Product Datasheet

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Overview

Antigen	CELSR1
Immunogen	Purified recombinant fragment of Mouse CELSR1, corresponding to AA: 2064 - 2481.
Host/isotype	Rabbit/IgG
Clonality	Recombinant monoclonal
Clone name	IPI-mCELSR1.63
RRID	AB_3754865
IPI ID	TAB0019808-013
Specificity	CELSR1; Does not cross-react with other CELSRs.
Species	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.

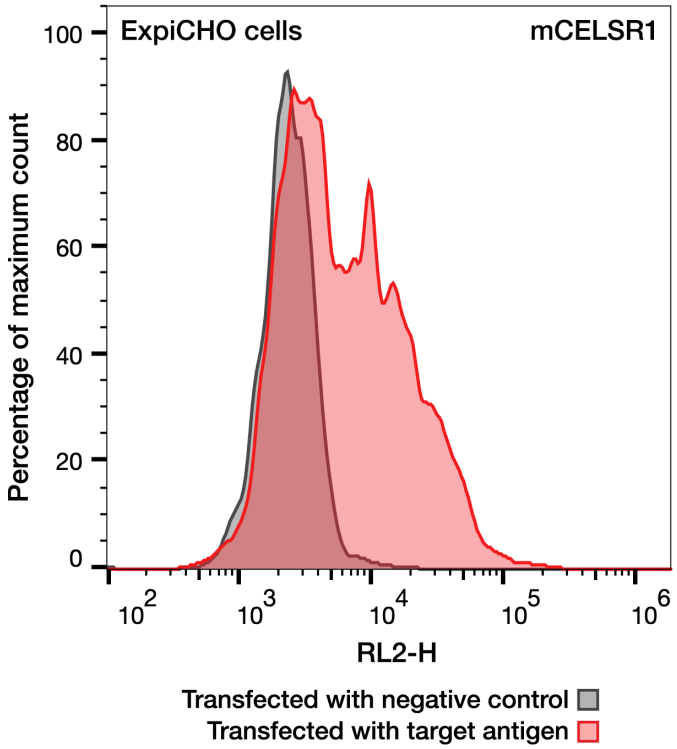
IPI Tested Applications

Applications	Tested Concentration	Result	Reference
Flow Cytometry	0.66-100 µg/mL	Positive	https://doi.org/10.57733/addgene.owtz58
SPR	4 µg/mL	Positive	https://doi.org/10.57733/addgene.pgdp3m
IF- Binding	10 µg/mL	Positive	https://doi.org/10.57733/addgene.n44yh2
IF - Specificity	10 µg/mL	Positive	https://doi.org/10.57733/addgene.elinr7
IHC	10 µg/mL	Positive	https://doi.org/10.57733/addgene.yonlj4

