

Product Datasheet

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Overview

Antigen	Neurologin-1
Immunogen	Purified recombinant fragment of Human NLGN1, corresponding to AA: 45 - 660).
Host/isotype	Rabbit/IgG
Clonality	Recombinant monoclonal
Clone name	IPI-NLGN1.15
RRID	AB_3678712
IPI ID	TAB0013477-013
Specificity	NLGN1; Does not cross-react with other NLGNs.
Species	Human and mouse
Concentration	1 mg/mL
Purification	Expressed in HEK293T cells and affinity purified using Protein A
Storage Buffer	PBS, pH 7.4
Shipping	Shipped on blue ice at +4 °C
Storage	Store at +4C for up to 3 months. For long-term storage, aliquot and store at -20C. Avoid multiple freeze/thaw cycles.

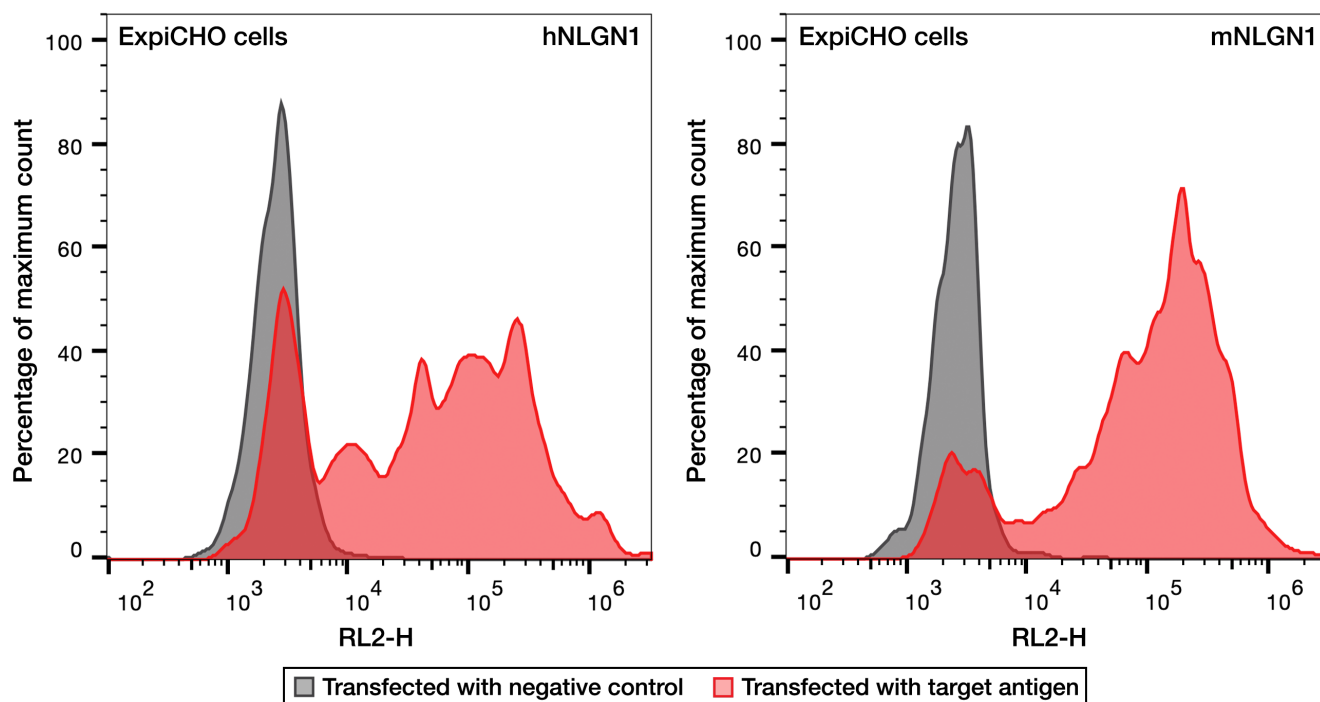
IPI Tested Applications ‡

Applications	Tested Concentration	Result	Reference
Flow Cytometry	0.66-100 µg/mL	Positive	https://doi.org/10.57733/addgene.sy4lh2
SPR	1 µg/mL	Positive	https://doi.org/10.57733/addgene.pv19k3
IF - Binding	1 µg/mL	Positive	https://doi.org/10.57733/addgene.d5q48g
IF - Specificity	1 µg/mL	Positive	https://doi.org/10.57733/addgene.00opmi
IHC	10 µg/mL	Positive	https://doi.org/10.57733/addgene.00j6rk

‡ Not suitable for WB application.

