

Product Datasheet

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Overview

Antigen	UNC5A
Immunogen	Purified recombinant fragment of Mouse UNC5A, corresponding to AA: 37 - 355.
Host/isotype	Rabbit/IgG
Clonality	Recombinant monoclonal
Clone name	IPI-mUNC5A.50
RRID	AB_3753015
IPI ID	TAB0017086-013
Specificity	UNC5A; Does not cross-react with other UNC5s.
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.

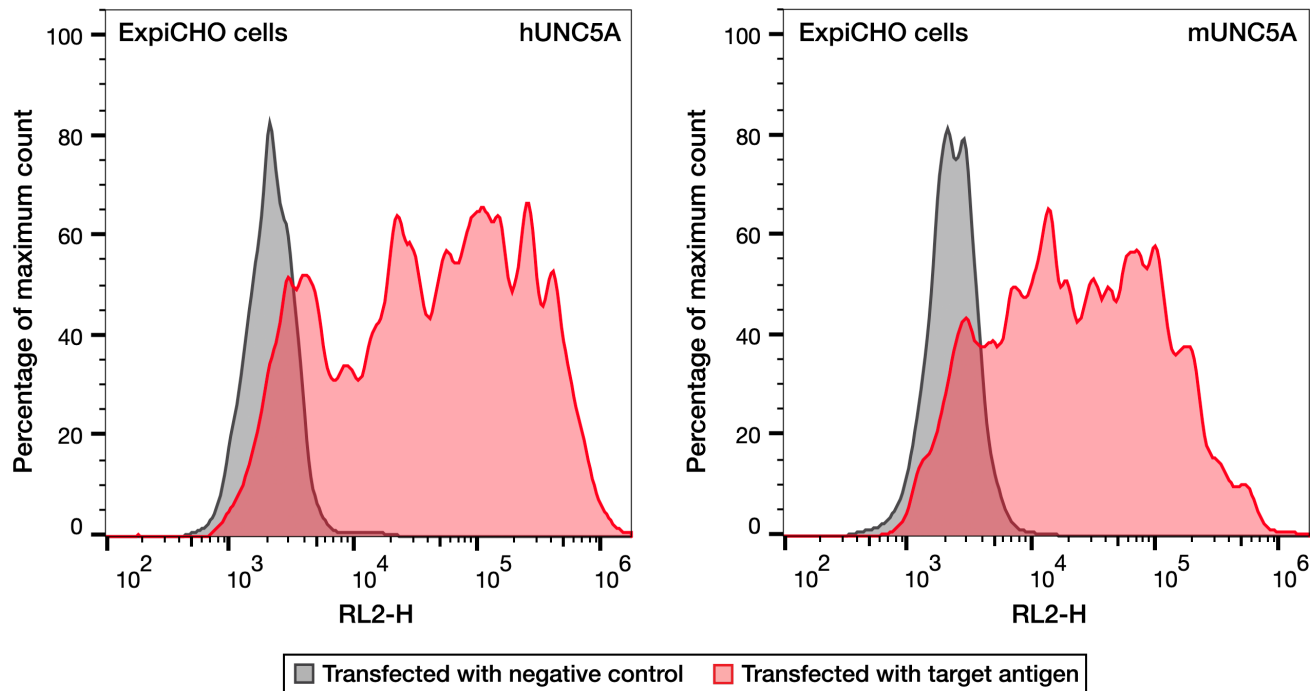
IPI Tested Applications ‡

Applications	Tested Concentration	Result	Reference
Flow Cytometry	0.66-100 µg/mL	Positive	https://doi.org/10.57733/addgene.juu2z1
IF- Binding	1 µg/mL	Positive	https://doi.org/10.57733/addgene.oo6l4n
IF - Specificity	1 µg/mL	Positive	https://doi.org/10.57733/addgene.1tmm22
IHC	5 µg/mL	Positive	https://doi.org/10.57733/addgene.6u65gp

‡ Not suitable for WB application.