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Applications

Cell Display



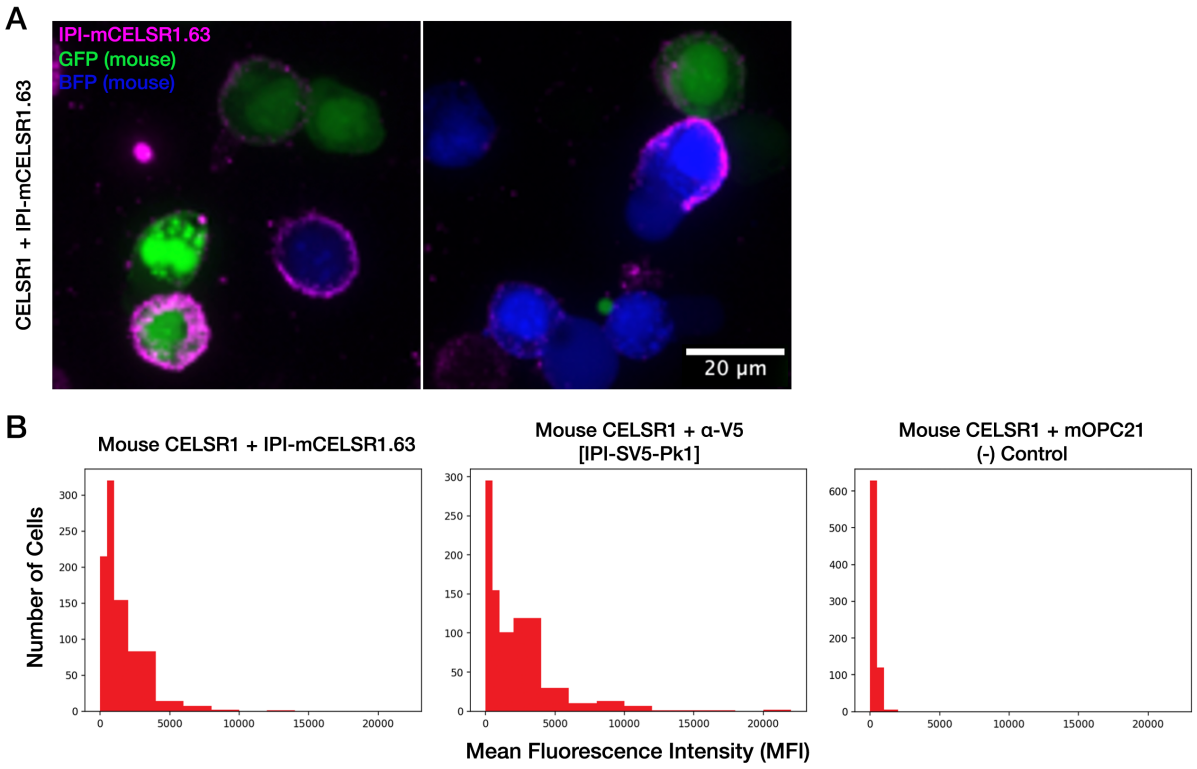
Anti-CELSR1 [IPI-mCELSR1.63] (Addgene # 262534) recognizes Mouse CELSR1.

Histogram from FACS analysis on ExpiCHO cells transfected with mouse CELSR1 (red), or B7H3 negative control (gray). Cells expressing mouse CELSR1 were labeled with Anti-CELSR1 [IPI-mCELSR1.63] and Alexa Fluor 647 F(ab')2 goat anti-rabbit IgG Fc fragment (Jackson ImmunoResearch, 111-606-046). Note that human CELSR1 was not tested. 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.owtz58

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 mouse CELSR1 showed reactivity towards mouse CELSR1 with observed EC_{50} value of 0.77 nM.

Immunofluorescence (IF) – Binding

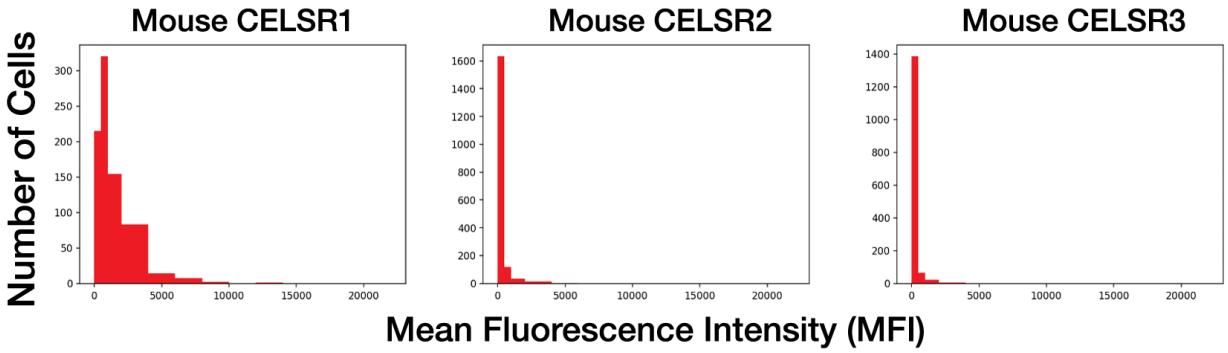


Anti-CELSR1 [IPI-mCELSR1.63] (Addgene# 262534) shows binding to mouse CELSR1.

