Product Datasheet

Anti-DCC [IPI-mDCC.155]

Applications | Antibody Details | Antigen Details | References

Overview

Antigen	DCC (Netrin receptor DCC)
Immunogen	Purified recombinant fragment of Mouse DCC, corresponding to AA: 32-426.
Host/isotype	Rabbit/IgG
Clonality	Recombinant monoclonal
Clone name	IPI-mDCC.155
RRID	AB_3698380
IPI ID	TAB0011239-013-004
Specificity	DCC; Does not recognize related family members (NEO, PUNC, PRTG)
Species reactivity	Mouse and human
Amount	100 µg
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 +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‡

Application	Tested concentration	Result	Reference
Flow	0.66-100 µg/mL	Positive	https://doi.org/10.57733/addgene.8rpw8v
IF – Binding	1 µg/mL	Positive	https://doi.org/10.57733/addgene.frk8zz
IF – Specificity	1 µg/mL	Positive	https://doi.org/10.57733/addgene.p4jrqr

‡ Not suitable for WB application.

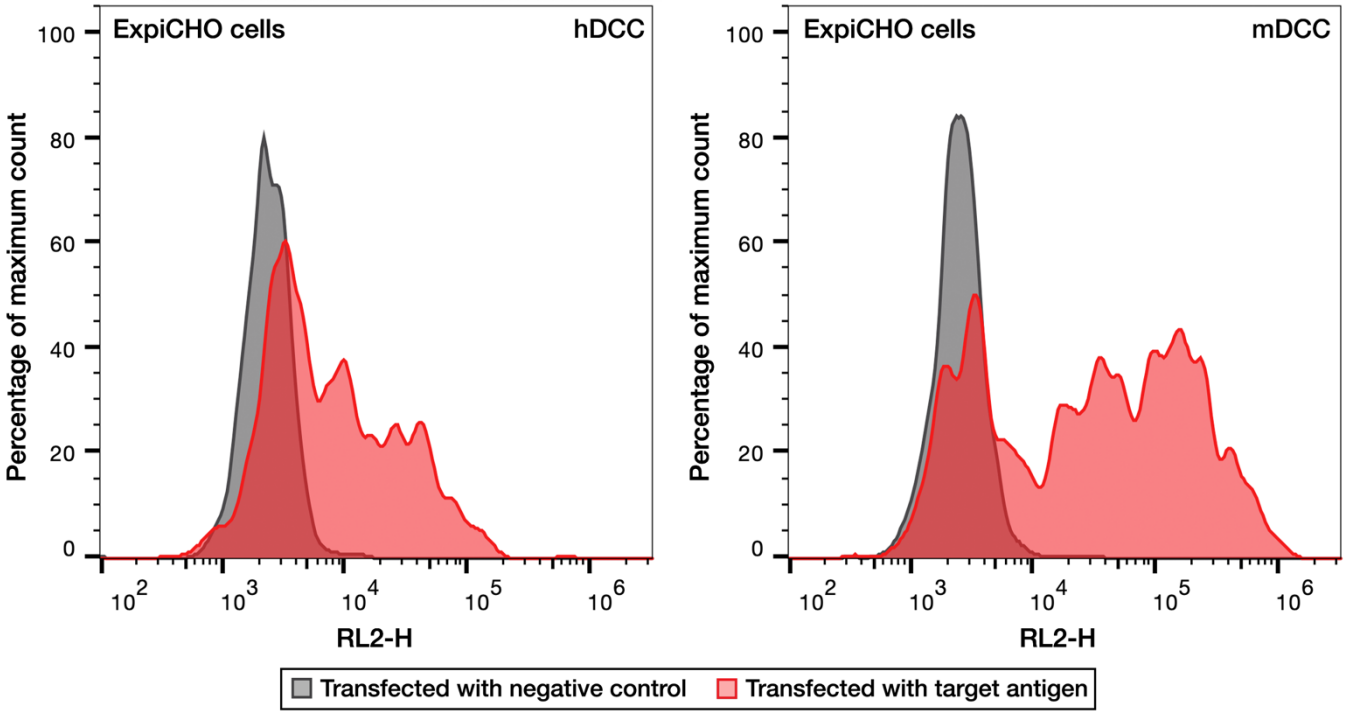
Community Data*

Application	Lab	Reference
ICC	Tim Kennedy, Ph.D., McGill University	https://doi.org/10.57733/addgene.ol1nps
ICC	Tim Kennedy, Ph.D., McGill University	https://doi.org/10.57733/addgene.x3l5hw

* Supporting Data is generated by external partner labs, in the process of evaluating IPI antibody panels.

