Recombinant Human Neuroligin 3/NLGN3

Catalog Number: 9069-NL

DESCRIPTION

Source	Mouse myeloma cell line, NS0-derived Ala39-Ser709 (Ser92Tyr), with a C-terminal 6-His tag Accession # Q9NZ94
N-terminal Sequence Analysis	Ala39
Predicted Molecular Mass	76 kDa

SPECIFICATIONS

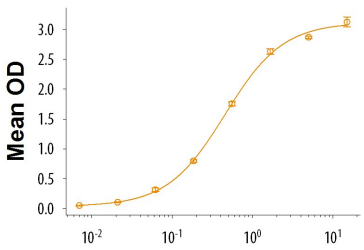
SDS-PAGE	87-101 kDa, reducing conditions
Activity	Measured by its binding ability in a functional ELISA. When Recombinant Human Neuroligin 3/NLGN3 is immobilized at 2 µg/mL, Biotinylated Recombinant Human Neurexin 1 beta Fc Chimera binds with a typical ED_{50} = 150-900 ng/mL.
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>90%, by SDS-PAGE visualized with Silver Staining and quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute at 500 µg/mL in PBS.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** ● 12 months from date of receipt, -20 to -70 °C as supplied. ● 1 month, 2 to 8 °C under sterile conditions after reconstitution. ● 3 months, -20 to -70 °C under sterile conditions after reconstitution.

DATA

Bioactivity



When Recombinant Human Neuroligin 3/NLGN3 (Catalog # 9069-NL) is immobilized at 2 µg/mL, Biotinylated Recombinant Human Neurexin 1 beta Fc Chimera binds with a typical ED_{50} of 150-900 ng/mL.

bio-techne
bio-techne.com
Global info@bio-techne.com techsupport@bio-techne.com
North America TEL 800 343 7475 Europe | Middle East | Africa TEL +44 (0)1235 529449
China info.cn@bio-techne.com TEL +86 (21) 52380373
Rest of World bio-techne.com/find-us/distributors TEL +1 612 379 2956

Recombinant Human Neuroligin 3/NLGN3

Catalog Number: 9069-NL

BACKGROUND

Neuroligin 3 (NLGN3) is one of several type I transmembrane Neuroligin proteins that play an important role in synaptic development (1, 2). Mature human Neuroligin 3 is an approximately 120 kDa molecule that consists of a 672 amino acid (aa) extracellular domain (ECD) with a catalytically inactive cholinesterase-like domain, a 21 aa transmembrane segment, and a 118 aa cytoplasmic tail (3). Alternative splicing generates additional isoforms with 20 aa or 40 aa deletions in the ECD (3-5). Within the ECD, human Neuroligin 3 shares 99% aa sequence identity with comparable regions of mouse and rat Neuroligin 3. It is expressed during development on astrocytes and Schwann cells (6) as well as on neurons where it localizes to synaptic membranes and post-synaptic densities of both glutamatergic and GABAergic synapses (7). It associates *in cis* with Neuroligin 1 and Neuroligin 2 and trans-synaptically with Neurexin-1β, -2β, and -3β that lack the splice site 4 insertion (3, 7). A soluble form of the Neuroligin 3 ECD can be released by neurons and promotes glioma cell proliferation (8). Mutations in Neuroligin 3 enhance neuronal dendritic branching, alter both excitatory and inhibitory synaptic activity (9-12), and are associated with the development of autism spectrum disorder (13, 14).

References:

1. Bemben, M.A. *et al.* (2015) Trends Neurosci. **38**:496.
2. Mackowiak, M. *et al.* (2014) Pharmacol. Rep. **66**:830.
3. Ichtchenko, K. *et al.* (1996) J. Biol. Chem. **271**:2676.
4. Philibert, R.A. *et al.* (2000) Gene **246**:303.
5. Talebizadeh, Z. *et al.* (2006) J. Med. Genet. **43**:e21.
6. Gilbert, M. *et al.* (2001) Glia **34**:151.
7. Budreck, E.C. and P. Scheiffele (2007) Eur. J. Neurosci. **26**:1738.
8. Venkatesh, H.S. *et al.* (2015) Cell **161**:803.
9. Etherton, M. *et al.* (2011) Proc. Natl. Acad. Sci. USA **108**:13764.
10. Foldy, C. *et al.* (2013) Neuron **78**:498.
11. Tabuchi, K. *et al.* (2007) Science **318**:71.
12. Gutierrez, R.C. *et al.* (2009) Neuroscience **162**:208.
13. Jamain, S. *et al.* (2003) Nat. Genet. **34**:27.
14. Rothwell, P.E. *et al.* (2014) Cell **158**:198.

bio-techne
bio-techne.com
Global info@bio-techne.com techsupport@bio-techne.com
North America TEL 800 343 7475 Europe | Middle East | Africa TEL +44 (0)1235 529449
China info.cn@bio-techne.com TEL +86 (21) 52380373
Rest of World bio-techne.com/find-us/distributors TEL +1 612 379 2956