Product Datasheet

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Overview

Antigen	NRXN3a
Immunogen	Purified recombinant fragment of mouse NRXN3a, corresponding to AA: (27-440).
Host/isotype	Rabbit/IgG
Clonality	Recombinant monoclonal
Clone name	IPI-mNRXN3a.67
RRID	AB_3678700
IPI ID	TAB0014903-013
Specificity	NRXN3a; Does not recognize other NRXNs
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	0.66-100 µg/mL	Positive	https://doi.org/10.57733/addgene.vcjy0w
IF - Binding	1 µg/mL	Positive	https://doi.org/10.57733/addgene.s1453n
IF - Specificity	1 µg/mL	Positive	https://doi.org/10.57733/addgene.ama6lk
IHC (cerebellum)	10 µg/mL	Positive	https://doi.org/10.57733/addgene.xlb09s
IHC (hippocampus)	10 µg/mL	Positive	https://doi.org/10.57733/addgene.3vufg5

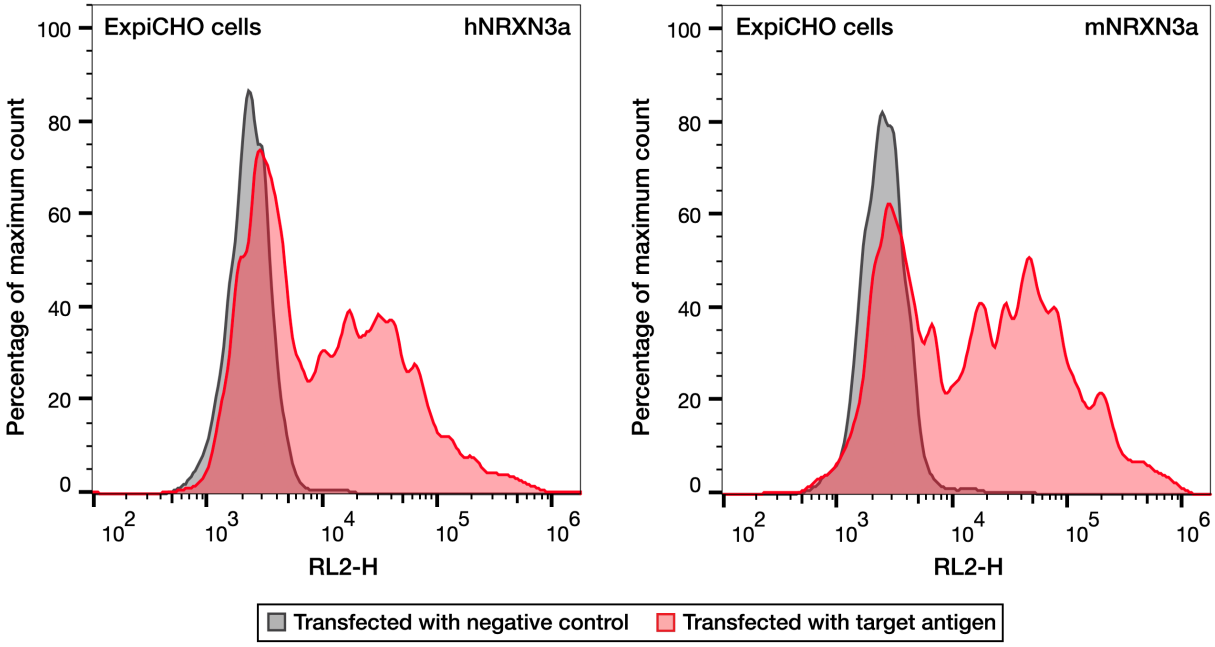
‡ Not suitable for WB application.

Community Data ‡

Application	Lab	Reference
IHC	Seth Grant, Ph.D., University of Edinburgh	https://doi.org/10.57733/addgene.jvibne