Applications

Cell Display



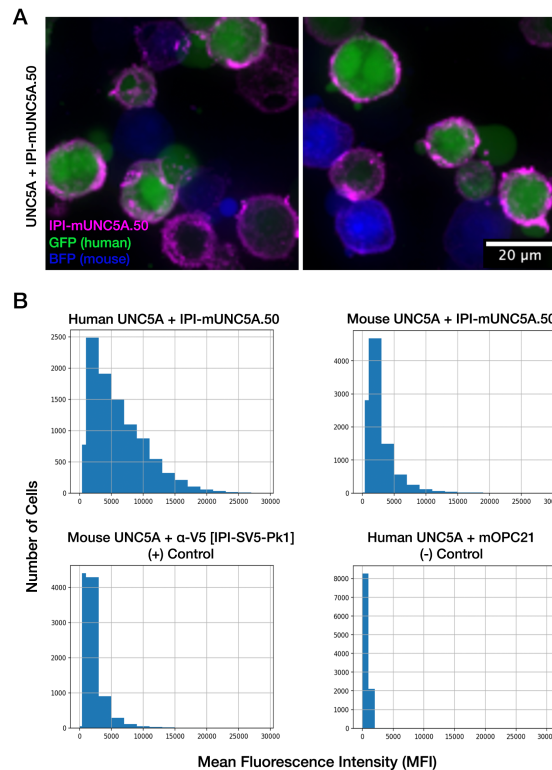
Anti-UNC5A [IPI-mUNC5A.50] (Addgene #260972) recognizes human and mouse UNC5A.

Histogram from FACS analysis on ExpiCHO cells transfected with human or mouse UNC5A (red), or B7H3 negative control (gray). Cells expressing human (left panel) or mouse (right panel) UNC5A were labeled with Anti-UNC5A [IPI-mUNC5A.50] 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.juu2z1>

EC₅₀ (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 UNC5A showed reactivity towards human and mouse UNC5A with observed EC₅₀ values of 0.3 nM and 0.28 nM for human and mouse, respectively.

Immunofluorescence (IF) – Binding

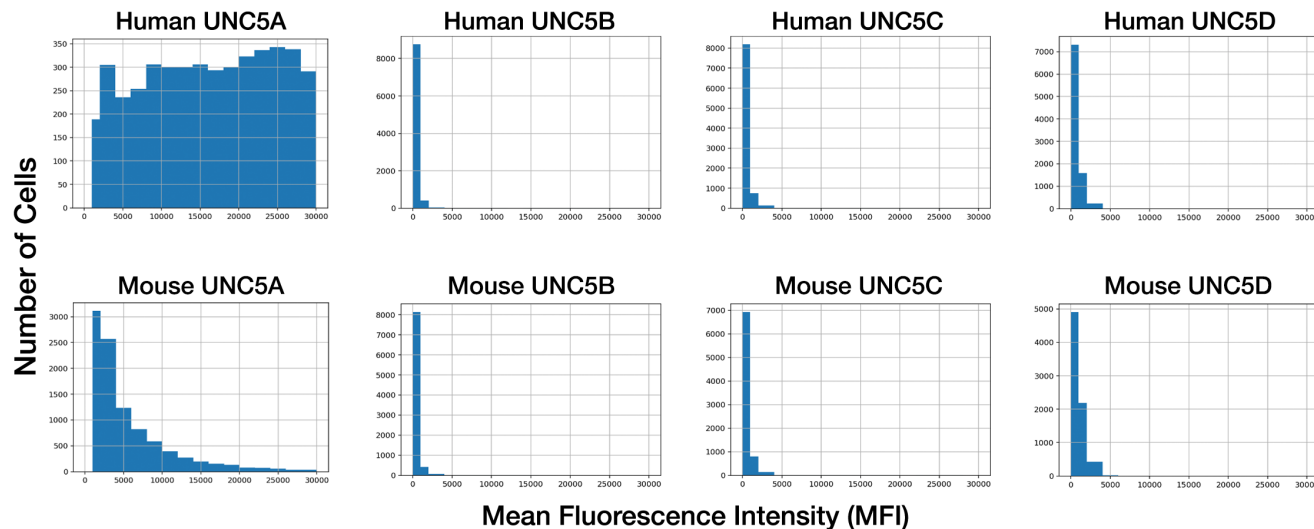


Anti-UNC5A [IPI-mUNC5A.50] (Addgene#260972) shows binding to human and mouse UNC5A.

