

## Product Datasheet

### [Anti-Neurexin-3-beta \[IPI-NRXN3b.31\]](#)

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#### Overview

Antigen	Neurexin-3-beta
Immunogen	Purified recombinant fragment of Mouse Neurexin-3-beta, corresponding to AA: 36-563.
Host/isotype	Rabbit/IgG
Clonality	Recombinant monoclonal
Clone name	IPI-NRXN3b.31
RRID	AB_3678709
IPI ID	TAB0014864-013-002
Specificity	NRXN3b; Does not recognize other NRXNs
Species reactivity	Human and mouse
Amount	100 µg
Concentration	1 mg/mL
Purification	Expressed in HEK293 cells and affinity purified using Protein A
Storage buffer	PBS, pH 7.4
Shipping	Shipped on blue ice at +4C
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<sup>‡</sup>

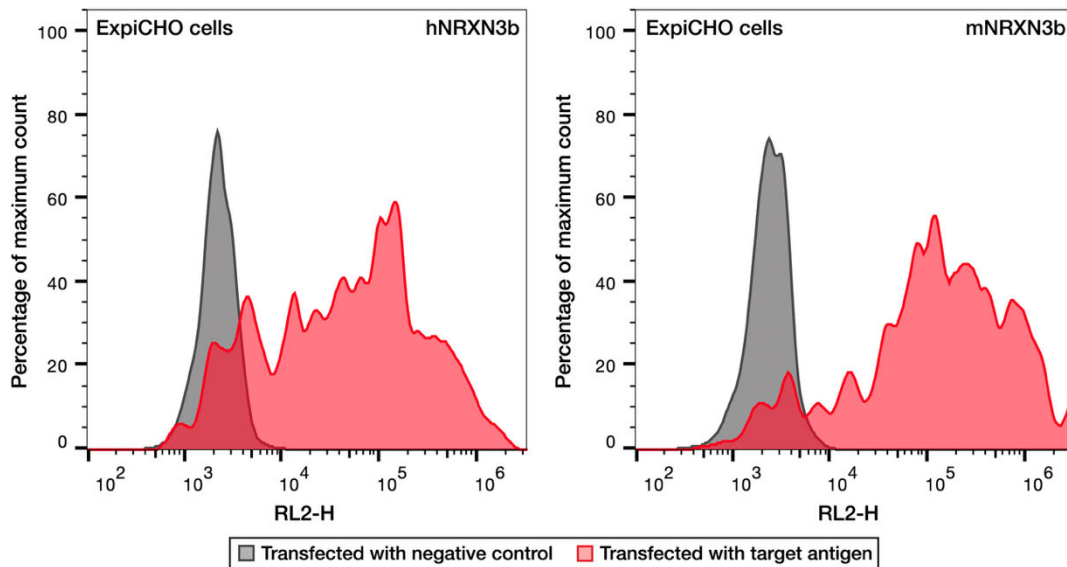
Application	Tested concentration	Result	Reference
Flow	0.66-100 µg/mL	Positive	<a href="https://doi.org/10.57733/addgene.n8bjpl">https://doi.org/10.57733/addgene.n8bjpl</a>
IF – Binding	0.1 µg/mL	Positive	<a href="https://doi.org/10.57733/addgene.nbe80q">https://doi.org/10.57733/addgene.nbe80q</a>
IF – Specificity	0.1 µg/mL	Positive	<a href="https://doi.org/10.57733/addgene.3waajp">https://doi.org/10.57733/addgene.3waajp</a>

<sup>‡</sup> Not suitable for WB application.