A) Immunofluorescence (IF) of ExpiCHO cells transfected with mouse (Green/GFP / Blue/BFP) CELSR1 stained with IPI-mCELSR1.63 (magenta). Confocal images taken at 40X magnification on the 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- 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-mCELSR1.63 staining, was recorded. Each histogram displays the number of cells with MFIs ranging from below 100 (background fluorescence) to 20000. IPI-mCELSR1.63 staining of mouse CELSR1 is shown first (left), and compared to a positive (middle) and negative (right) control. For both panels, IPI-mCELSR1.63 was used at 10 ug/mL (1:100 dilution).

doi: https://doi.org/10.57733/addgene.n44yh2

Immunofluorescence (IF) - Target Specificity



Family Crossreactivity

	CELSR1		CELSR2		CELSR3	
	Hu	Mo	Hu	Mo	Hu	Mo
IPI-mCELSR1.63	ND	++	ND		ND	

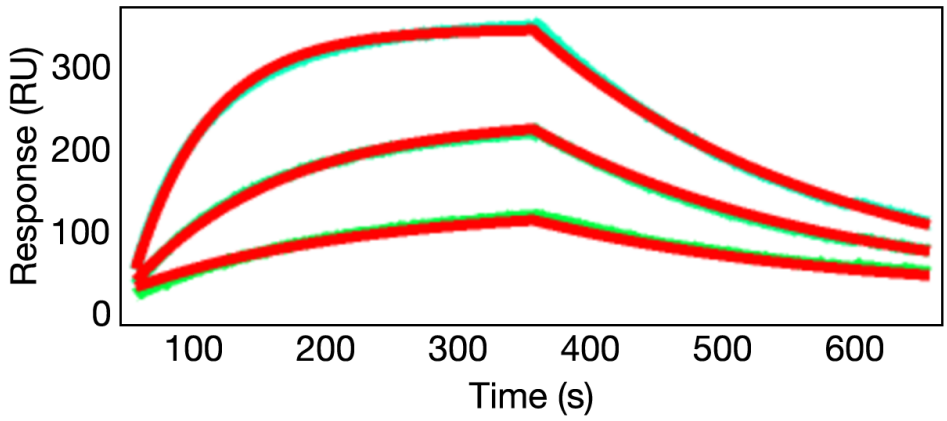
Strong	++
Weak	+
None	

Anti-CELSR1 [IPI-mCELSR1.63] (Addgene# 262534) shows significant binding to mouse CELSR1.

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-mCELSR1.63 staining, was recorded. Each histogram displays the number of cells with MFIs ranging from below 100 (background fluorescence) to 20000. IPI-mCELSR1.63 staining of mouse homologs of selected CELSR family members is compared. Binding to human CELSRs was not tested (ND). To test family-wide cross-reactivity, IPI-mCELSR1.63 was used at 10 ug/mL (1:100 dilution).

doi: https://doi.org/10.57733/addgene.elinr7

Surface Plasmon Resonance (SPR)