Applications

Cell Display

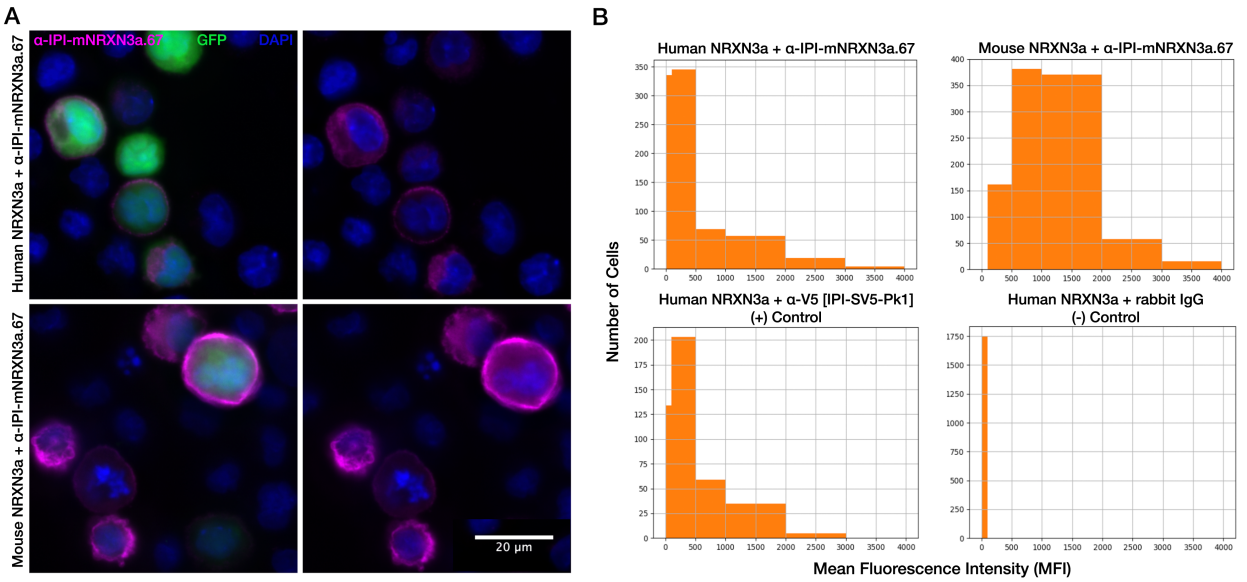


Anti-Neurexin-3-alpha [IPI-mNRXN3a.67] (Addgene #237694) recognizes human and mouse Neurexin-3-alpha.

Histogram from FACS analysis on ExpiCHO cells transfected with human or mouse Neurexin-3-alpha (red), or B7H3 negative control (gray). Cells expressing human (left panel) or mouse (right panel) Neurexin-3-alpha were labeled with Anti-Neurexin-3-alpha [IPI-mNRXN3a.67] 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.vcjy0w

Immunofluorescence (IF) – Binding

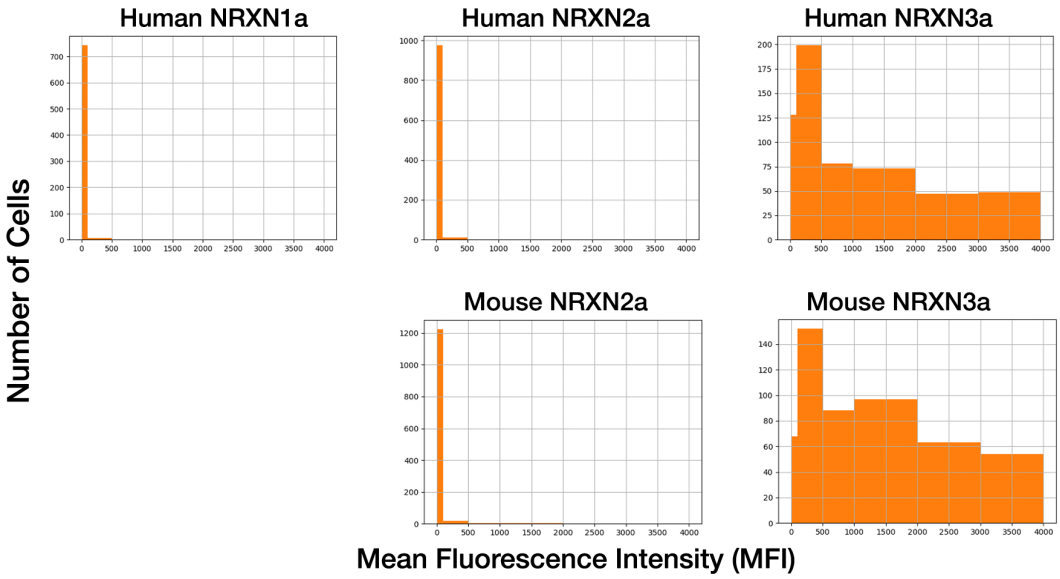


Anti-Neurexin-3-alpha [IPI-mNRXN3a.67] (Addgene#237694) shows binding to human and mouse NRXN3a.