Applications

Cell Display

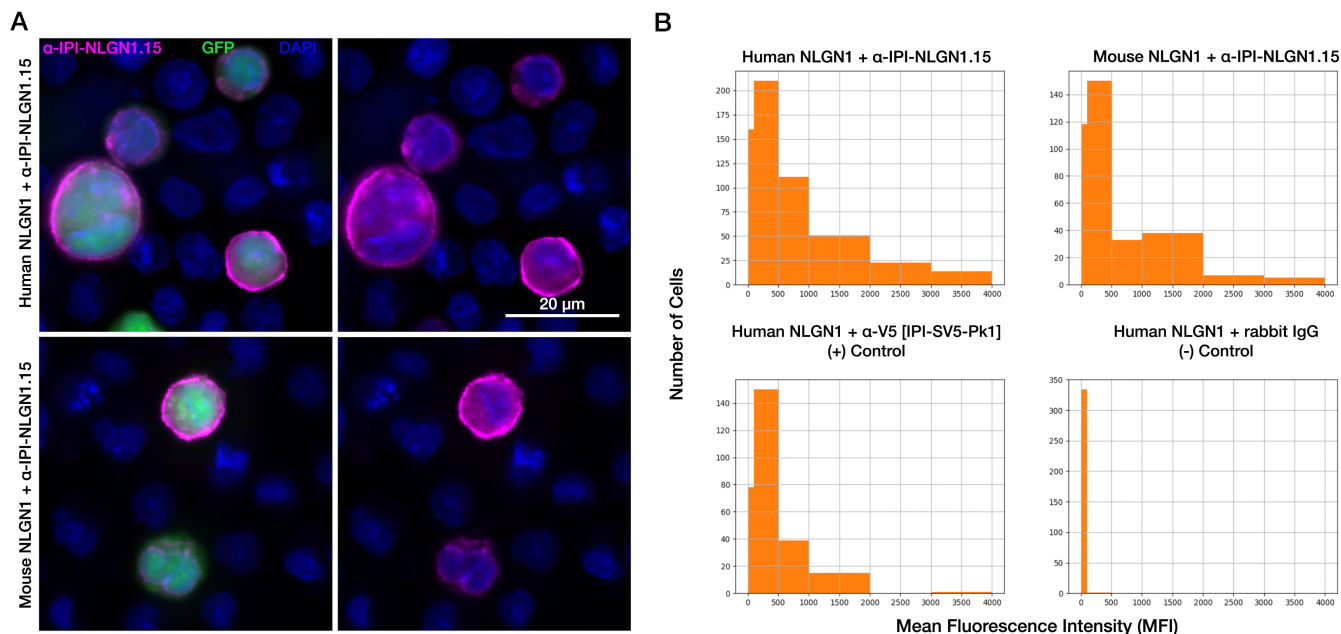


Anti-Neurologin-1 [IPI-NLGN1.15] (Addgene #237815) recognizes human and mouse NLGN1.

Histogram from FACS analysis on ExpiCHO cells transfected with human or mouse NLGN1 (red), or B7H3 negative control (gray). Cells expressing human (left panel) or mouse (right panel) NRXN1b were labeled with Anti-Neurologin-1 [IPI-NLGN1.15] and Alexa Fluor 647 F(ab')₂ goat anti-rabbit IgG Fc fragment (Jackson ImmunoResearch, 111-606-046). Labeled cells were analyzed with an Intellicyt iQue Screener Plus flow cytometer. Histograms were generated and normalized to mode using FlowJo™ v10.10.