Applications

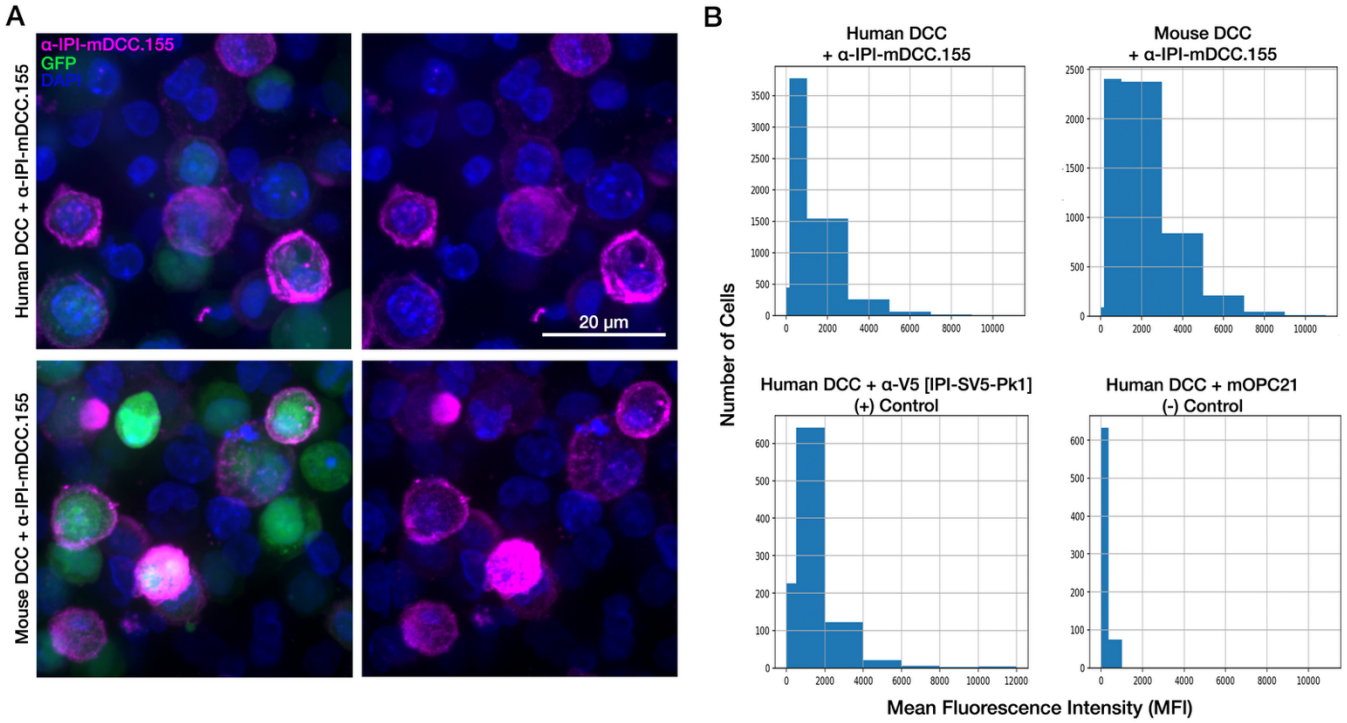
Flow cytometry



Anti-DCC [IPI-mDCC.155] (Addgene #241891) recognizes human and mouse DCC. Histogram from FACS analysis on ExpiCHO cells transfected with human or mouse DCC (red), or B7H3 negative control (gray). Cells expressing human (left panel) or mouse (right panel) DCC were labeled with Anti-DCC [IPI-mDCC.155] and Alexa Fluor 647 F(ab')2 goat anti-rabbit IgG, Fc fragment specific (Jackson ImmunoResearch, 111-606-046). Labeled cells were analyzed with an Intellicyt iQue Screener Plus flow cytometer. Histograms were generated for the 15 ug/mL antibody concentration and normalized to mode using FlowJo™ v10. Note: Low expression of the antigen caused a reduced rightward shift for human and mouse DCC. doi: https://doi.org/10.57733/addgene.8rpw8v