A) Immunofluorescence (IF) of ExpiCHO cells transfected with human (top) and mouse (bottom) NRXN3a. 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-mNRXN3a.67, GFP (transfection control) and DAPI) while the right images only show IPI-mNRXN3a.67 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-mNRXN3a.67 staining, was recorded. Each histogram displays the number of cells with MFIs ranging from below 100 (background fluorescence) to 4095 (saturation). IPI-mNRXN3a.67 staining of human (left) and mouse (right) NRXN3a is shown in the top row, and compared to a positive (left) and negative (right) control in the bottom row. For both panels, IPI-mNRXN3a.67 was used at 1 ug/mL (1:1000 dilution).

doi: https://doi.org/10.57733/addgene.s1453n

Immunofluorescence (IF) - Target Specificity



NRXN Specificity

	NRXN1		NRXN2		NRXN3	
	Hu	Mo	Hu	Mo	Hu	Mo
IPI-mNRXN3a.67					++	++

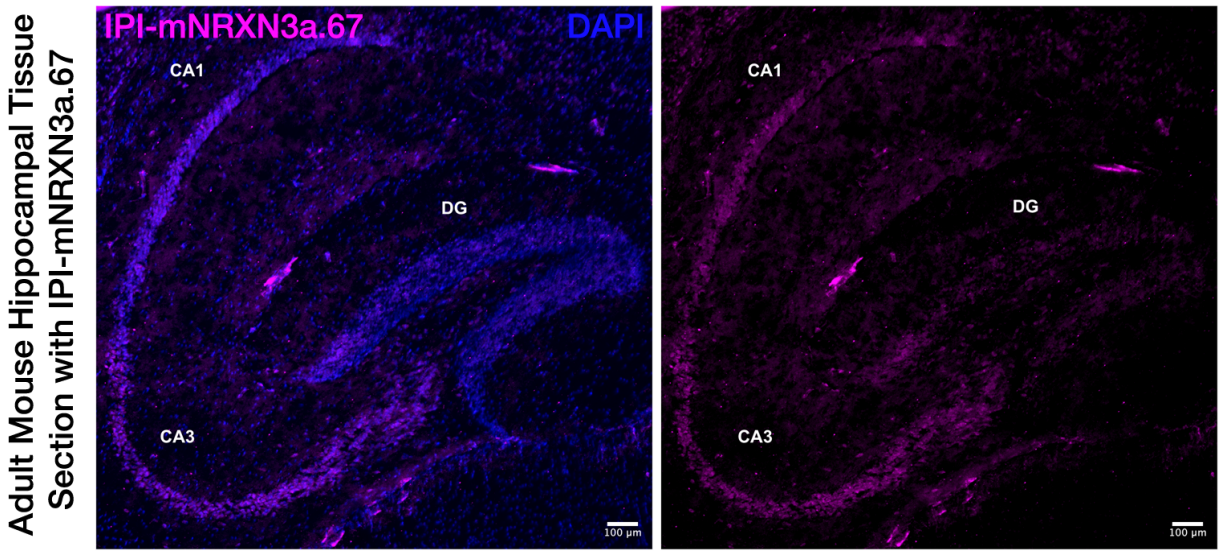
Strong	++
Weak	+
None	

Anti-Neurexin-3-alpha [IPI-mNRXN3a.67] (Addgene#237694) shows binding to human and mouse NRXN3a 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-mNRXN3a.67 staining, was recorded. Each histogram displays the number of cells with MFIs ranging from below 100 (background fluorescence) to 4095 (saturation) .IPI-mNRXN3a.67staining of human and mouse variants of each NRXNa family member is compared on the top and bottom rows. To test family-wide cross-reactivity, IPI-mNRXN3a.67 was used at 1 ug/mL (1:1,000 dilution).

doi: https://doi.org/10.57733/addgene.ama6lk

Immunohistochemistry (IHC)

