SANTA CRUZ BIOTECHNOLOGY, INC.

X11α (23): sc-136122

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 heterotrimetric 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.
8. Lau, K.F., et al. 2000. X11α and X11β interact with presenilin-1 via their PDZ domains. Mol. Cell. Neurosci 16: 557-565.
9. Ho, A., et al. 2003. A role for Mints in transmitter release: Mint 1 knockout mice exhibit impaired GABAergic synaptic transmission. Proc. Natl. Acad. Sci. USA 100: 1409-1414.

CHROMOSOMAL LOCATION

Genetic locus: Apba1 (mouse) mapping to 19 B.

SOURCE

X11α (23) is a mouse monoclonal antibody raised against amino acids 268-377 of X11α of rat origin.

PRODUCT

Each vial contains 50 µg IgG_1 in 0.5 ml of PBS with < 0.1% sodium azide, 0.1% gelatin, 20% glycerol and 0.04% stabilizer protein.

APPLICATIONS

X11α (23) is recommended for detection of X11α of mouse and rat origin by Western Blotting (starting dilution 1:200, 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

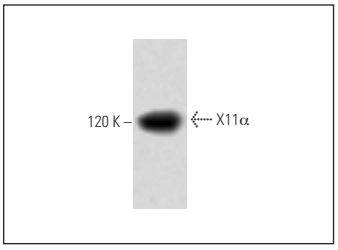
Suitable for use as control antibody for X11α siRNA (m): sc-36852, X11α shRNA Plasmid (m): sc-36852-SH and X11α shRNA (m) Lentiviral Particles: sc-36852-V.

Molecular Weight (predicted) of X11α: 93 kDa.

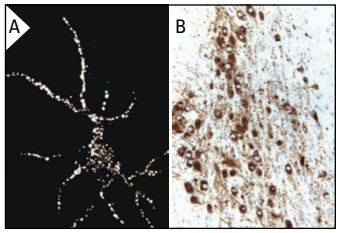
Molecular Weight (observed) of X11α: 120-156 kDa.

Positive Controls: rat cerebrum tissue extract, rat brain extract: sc-2392 or mouse brain extract: sc-2253.

DATA



X11α (23): sc-136122. Western blot analysis of X11α expression in rat cerebrum tissue extract.



X11â (23): sc-136122. Immunofluorescence staining of rat neuron (**A**,**B**) cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Jones, K.A., et al. 2014. Scaffold protein X11α interacts with kalirin-7 in dendrites and recruits it to Golgi outposts. J. Biol. Chem. 289: 35517-35529.
2. Zhang, K., et al. 2020. CASK, APBA1, and STXBP1 collaborate during Insulin secretion. Mol. Cell. Endocrinol. 520: 111076.
3. Shah, D.P., et al. 2022. Recurrent hypoglycemia dampens functional regulation mediated via Neurexin-1, Neuroligin-2 and Mint1 docking proteins: Intensified complications during diabetes. Cell. Signal. 104: 110582.

STORAGE

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

RESEARCH USE

For research use only, not for use in diagnostic procedures. Not for resale.

PROTOCOLS

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