A) Immunofluorescence (IF) of ExpiCHO cells transfected with human (Green/GFP) and mouse (Blue/BFP) UNC5A stained with IPI-mUNC5A.50 (magenta). Confocal images taken at 40X magnification on the ImageXpress confocal HT.ai microscope. Scale bar = 20 μ m. B) Combined quantification of multiple images of the same transfected cells taken at 10X magnification. GFP- or BFP-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-mUNC5A.50 staining, was recorded. Each histogram displays the number of cells with MFIs ranging from below 100 (background fluorescence) to 25000. IPI-mUNC5A.50 staining of human and mouse UNC5A is shown in the top row, and compared to a positive (left) and negative (right) control in the bottom row. For both panels, IPI-mUNC5A.50 was used at 1 μ g/mL (1:1000 dilution).

doi: <https://doi.org/10.57733/addgene.oo6l4n>

Immunofluorescence (IF) - Target Specificity



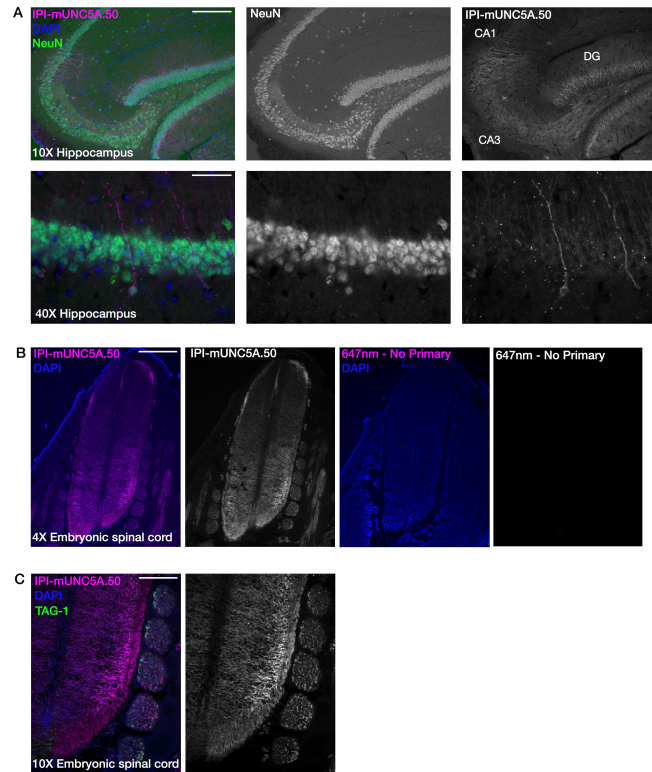
		Family Crossreactivity								Strong Weak None	
		UNC5A		UNC5B		UNC5C		UNC5D			
		Hu	Mo	Hu	Mo	Hu	Mo	Hu	Mo		
IPI-mUNC5A.50	++	++									

Anti-UNC5A [IPI-mUNC5A.50] (Addgene#260972) shows significant binding only to human and mouse UNC5A.

Each graph depicts the combined quantification of multiple images of the same transfected cells taken at 10X magnification. GFP or BFP-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-mUNC5A.50 staining, was recorded. Each histogram displays the number of cells with MFIs ranging from below 500 (background fluorescence) to 25000. IPI-mUNC5A.50 staining of human and mouse variants of UNC5 family members is compared on the top and bottom rows. To test family-wide cross-reactivity, IPI-mUNC5A.50 was used at 1 ug/mL (1:1000 dilution).

doi: <https://doi.org/10.57733/addgene.1tmm22>

Immunohistochemistry (IHC)