doi: <https://doi.org/10.57733/addgene.sy4lh2>

Immunofluorescence (IF) – Binding

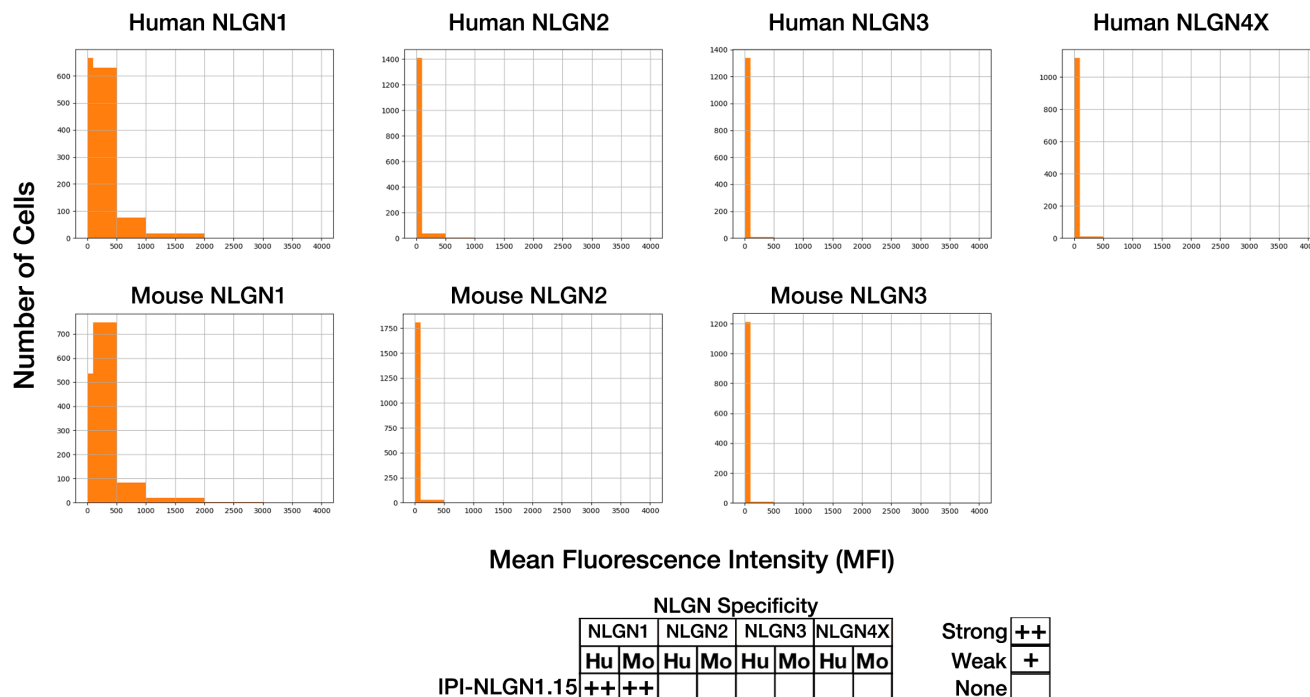


Anti-Neurologin-1 [IPI-NLGN1.15] (Addgene#237815) shows binding to human and mouse NLGN1.

A) Immunofluorescence (IF) of Exp CHO cells transfected with human (top) and mouse (bottom) NLGN1. Widefield images taken at 40X magnification on an EVOS-m7000 microscope and deconvolved using the richardson-lucy algorithm in the FIJI deconlab plugin. Left images show all 3 channels (IPI-NLGN1.15, GFP (transfection control) and DAPI) while the right images only show IPI-NLGN1.15 and DAPI. B) Combined quantification of multiple images of the same transfected cells taken at 10X magnification. GFP-positive cells were identified via the neural network CellPose, then the mean fluorescence intensity (MFI) of the far-red channel for each cell, representing IPI-NLGN1.15 staining, was recorded. Each histogram displays the number of cells with MFIs ranging from below 100 (background fluorescence) to 4095 (saturation). NLGN1.15 staining of human (left) and mouse (right) NLGN1 is shown in the top row, and compared to a positive (left) and negative (right) control in the bottom row. For both panels, NLGN1.15 was used at 1 ug/mL (1:1000 dilution).

