

neuroigin X/Y (E-14): sc-50136

BACKGROUND

Neuroigins are a family of plasma membrane proteins that possess an N-terminal hydrophobic sequence, a large esterase homology domain, a single transmembrane region and a short cytoplasmic domain. Neuroigins are expressed in excitatory, synaptic clefts and play a role in the formation and remodeling of CNS synapses by binding to β -neurexins, a family of neuronal cell surface proteins. Neuroigins also bind to PSD-95, which may recruit ion channels and neurotransmitter receptors to the synapse. A single-copy X-degenerate gene within the male-specific region of chromosome Y (MSY), which is not involved in X-Y crossover events, encodes neuroigin X/Y (NLGN4Y). Neuroigin X/Y and its X-linked homolog, NLGN4, contain all amino acids essential for neuroigin function, including the cysteines, the transmembrane domain and the PDZ-binding domain. Expression of NLGN4 and neuroigin X/Y is observed in all male brain regions examined, while female brain tissue only demonstrates NLGN4 expression.

REFERENCES

- Nagase, T., Ishikawa, K., Suyama, M., Kikuno, R., Hirose, M., Miyajima, N., Tanaka, A., Kotani, H., Nomura, N. and Ohara, O. 1999. Prediction of the coding sequences of unidentified human genes. XIII. The complete sequences of 100 new cDNA clones from brain which code for large proteins *in vitro*. DNA Res. 6: 63-70.
- Jamain, S., Quach, H., Betancur, C., Rastam, M., Colineaux, C., Gillberg, I.C., Soderstrom, H., Giros, B., Leboyer, M., Gillberg, C., Bourgeron, T. and Paris Autism Research International Sibpair Study. 2003. Mutations of the X-linked genes encoding neuroigins NLGN3 and NLGN4 are associated with autism. Nat. Genet. 34: 27-29.
- Skaletsky, H., Kuroda-Kawaguchi, T., Minx, P.J., Cordum, H.S., Hillier, L., Brown, L.G., Repping, S., Pyntikova, T., Ali, J., Bieri, T., Chinwalla, A., Delehaunty, A., Delehaunty, K., Du, H., Fewell, G., Fulton, L., Fulton, R., et al. 2003. The male-specific region of the human Y chromosome is a mosaic of discrete sequence classes. Nature 423: 825-837.
- Laumonnier, F., Bonnet-Brihault, F., Gomot, M., Blanc, R., David, A., Moizard, M.P., Raynaud, M., Ronce, N., Lemonnier, E., Calvas, P., Laudier, B., Chelly, J., Fryns, J.P., Ropers, H.H., Hamel, B.C. andres, C., Barthelemy, C., Moraine, C. and Briault, S. 2004. X-linked mental retardation and autism are associated with a mutation in the NLGN4 gene, a member of the neuroigin family. Am. J. Hum. Genet. 74: 552-557.
- Vincent, J.B., Kolozsvari, D., Roberts, W.S., Bolton, P.F., Gurling, H.M. and Scherer, S.W. 2004. Mutation screening of X-chromosomal neuroigin genes: no mutations in 196 autism probands. Am. J. Med. Genet. B Neuropsychiatr. Genet. 129: 82-84.
- Zhang, Z. and Henzel, W.J. 2004. Signal peptide prediction based on analysis of sites. Protein Sci. 13: 2819-2824.
- Ylisaukko-oja, T., Rehnström, K., Auranen, M., Vanhala, R., Alen, R., Kempas, E., Ellonen, P., Turunen, J.A., Makkonen, I., Riikonen, R., Nieminen-von Wendt, T., von Wendt, L., Peltonen, L. and Järvelä, I. 2005. Analysis of four neuroigin genes as candidates for autism. Eur. J. Hum. Genet. 13: 1285-1292.

CHROMOSOMAL LOCATION

Genetic locus: NLGN4X (human) mapping to Xp22.32, NLGN4Y (human) mapping to Yq11.221.

SOURCE

neuroigin X/Y (E-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an extracellular domain of neuroigin X/Y of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-50136 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

neuroigin X/Y (E-14) is recommended for detection of neuroigin X/Y of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

neuroigin X/Y (E-14) is also recommended for detection of neuroigin X/Y in additional species, including equine, canine, bovine and avian.

Suitable for use as control antibody for neuroigin X/Y siRNA (h): sc-61186, neuroigin X/Y shRNA Plasmid (h): sc-61186-SH and neuroigin X/Y shRNA (h) Lentiviral Particles: sc-61186-V.

Molecular Weight of neuroigin X/Y: 92 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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.

PROTOCOLS

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