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## Applications

### Flow cytometry

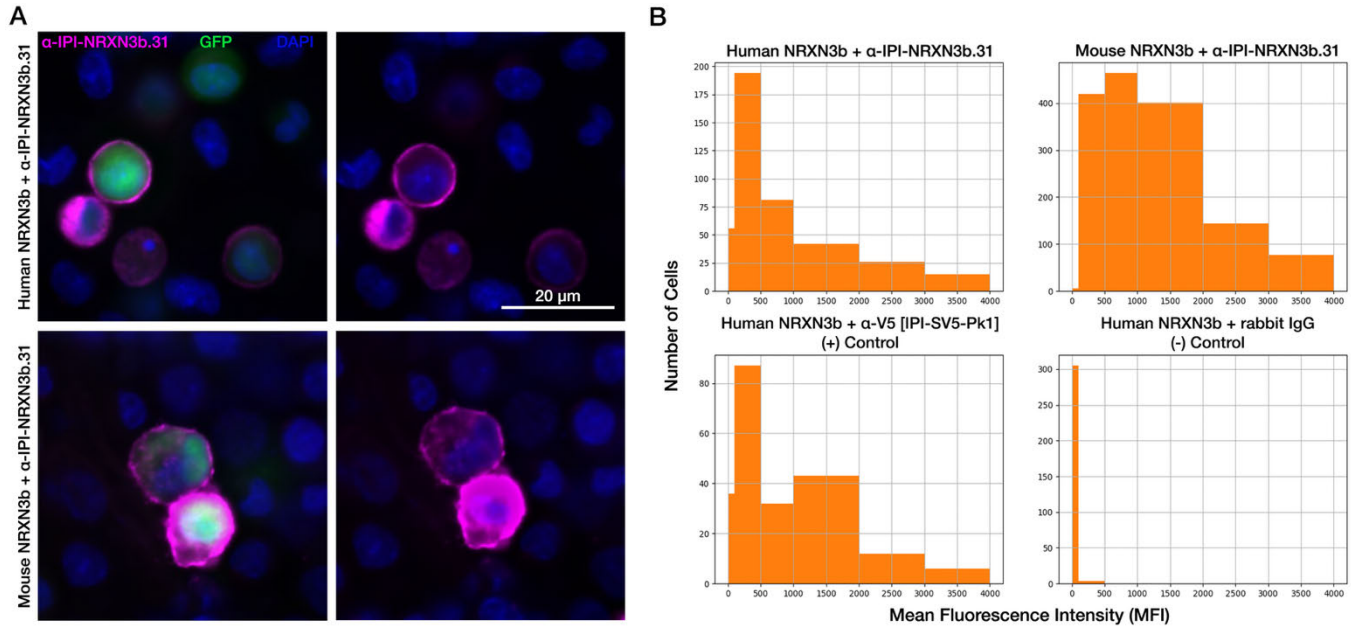


**Anti- Anti-Neurexin-3-beta [IPI-NRXN3b.31] (Addgene #273812) recognizes mouse and human NRXN3b in flow cytometry.** Histogram from FACS analysis on ExpiCHO cells transfected with human or mouse NRXN3b (red), or B7H3 negative control (gray). Cells expressing human (left panel) or mouse (right panel) NRXN3b were labeled with Anti-Neurexin-3-beta [IPI-NRXN3b.31] and Alexa Fluor 647 F(ab')<sub>2</sub> 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.n8bjpl>

**EC<sub>50</sub> (data not shown):** A fourteen-point titration of antibody concentrations, ranging from 660 nM (0.1 mg/mL) to 4.42 pM with a 1:2.5 dilution factor, against human and mouse NRXN3b showed reactivity towards human and mouse NRXN3b with observed EC<sub>50</sub> values of 0.07 nM and 0.08 nM for human and mouse NRXN3b, respectively.