doi: <https://doi.org/10.57733/addgene.d5q48g>

Immunofluorescence (IF) - Target Specificity

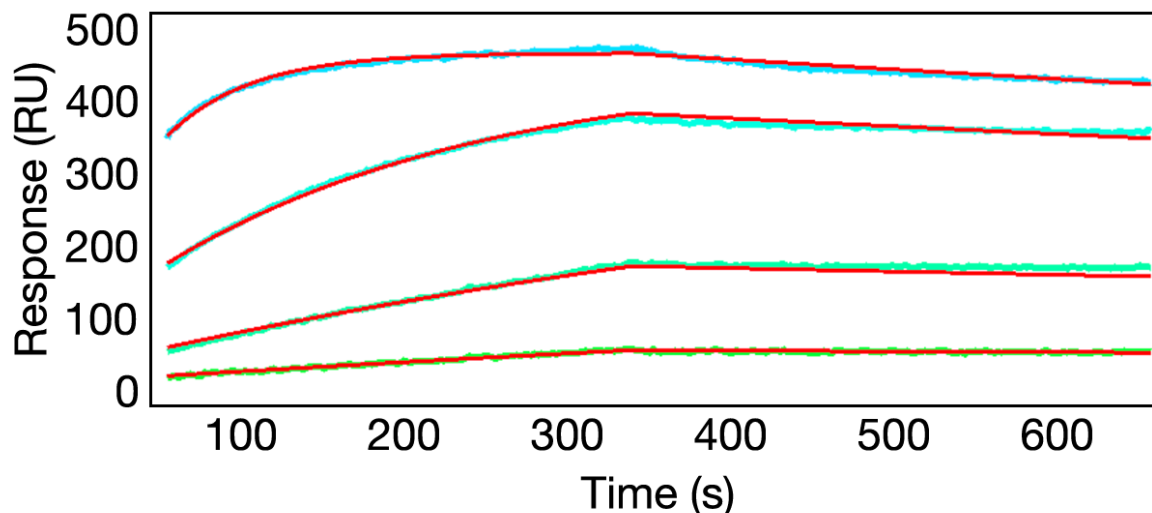


Anti-Neurologin-1 [IPI-NLGN1.15] (Addgene#237815) shows binding to human and mouse NLGN1 only.

Each graph depicts the combined quantification of multiple images of the same transfected cells taken at 10X magnification. GFP-positive cells were identified via the neural network CellPose, then the mean fluorescence intensity (MFI) of the far-red channel for each cell, representing IPI-NLGN1.15 staining, was recorded. Each histogram displays the number of cells with MFIs ranging from below 100 (background fluorescence) to 4095 (saturation). IPI-NLGN1.5 staining of human and mouse variants of each NLGN family member is compared on the top and bottom rows. To test family-wide cross-reactivity, IPI-NLGN1.15 was used at 1 ug/mL (1:1,000 dilution).

doi: <https://doi.org/10.57733/addgene.00opmi>

Surface Plasmon Resonance (SPR)