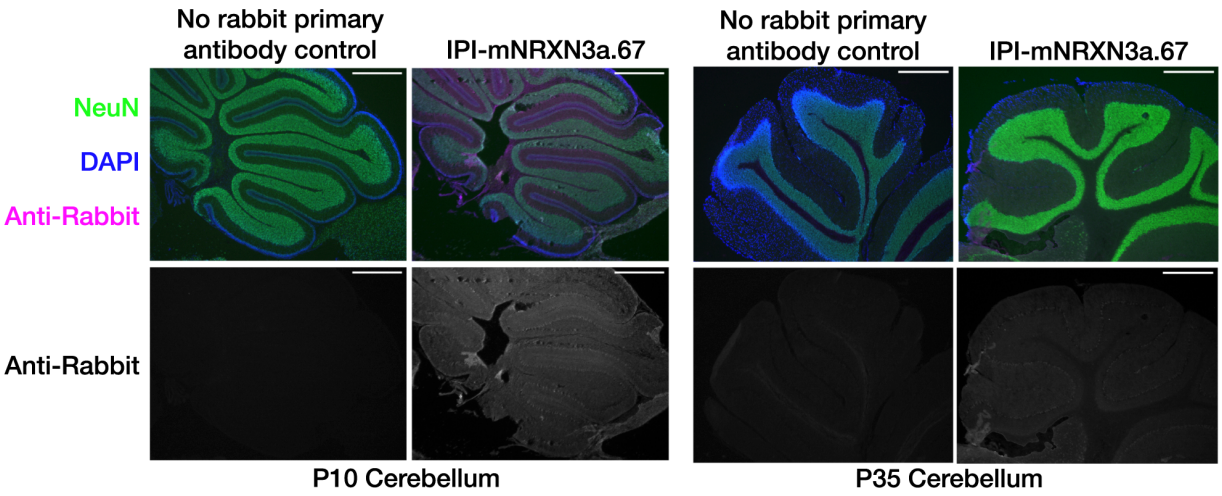


Immunohistochemistry (IHC) for Anti-Neurexin-3-alpha [IPI-mNRXN3a.67]

Immunohistochemistry (IHC) of a 20 micron cryosection of the hippocampal section of an adult (P35) mouse brain. Widefield images taken at 10X magnification on an EVOS-m7000 microscope. Left image shows IPI-mNRXN3a.67 (magenta) and DAPI (blue) and the right image only shows IPI-mNRXN3a.67. IPI-mNRXN3a.67 was used at 10 ug/mL (1:100 dilution). This antibody shows strongest staining in the CA1 and CA3 regions of the hippocampus, aligning with expression data detailed in the Allen Brain Atlas.

doi: https://doi.org/10.57733/addgene.3vufg5

Immunohistochemistry (IHC)



Anti-Neurexin-3-alpha [IPI-mNRXN3a.67] in immunohistochemistry (IHC) (Mouse)

Immunohistochemistry (IHC) of 20 micron cryosections of the cerebellum of a Postnatal Day 10 (top) or Postnatal Day 35 (bottom) wild type C57BL/6J mouse brain. Widefield images were taken at 4X magnification on an EVOS-m7000 microscope. Merged images show signal from IPI-mNRXN3a.67 (magenta), DAPI (blue), and anti-NeuN (green)(Millipore MAB377), and the grayscale image shows IPI-mNRXN3a.67 or goat anti-rabbit signal from the secondary antibody. IPI-mNRXN3a.67 was used at 10 ug/mL (1:100 dilution).

This antibody shows staining in the P10 and adult cerebellum above background levels, but signal to noise is low and the expected localization pattern of Neurexin3 protein by immunohistochemistry is unknown. Further validation in genetic knock-outs is recommended to confirm specificity of the signal.

P10: Strong signal in molecular layer of cerebellum; high background. Purkinje cell bodies are labeled. P35: Signal in molecular layer of the cerebellum is low; no clear labeling of neuropil. Purkinje cell bodies are faintly labeled but unsure if this reflects true signal. Other brain regions show diffuse, nuclear signal, interpreted to be non-specific labeling.