Kinetic Parameters

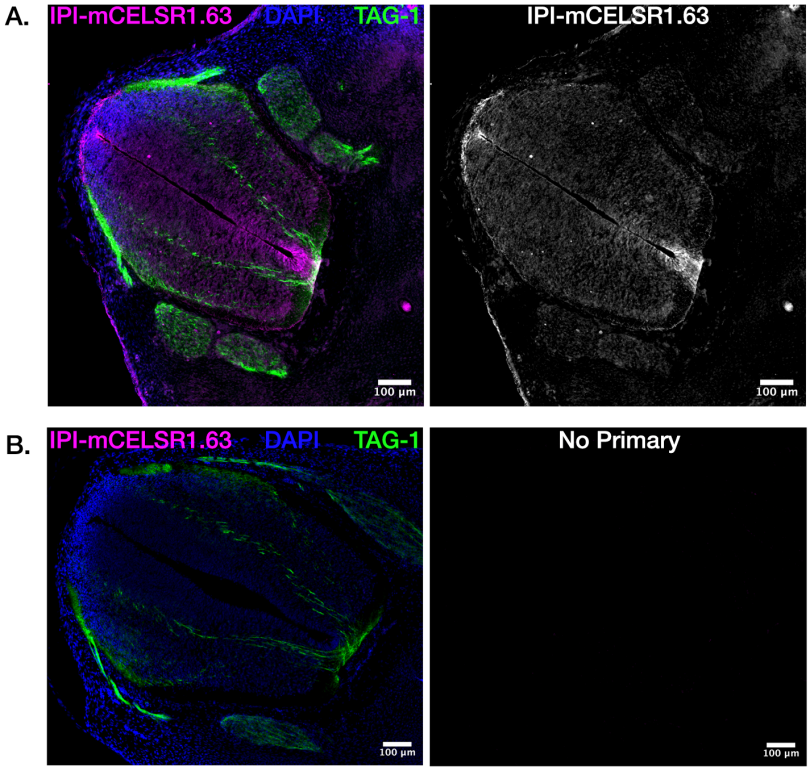
k_a ($M^{-1}s^{-1}$)	k_d (s^{-1})	K_D (M)	R_{max}	Res SD
3.00×10^{5}	4.70×10^{-3}	1.50×10^{-8}	478.00	3.80

Surface Plasmon Resonance (SPR) kinetics analysis of the interaction between Anti-CELSR1 [IPI-mCELSR1.63] and CELSR1.

SPR binding kinetics were measured on a Carterra LSA-XT (model) using HC30M chips (Carterra, cat. #4279) at 25 °C. Goat anti-rabbit IgG Fc antibody (Jackson ImmunoResearch Laboratories, Cat. #111-005-046) was immobilized via amine coupling, and test antibodies (here IPI-mCELSR1.63) were captured using a 96-channel print-head. Antigens (400 nM to five lower concentrations, 3-fold dilutions) were injected in antigen buffer (20 mM HEPES pH 7.4, 150 mM NaCl, 1 mM CaCl , 1 mM MgCl , 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 ka, kd, and KD using Carterra Kinetics software v1.9.2.44.63.

doi: https://doi.org/10.57733/addgene.pgdp3m

Immunohistochemistry (IHC)



Immunohistochemistry (IHC) for Anti-CELSR1 [IPI-mCELSR1.63]

Immunohistochemistry (IHC) of 20 micron cryosections of the spinal cord of Embryonic Day 12.5 wild type C57BL/6J mice. Images were taken at 20X magnification on an Olympus VS200 slide scanner. Scale bars = 100 µm Merged images show signal from IPI-mCELSR1.63 primary (top) or no rabbit primary control (bottom) (magenta), DAPI (blue), and anti-TAG1 (green)(DSHB 23.4-5), and the grayscale image shows signal from IPI-mCELSR1.63 or no rabbit primary control. IPI-mCELSR1.63 was used at 10 ug/mL (1:100 dilution).