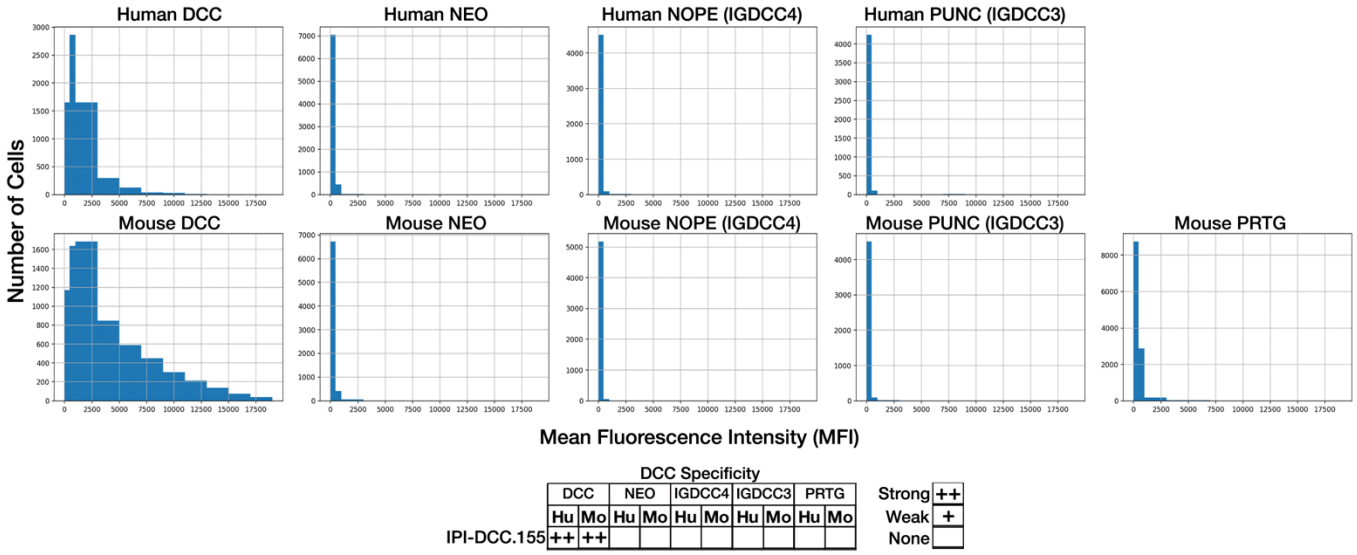
EC_{50} (data not shown): A fourteen-point titration of antibody concentrations, ranging from 660 nM (0.1 mg/mL) to 4.42 pM with a 1:2.5 dilution factor, against human and mouse DCC showed reactivity towards human and mouse DCC with observed EC_{50} values of 0.02 nM and 0.05 nM for human and mouse DCC, respectively.

Immunofluorescence (IF) – Species Reactivity



Anti-DCC [IPI-mDCC.155] (Addgene #241891) shows binding to human and mouse DCC. A) Immunofluorescence (IF) of ExpiCHO cells transfected with human (top row) or mouse (bottom row) DCC stained with IPI-mDCC.155 (magenta). Confocal images taken at 40X magnification on an ImageXpress confocal HT.ai microscope. Scale bar = 20 uM. 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-mDCC.155 staining, was recorded. Each histogram displays the number of cells with MFIs ranging from below 100 (background fluorescence) to 14000 (saturation). IPI-mDCC.155 staining of human and mouse DCC is shown in the top row, and compared to a positive (left) and negative (right) control in the bottom row. For both panels, IPI-mDCC.155 was used at 1 ug/mL (1:1000 dilution). doi: https://doi.org/10.57733/addgene.frk8zz

Immunofluorescence (IF) – Target Specificity



DCC Specificity

	DCC		NEO		IGDCC4		IGDCC3		PRTG	
	Hu	Mo	Hu	Mo	Hu	Mo	Hu	Mo	Hu	Mo
IPI-DCC.155	++	++								

Strong ++
Weak +
None

Anti-DCC [IPI-mDCC.155] (Addgene #241891) shows binding only to human and mouse DCC. 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-mDCC.155 staining, was recorded. Each histogram displays the number of cells with MFIs ranging from below 100 (background fluorescence) to 18000 (saturation). IPI-mDCC.155 staining of human and mouse variants of each IGDCC family member is compared on the top and bottom rows. To test family-wide cross-reactivity, IPI-mDCC.155 was used at 1 ug/mL (1:1000 dilution). doi: https://doi.org/10.57733/addgene.p4jrqr