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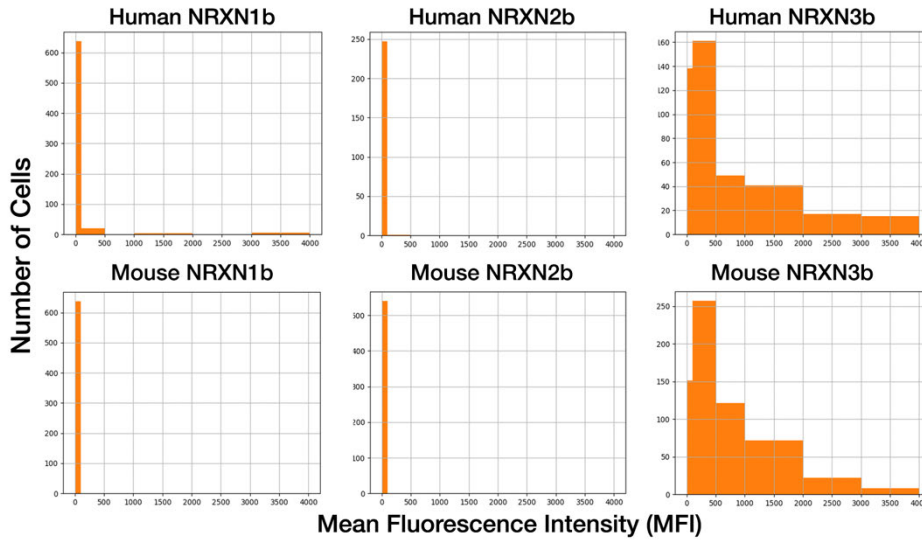
**Immunofluorescence (IF) – Species Reactivity**



**Anti-Neurexin-3-beta [IPI-NRXN3b.31] (Addgene #273812) recognizes mouse and human NRXN1b in immunofluorescence.** A) Immunofluorescence (IF) of ExpiCHO cells transfected with human (top) and mouse (bottom) NRXN3b. 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-NRXN3b.31, GFP (transfection control) and DAPI) while the right images only show IPI-NRXN3b.31 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-NRXN3b.31 staining, was recorded. Each histogram displays the number of cells with MFIs ranging from below 100 (background fluorescence) to 4095 (saturation). NRXN3b.b31 staining of human (left) and mouse (right) NRXN3b is shown in the top row, and compared to a positive (left) and negative (right) control in the bottom row. For both panels, IPI-NRXN3b.31 was used at 0.1  $\mu$ g/mL (1:10,000 dilution). doi:

<https://doi.org/10.57733/addgene.nbe80q>

**Immunofluorescence (IF) – Target Specificity**



		NRXN Specificity							
		NRXN1		NRXN2		NRXN3		Strong	++
		Hu	Mo	Hu	Mo	Hu	Mo	Weak	+
IPI-NRXN3b.31						++	++	None	

**Anti-Neurexin-3-beta [IPI-NRXN3b.31] (Addgene #273812) recognizes mouse and human NRXN3b in immunofluorescence.** 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-NRXN3b.31 staining, was recorded. Each histogram displays the number of cells with MFIs ranging from below 100 (background fluorescence) to 4095 (saturation). IPI-NRXN3b.31 staining of human and mouse variants of each NRXNb family member is compared on the top and bottom rows. To test family-wide cross-reactivity, IPI-NRXN3b.31 was used at 0.1 ug/mL (1:10,000 dilution). doi: <https://doi.org/10.57733/addgene.3waajp>

## **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 Expi 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:** 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.

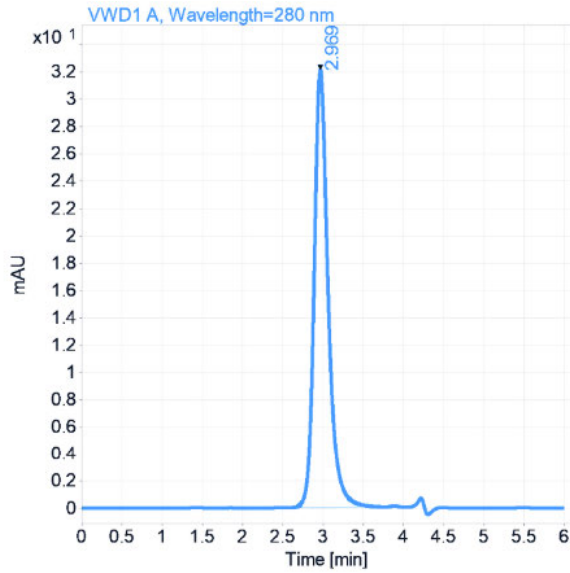
	<b>HC MW (Da) <i>Calculated</i></b>	<b>HC MW (Da) <i>Observed</i></b>	<b>HC MW (Da) <i>Delta</i></b>	<b>LC MW (Da) <i>Calculated</i></b>	<b>LC MW (Da) <i>Observed</i></b>	<b>LC MW (Da) <i>Delta</i></b>
<b>IPI-NRXN3b.31</b>	49637.46	49639.20	1.74	23817.44	23817.27	-0.17