Kinetic Parameters

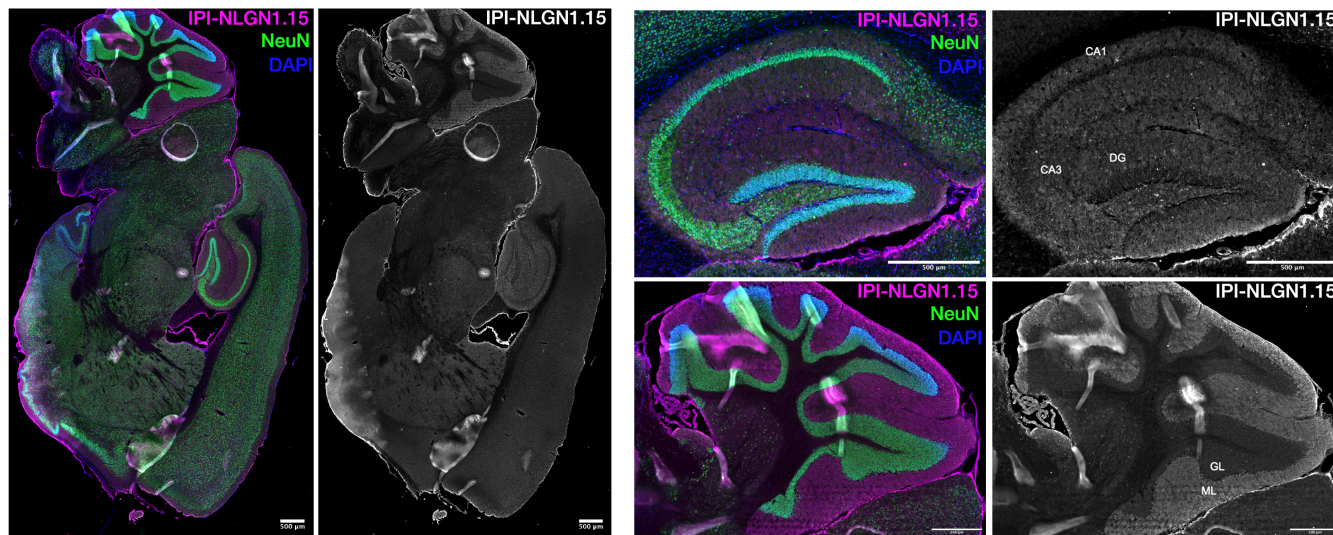
k_a ($M^{-1}s^{-1}$)	k_d (s^{-1})	K_D (M)
1.93×10^5	3.17×10^{-4}	1.65×10^{-9}

Surface Plasmon Resonance (SPR) kinetics analysis of the interaction between Anti-Neurologin-1 [IPI-NLGN1.15] and *H. sapiens* (human) NLGN1.

SPR binding kinetics were measured on a Cathera LSA using HC30M chips (Cathera, cat. #4279) at 25 °C. Goat anti-rabbit IgG Fc (Jackson ImmunoResearch, cat. #111-005-046) was immobilized via amine coupling, and test antibodies were captured using a 96-channel print-head. Antigens (400 nM to five lower concentrations, 2-fold dilutions) were injected in antigen buffer (20 mM HEPES pH 7.4, 150 mM NaCl, 1 mM $CaCl_2$, 1 mM $MgCl_2$, 0.005% Tween 80) with 300 s association/ dissociation phases and acid regeneration. Data (reference/buffer subtracted, smoothed) were globally fit to a 1:1 Langmuir model to derive k_a , k_d , and K_D using Cathera Kinetics software v1.9.2.44.63, and replotted in OriginPro 2023b. Results show a high-affinity and specific binding event between the antibody and antigen.

doi: <https://doi.org/10.57733/addgene.pv19k3>

Immunohistochemistry (IHC)



Anti-Neurologin-1 [IPI-NLGN1.15] (Addgene#237815) shows strongest staining along CA1 and the upper part of the dentate gyrus in the hippocampus and in the molecular layer of the cerebellum, in accordance with extant literature describing the localization of NLGN1 (Allen Brain Institute Adult Mouse Brain Atlas).

Immunohistochemistry (IHC) of a 20 micron cryosection of the brain of an adult (P35) mouse. Widefield images taken at 20X magnification on an Olympus VS200 slide scanner. Left panel shows the whole section, with Anti-NLGN1 [IPI-NLGN1.15] (Addgene #237815) (magenta), neuronal counterstain NeuN (green) and DAPI (blue) merged on the left image while the right image shows only IPI-NLGN1.15. The right panel highlights the hippocampus (top) and cerebellum (bottom), again with IPI-NLGN1.15 (magenta), neuronal counterstain NeuN (green) and DAPI (blue) merged on the left image while the right image shows only shows IPI-NLGN1.15. IPI-NLGN1.15 was used at 10 $\mu\text{g/mL}$ (1:100 dilution).

doi: <https://doi.org/10.57733/addgene.00j6rk>

Antibody Details

Antibody Design and Production

Human variable domains for the heavy and light chain of the FAB fragment used in yeast display were grafted onto the constant CH1, CH2 and CH3 domains of rabbit IgG. The chimera human/rabbit IgG1 construct was recombinantly expressed in HEK293 cells, using pTipi2.1 as the expression vector. The antibody was purified by affinity chromatography using protein A (XYZ) and acid elution, followed by immediate buffer exchange using 1 x PBS buffer pH 7.4.

