# biotechne

## Human/Rat Neuroligin 2/NLGN2 Antibody

Antigen Affinity-purified Polyclonal Goat IgG Catalog Number: AF5645

### **R**Dsystems

DESCRIPTION			
Species Reactivity	Human/Rat		
Specificity	Detects human and rat Neuroligin 2/NLGN2 in direct ELISAs and Western blots.		
Source	Polyclonal Goat IgG		
Purification	Antigen Affinity-purified		
Immunogen	Nunogen         Mouse myeloma cell line NS0-derived recombinant human Neuroligin 2/NLGN2           GIn15-Ser660         Accession # EAW90197		
Formulation	ulation Lyophilized from a 0.2 µm filtered solution in PBS with Trehalose. See Certificate of Analysis for details. *Small pack size (-SP) is supplied either lyophilized or as a 0.2 µm filtered solution in PBS.		

### APPLICATIONS

DATA

Please Note: Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.				
	Recommended Concentration	Sample		
Western Blot	1-3 µg/mL	See Below		

DAIA		
Western Blot	Detection of Human and Rat Neuroligin 2/NLGN2 by         Western Blot. Western blot shows lysates of human cortex and rat cerebellum tissue. PVDF membrane was probed with 1         ligin 2       µg/mL of Goat Anti-Human/Rat Neuroligin 2/NLGN2 Antigen Affinity-purified Polycional Antibody (Catalog # AF5645) followed by HRP-conjugated Anti- Goat IgG Secondary Antibody (Catalog # HAF019). A specific band was detected for Neuroligin 2/NLGN2 at approximately 100 kDa (as indicated). This experiment was conducted under reducing conditions and using Immunohold Rifer Group 8	
PREPARATION AND S	TORAGE	
Reconstitution	Reconstitute at 0.2 mg/mL in sterile PBS.	
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below. *Small pack size (-SP) is shipped with polar packs. Upon receipt, store it immediately at -20 to -70 °C	
Stability & Storage	Use a manual defrost freezer and avoid repeated freeze-thaw cycles. <ul> <li>12 months from date of receipt, -20 to -70 °C as supplied.</li> <li>1 month, 2 to 8 °C under sterile conditions after reconstitution.</li> </ul>	

• 6 months, -20 to -70 °C under sterile conditions after reconstitution.

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### BACKGROUND

Neuroligin 2 (NLGN2) is one of several type I transmembrane Neuroligins that are expressed on neuronal postsynaptic densities. Neuroligins play an important role in synaptic development and function (1). Mature human Neuroligin 2 is a 105 kDa protein that consists of a 663 amino acid (aa) extracellular domain (ECD) with a catalytically inactive cholinesterase-like domain, a 21 aa transmembrane segment, and a 137 aa cytoplasmic tail (2, 3). Within the ECD, human Neuroligin 2 shares 98% aa sequence identity with mouse and rat Neuroligin 2. Alternate splicing generates an isoform with a 17 aa insertion at splice site A within the ECD (2). This recombinant protein does not contain the splice site A insert (-SS A). Neuroligin 2 is expressed on neurons in the brain and also on pancreatic beta cells where it facilitates insulin secretion (2, 4, 5). The -SS A isoform is uniformly expressed among inhibitory and excitatory synapses, while the +SS A isoform is enriched at inhibitory GABAergic synapses (4, 6, 7). Neuroligin 2 clusters at postsynaptic densities in association with other postsynaptic proteins including S-SCAM, PSD-95, gephyrin, and Neuroligin 3 (4, 8 - 10). Synaptic maturation is promoted by the binding of Neuroligin 2 with presynaptic Neurexins, and these interactions are restricted to particular combinations of isoforms of the binding partners (11-15). Neuroligin 2 interacts with the alpha and beta forms of Neurexin 1, 2, and 3 (14). Its -SS A and +SS A isoform can induce development of Neuroligin 2-dependent GABAergic contacts (7, 15).

#### References:

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