**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.

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**Size Exclusion Chromatography (SEC):** SEC is a protein purification technique that separates molecules based on size.



	RT (min)	Width (min)	Area	Height	Area %	Result
<b>IPI-NRXN3b.31</b>	2.969	0.1820	388.0531	32.1009	100	Pass

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## **Antigen Details**

### **Immunogen design:**

cDNA of Human Neurexin-3-beta with N-terminal FLAG- and C-terminal His- and Avi-tags was produced in transiently transfected Expi293F cells and purified from culture supernatant by Ni-NTA affinity purification followed by size-exclusion chromatography.

### **Immunogen sequences:**

>Human NRXN3b (AA: 36-563)

DYKDDDDKGGSSNVASSSSTSSSPGSHSQHEHHFHGSKHHSVPISIYRSPVSLRGGHAGATYIFGKSG  
GLILYTWPANDRPSTRSDRLAVGFSTTVKDGILVRIDSAPGLGDFLQLHIEQGKIGVFNIGTVDISIKEERT  
PVNDGKYHVRFTRNGGNATLQVDNWPVNEHYPTGRQLTIFNTQAQIAIGGKDKGRLFQQQLSGLYYD  
GLKVLNMAAENPNIKINGSVRLVGEVPSILGTTQTTSMPPEMSTTVMETTTTMTATTTTRKNRSTASIQPT  
SDDLVSSEAECSSDDEDFVECEPSTGGELVIPLLVEDPLATPPIATRAPSITLPPTFRPLLTIIETTKDSLMTS  
EAGLPCLSDQGSDDGDDGLVISGYGSGETFDSNLPPTDDEDFYTTTFLVTDKSLSTSIFEGGYKAHAPK  
WESKDFRPNKVSETSRTTTTLSPELIRFTASSSSGMVPKLPAGKMNNRDLKPQPDIVLLPLPTAYELDST  
KLKSPITSPMFRNVPTANPTEPGIRRVPGASEVIRESSSTTGGGGLNDIFEAQKIEWHEGSGHHHHHHH  
H

### **Sequence information:**

HUGO: 8010  
Uniprot: Q9HDB5  
Refseq: NM\_001272020.2

### **Structural information:**

Topology: Single-pass type I membrane protein  
PDB IDs: -  
AlphaFold: AF-Q9HDB5-F1

### **Expression profiles:**

Human Protein Atlas ENSG00000021645

## **References**

1. Z. Anderson, H. Li, T. Riedel, H. Zhu and D. Moshinsky. (2025). Flow Cytometry for Anti-Neurexin-3-beta [IPI-NRXN3b.31]. Addgene. <https://doi.org/10.57733/addgene.n8bjpl>
2. A. Morano, T. Riedel, and D. Moshinsky. (2025). ICC/IF for Anti-Neurexin-3-beta [IPI-NRXN3b.31] in binding assay. Addgene. <https://doi.org/10.57733/addgene.nbe80q>
3. A. Morano, T. Riedel, and D. Moshinsky. (2025). ICC/IF for Anti-Neurexin-3-beta [IPI-NRXN3b.31] in specificity assay. Addgene. <https://doi.org/10.57733/addgene.3waajp>

## **How to cite this antibody:**

Anti-Neurexin-3-beta [IPI-NRXN3b.31] - from Institute for Protein Innovation (IPI) (Addgene #237812; <http://n2t.net/addgene:237812>; RRID: AB\_3678709).

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