Sequence information: Heavy chain and light chain amino acid sequences are available upon request after purchase. [Contact us](#) to request.

Antibody Characterization

LC-MS

LC-MS: Intact mass analysis via LC-MS methods allows for confirmation antibody mass, and to identify any product-related variants such as glycosylation. Before conducting intact mass analysis via LC-MS, the antibody was reduced to its heavy chain (HC) and light chain (LC). This process allows for confirmation of the masses corresponding to the amino acid sequences of both chains.

LC-MS Results

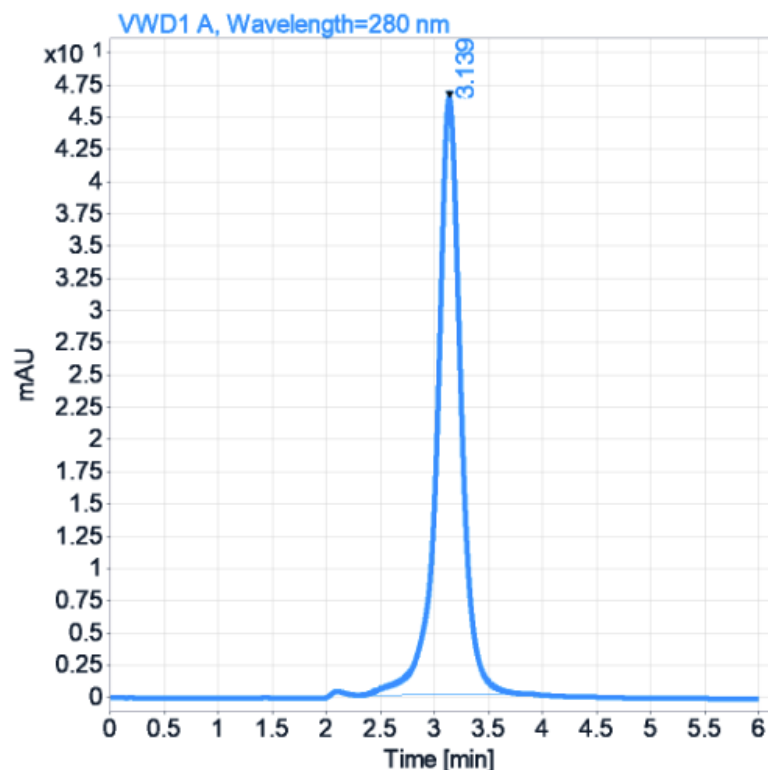
LC Calculated	LC Observed	LC Delta	HC Calculated	HC Observed	HC Delta
22952.39	22951.76	-0.63	49876.26	49881.06	4.80

Heavy Chain (HC) Mass Calculation: The calculated molecular weight (MW) of the HC is derived by adding the mass of the unmodified HC amino acid sequence to the mass of the predominant N-glycan form (G0F), which is 1444.5 Da. This calculation assumes that the intrachain disulfide bonds remain intact. For HCs with an N-terminal glutamine (Q), the mass of Q is converted to pyroglutamic acid (PyroGlu), resulting in a deduction of 17.03 Da from the total mass. Additionally, for HCs with a C-terminal lysine (K), the mass of K (128.09 Da) is also subtracted.

Light Chain (LC) Mass Calculation: The calculated molecular weight (MW) of the LC is obtained from the mass of the unmodified LC amino acid sequence, assuming that the intrachain disulfide bonds are not reduced. For LCs with an N-terminal glutamine (Q), the mass of Q is converted to pyroglutamic acid (PyroGlu), leading to a deduction of 17.03 Da from the total mass. For LCs with a C-terminal lysine (K), the mass of K (128.09 Da) is subtracted as well.