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

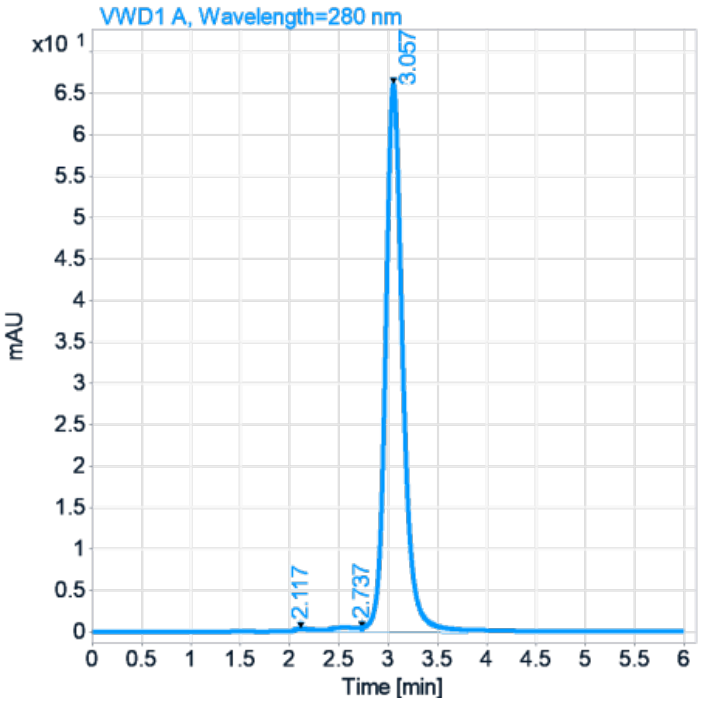
LC-MS: Intact mass analysis via LC-MS methods allows for confirmation antibody mass, and to identify any product-related variants such as glycosylation. Before conducting intact mass analysis via LC-MS, the antibody was reduced to its heavy chain (HC) and light chain (LC). This process allows for confirmation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

	HC MW (Da) *Calculated*	HC MW (Da) *Observed*	HC MW (Da) Delta	LC MW (Da) *Calculated*	LC MW (Da) *Observed*	LC MW (Da) Delta
IPI-mDCC.155	49651.18	49658.60	7.42	22944.51	22944.01	-0.49

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): SEC is a protein purification technique that separates molecules based on size.



	RT (min)	Width (min)	Area	Height	Area %	Result
IPI-mDCC.155	3.057	0.2042	810.966	66.1843	98.1843	Pass

Antigen Details

Immunogen design:

cDNA of Mouse DCC (Netrin receptor DCC) with C-terminal Avi- and His-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:

>Mouse DCC (AA: 32-426):
FQIKPFTSLHFVSEPSDAVTMRGGNVLLNCSAESDRGVPVIKWKKDGLILALGMDDRKQQLPNGSLLIQN
ILHSRHHKPDEGLYQCEASLADSGSIISRTAKVTVAGPLRFLSQTESITAFMGDTVLLKCEVIGEPMPTIHW
QKNQQDLNPLPGDSRVVVLPSGALQISRLQPGDSGVYRCSARNPASIRTGNEAEVRILSDPGLHRQLYFL
QRPSNVIAIEGKDAVLECCVSGYPPPSFTWLRGEEVIQLRSKKYSLLGGSNLLISNVTDDDSGTYTCVVTY
KNENISASAELTVLVPPWFLNHPSNLYAYESMDIEFECAVSGKPVPTVNWMKNGDVVIPSDYFQIVGGSN
LRILGVVKSDEGFYQCVAENEAGNAQSSAQLIVPKPAIPSSSGGSGGLNDIFEAQKIEWHEGSGHHHHH
HHH

Sequence information:

HUGO:	MGI:94869
Uniprot:	P70211
Refseq:	NM_007831.3

Structural information:

Topology:	Single-pass type I membrane protein
PDB IDs:	2ED7;2ED8;2ED9;2EDB;2EDD;2EDE;3AU4;4URT;5X83
Alphafold:	AF-P70211-F1

Expression profiles:

Human Protein Atlas	ENSMUSG00000060534

References

1. Z. Anderson, H. Li, T. Riedel, H. Zhu and D. Moshinsky. (2025). Flow Cytometry for Anti-DCC [IPI-mDCC.155]. Addgene. https://doi.org/10.57733/addgene.8rpw8v
2. A. Morano, T. Riedel, and D. Moshinsky. (2025). ICC/IF for Anti-DCC [IPI-mDCC.155] in binding assay. Addgene. https://doi.org/10.57733/addgene.frk8zz
3. A. Morano, T. Riedel, and D. Moshinsky. (2025). ICC/IF for Anti-DCC [IPI-mDCC.155] in specificity assay. Addgene. https://doi.org/10.57733/addgene.p4jrqr
4. T. Fisher and T. Kennedy. (2026). ICC for IPI-mDCC.155. Addgene. https://doi.org/10.57733/addgene.ol1nps
5. T. Fisher and T. Kennedy. (2026). ICC for IPI-mDCC.155. Addgene. https://doi.org/10.57733/addgene.x3l5hw

How to cite this antibody:
Anti-DCC [IPI-mDCC.155] - from Institute for Protein Innovation (IPI) (Addgene #241891; http://n2t.net/addgene:241891; RRID: AB_3698380).

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