Immunohistochemistry (IHC) for Anti-UNC5A [IPI-mUNC5A.50]

a) Immunohistochemistry (IHC) of 20 micron cryosections of the hippocampus of Postnatal Day 49 wild type C57BL/6J mouse brains. Widefield images were taken at 10X or 40X magnification on an EVOS-m7000 microscope. Merged images show signal from IPI-mUNC5A.50 (magenta), DAPI (blue), and anti-NeuN (green) (Millipore MAB377). Grayscale images show signal from either anti-NeuN or IPI-mUNC5A.50. b) Immunohistochemistry (IHC) of 20 micron cryosections of the spinal cord of Embryonic Day 13 wild type C57BL/6J mouse embryos. Widefield images were taken at 4X magnification on an EVOS-m7000 microscope. Merged images show signal from IPI-mUNC5A.50 (magenta) and DAPI (blue) or the no primary negative control (magenta) and DAPI (blue). Grayscale images show signal from either IPI-mUNC5A.50 or the 647/anti-rabbit secondary antibody channel in the absence of primary antibody (negative control). c) 10X magnification image of the IPI-mUNC5A.50-stained tissue section in b); merged image shows signal from anti-Contactin2 (green) (DSHB 4D7/TAG1)(Positive control antibody), DAPI (blue), and IPI-mUNC5a.50 (magenta). Grayscale image shows signal from IPI-mUNC5a.50. Scale bars = 500 μ m for 4X images (b), 200 μ m for 10X images (a) top row, c), 50 μ m for 40X Images (a), bottom row). IPI-mUNC5A.50 was used at 5 μ g/mL (1:200 dilution).

doi: <https://doi.org/10.57733/addgene.6u65gp>

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
23817.44	23817.25	-0.19	50161.73	50167.70	5.97

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 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-mUNC5A.50	2.88	0.17	1048.24	100.80	99.24	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 : Mouse UNC5A (AA: 37 - 355):

GANPDLLPHFLVEPEDVYIVKNKPVLLVCKAVPATQIFFKCNGEWVRQVDHVIERSTDGSSGLPTMEVRINVSRRQV
EKVFGLEEYWCQCVAWSSSGTTKSQKAYIRIAYLRKNFEQEPLAKEVSLEQGIVLPCRPPGIPPAEVEWLRNEDLV
DPSLDPNVYITREHSLVVRQARLADTANYTCVAKNIVARRRSASAAVIVYVNGGWSTWTEWSVCSASCGRGWQKR
SRSCNPNAPLNGGAFCEGQNVQKTACATLCPVDGSWSPWSKWSACGLDCTHWRSRECS DPAPRNGGEECRGAD
LDTRNCTSDLCLHTSSGGGGGSGGGGSGGLNDIFEAQKIEWHEGSGHHHHHHHHH

Sequence information:

HUGO: MGI: 894682
Uniprot: Q8K1S4
Refseq: NM_153131.5

Structural information:

Topology: Single-pass type I membrane protein
PDB IDs: 4V2A
AlphaFold: AF-Q8K1S4-F1

Expression profile:

Human Protein Atlas: ENSG00000113763

References

1. Z. Anderson, H. Li, T. Riedel, H. Zhu and D. Moshinsky. (2026). Flow for Anti-UNC5A [IPI-mUNC5A.50]. Addgene. <https://doi.org/10.57733/addgene.juu2z1>
2. A. Morano, T. Riedel, and D. Moshinsky. (2026). ICC for Anti-UNC5A [IPI-mUNC5A.50]. Addgene. <https://doi.org/10.57733/addgene.oo6l4n>
3. A. Morano, T. Riedel, and D. Moshinsky. (2026). ICC for Anti-UNC5A [IPI-mUNC5A.50]. Addgene. <https://doi.org/10.57733/addgene.1tmm22>
4. P. De Guzman, C. Santiago, and D. Moshinsky. (2026). IHC for Anti-UNC5A [IPI-mUNC5A.50]. Addgene. <https://doi.org/10.57733/addgene.6u65gp>

How to cite this antibody:

Anti-UNC5A [IPI-mUNC5A.50] - from Institute for Protein Innovation (IPI) (Addgene #260972; <https://n2t.net/addgene:260972>; RRID: AB_3753015).

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