Size Exclusion Chromatography (SEC)

5 μ L of 1 ± 0.2 mg/mL of sample was analyzed with TSKgel® SuperSW mAb HTP (4 μ m) HPLC Column in 1X PBS, pH 7.4 as the mobile phase.



Clone	RT (min)	Width (min)	Area	Height	Area %	Result
IPI-NLGN1.15	3.14	0.23	708.86	46.25	100.00	Pass

Interpretation: SEC-QC pass. Main peak with greater than 90% purity and within retention time of 2.6 to 3.26 mins.

Antigen Details

Immunogen sequence

>HumanNLGN1(AA:45-660):DYKDDDDKGGSGQKLDDVDPLVATNFGKIRGIKKELNNEILGPVIQFLGVPYAAPPTGERRF
QPPEPPSPWSDIRNATQFAPVCPQNIIDGRLPEVMLPVWFTNNLDVVSSYVQDQSEDCLYLNIYVPTEDDIRDSGGPKPV
MVYIHGGSYMEGTGNLYDGSVLASYGNVIVITVNYRLGVLGFLSTGDQAAKGNYGLLDLIQALRWTSNIGFFGGDPLRIT
VFGSGAGGSCVNLLTSLHYSEGNRWSNSTKGLFQRAIAQSGTALSSWAVSFQPAKYARMLATKVGCNVSDTVELVECL
QKKPYKELVDQDIQPARYHIAFGPVIDGDVIPDDPQILMEQGEFLNYDIMLGVNQGEGLKFVENIVDSDDGISASDFDFAV
SNFVDNLYGYPEGKDVLRETIKFMYTDWADRHNPEPTRRKTLLALFTDHQWVAPAVATADLHSNFGSPTYFYAFYHHCQT
DQVPAWADAAHGDEVYPVLGIPMIGPTELPCNFSKNDVMLSAVVMTYWTNFAKTGDPNQVPVQDTKFIHTKPNRFEEV
AWTRYSQKDQLYLHIGLKPRVKEHYRANKVNLWLELVPHLHNLNDGSGGLNDIFEAQKIEWHEGSGHHHHHHHHH

Sequence information:

HUGO:	14291
Uniprot:	Q8N2Q7
Refseq:	NP_055747.1

Structural information:

Topology:	Single-pass type I membrane protein
PDB IDs:	5OJ6; 5OJK
AlphaFold:	AF-Q8N2Q7-F1

Expression profile:

Human Protein Atlas:	ENSG00000169760
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References

1. Z. Anderson, H. Li, T. Riedel, H. Zhu and D. Moshinsky. (2026). Flow Cytometry for Anti-Neurologin-1 [IPI-NLGN1.15]. Addgene. <https://doi.org/10.57733/addgene.sy4lh2>
2. A. Morano, T. Riedel, and D. Moshinsky. (2026). ICC/IF for Anti-Neurologin-1 [IPI-NLGN1.15] in binding assay. Addgene. <https://doi.org/10.57733/addgene.d5q48g>
3. A. Morano, T. Riedel, and D. Moshinsky. (2026). ICC/IF for Anti-Neurologin-1 [IPI-NLGN1.15] in specificity assay. Addgene. <https://doi.org/10.57733/addgene.00opmi>
4. A. Kachare, M. Anuganti, T. Riedel, and D. Moshinsky. (2026). Anti-Neurologin-1 [IPI-NLGN1.15] in Surface Plasmon Resonance (SPR). Addgene. <https://doi.org/10.57733/addgene.pv19k3>
5. A. Morano, T. Riedel, and D. Moshinsky. (2026). Anti-NLGN1 [IPI-NLGN1.15] in immunohistochemistry (IHC) (mouse). Addgene. <https://doi.org/10.57733/addgene.00j6rk>

How to cite this antibody:

Anti-Neurologin-1 [IPI-NLGN1.15] - from Institute for Protein Innovation (IPI) (Addgene #237815; <http://n2t.net/addgene:237815>; RRID: AB_3678712).

If you publish research with this product, please [let us know](#) so that we can cite your paper.