extracts.
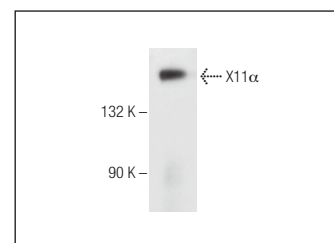
X11α (C-2): sc-137023. Western blot analysis of X11α expression in rat brain tissue extract.

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.