doi: https://doi.org/10.57733/addgene.xlb09s

Antibody Details

Antibody Design and Production

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

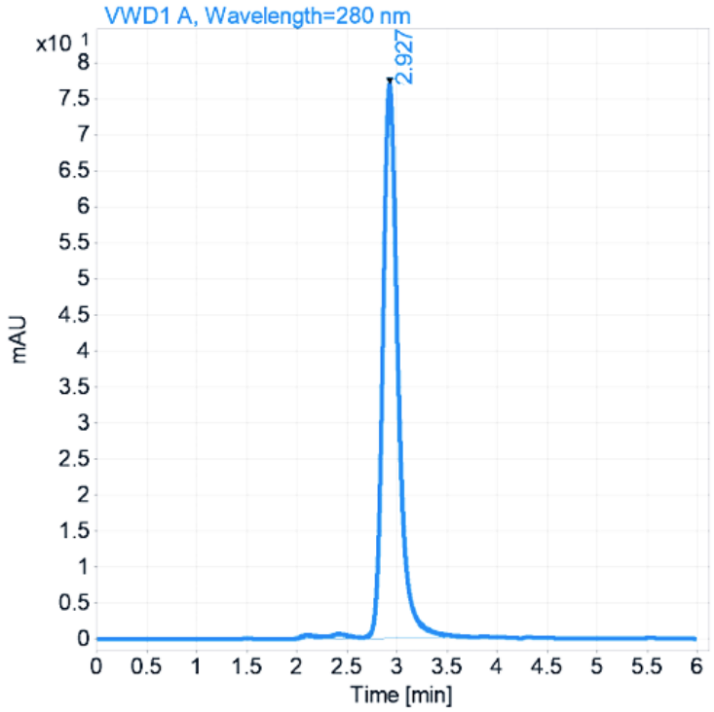
LC Calculated	LC Observed	LC Delta	HC Calculated	HC Observed	HC Delta
22944.51	22943.98	-0.53	49628.02	49633.00	4.98

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



Clone	RT (min)	Width (min)	Area	Height	Area %	Result
IPI-mNRXN3a.67	2.93	0.16	823.94	76.94	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

>MouseNeurexin-3-alpha(AA:27-440):DYKDDDDKGSGLEFMGLPNQWARYLRWDASTRSDLSFQFKTNVST
GLLLYLDDGGVCDFLCLSLVDGRVQLRFSMDCAETTVLSNKQVNDSSWHFLMVSRDRVRTGLVIDGEGQSGE
LRPQRPYMDVVSDLFLGGVPADIRPSALTLDGVQSMPGFKGLMLDLKYGNSEPRLLGSQSVQLEAEGPCGER
PCENGGICFLLDGHPTCDCSTTGYGGTLCSEDVSQGPGLSHLMMSEQAREENVATFRGSEYLCYDLSQNPIQ
SSSDEITLSFKTWQRNGLILHTGKSADYVNLALKDGAVSLVINLGSGAFEAIVEPVNGKFNDNAWHDVKVTRNLR
QVTISVDGILTTTGYTQEDYTMLGSDDFFYVGGSPSTADLPGSPVSNNFMGCLKEVVYKNNDIRLELSRLARIGD
TKMKIYGEVVFKCGSGGLNDIFEAQKIEWHEGSGHHHHHHHH

Sequence information:

HUGO:	MGI:1096389
Uniprot:	Q6P9K9
Refseq:	NP_001185516.2

Structural information:

Topology:	Single-pass type I membrane protein
PDB IDs:	-
Alphafold:	AF-Q6P9K9-F1

Expression profile:

Human Protein Atlas:	ENSG00000021645-NRXN3

References

1. Z. Anderson, H. Li, T. Riedel, H. Zhu and D. Moshinsky. (2026). Flow Cytometry for Anti-Neurexin-3-alpha [IPI-mNRXN3a.67]. Addgene. https://doi.org/10.57733/addgene.vcjy0w
2. A. Morano, T. Riedel, and D. Moshinsky. (2026). ICC/IF for Anti-Neurexin-3-alpha [IPI-mNRXN3a.67] in binding assay. Addgene. https://doi.org/10.57733/addgene.s1453n
3. A. Morano, T. Riedel, and D. Moshinsky. (2026). ICC/IF for Anti-Neurexin-3-alpha [IPI-mNRXN3a.67] in specificity assay. Addgene. https://doi.org/10.57733/addgene.ama6lk
4. A. Morano, T. Riedel, and D. Moshinsky. (2026). Anti-Neurexin-3-alpha [IPI-mNRXN3a.67] in immunohistochemistry (IHC) (Mouse). Addgene. https://doi.org/10.57733/addgene.3vufg5
5. C. Santiago, T. Riedel, and D. Moshinsky. (2026). Anti-Neurexin-3-alpha [IPI-mNRXN3a.67] in immunohistochemistry (IHC) (Mouse). Addgene. https://doi.org/10.57733/addgene.xlb09s
6. T. Wong and S. Grant. (2026). Anti-Neurexin-3-alpha [IPI-mNRXN3a.67] in immunohistochemistry (IHC) (Mouse). Addgene. https://doi.org/10.57733/addgene.jvibne

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