doi: https://doi.org/10.57733/addgene.yonlj4

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

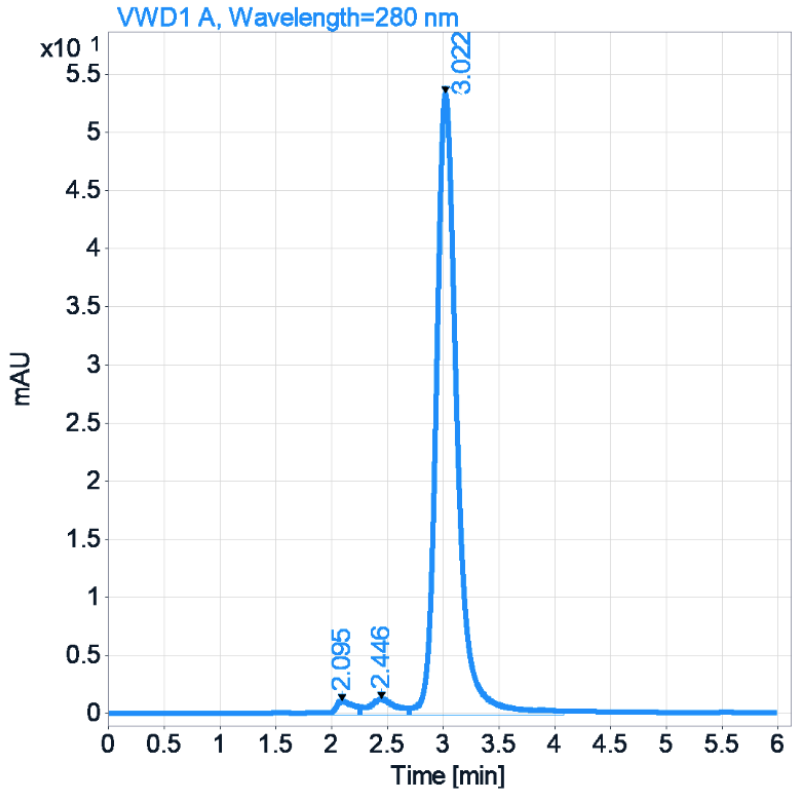
LC Calculated	LC Observed	LC Delta	HC Calculated	HC Observed	HC Delta
22952.44	22952.07	-0.37	49973.46	49979.78	6.32

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)	Area %	Result
IPI-mCELSR1.63	3.02	94.90	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 CELSR1 (AA: 2064 - 2481):

EVIYNGCPRAFEAGIWWPQTKFGQPAAVPCPKGSVGNAVRHCSGEKGWLPPELFNCTSGSFVDLKALNEKLNRNE
TRMDGNRSLRLAKALRNATQGNSTLFGNDVRTAYQLLARILQHESRQQGFDLAATREANFHEDVVHTGSALLAPAT
EASWEQIQRSEAGAAQLLRHFEAYFSNVARNVKRTYLRPFVIVTANMILAVDIFDKLNFTGAQVPRFEDIQEELPRELE
SSVSFPADTFKPPEKKEGPVVRLTNRRTTPLTAQPEPRAERETSSSRRRRHPDEPGQFAVALVVIYRTLGQLLPEHY
DPDHRSLRLPNRPVINTPVVSAMVYSEGTPLPSSLQRPILVEFSLLETEERSKPVCVFWNHSLDTGGTGGWSAKGC
ELLSRNRTHVTCQCSHSASCAVLMDISRREHGEVLGGGGSGGGGSPAPELLGGPSVFLFPPKPKDTLMISRTPEVT
CVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLAQDWLNGKEYKCKVSNKALPAPIEKTI
SKAKGQPREPQVYTLPPSRDELTKNQVNLTCLVKGFYPSDIAVEWESNGQPENNYKTTPPVLDSDGSFFLNSTLTVD
KSRWQQGNVFSCSVMHEALANHYTQKSLSLSPGKGSGGLNDIFEAQKIEWHEGSGHHHHHH

Sequence information:

HUGO:	MGI:1100883
Uniprot:	O35161
Refseq:	NM_009886.2

Structural information:

Topology:	Multi-pass membrane protein
PDB IDs:	7SZ8; 8D40
Alphafold:	AF-O35161-F1

Expression profile:

Human Protein Atlas:	ENSG00000075275

References

1. A. Kachare, M. Anuganti, H. Li, M. Sandaire, N. Petrunich, N. Pokhrel Mashock, T. Riedel, and D. Moshinsky. (2026). SPR for Anti-CELSR1 [IPI-mCELSR1.63]. Addgene. https://doi.org/10.57733/addgene.pgdp3m
2. Z. Anderson, H. Li, T. Riedel, H. Zhu and D. Moshinsky. (2026). Flow for Anti-CELSR1 [IPI-mCELSR1.63]. Addgene. https://doi.org/10.57733/addgene.owtz58
3. A. Morano, T. Riedel, and D. Moshinsky. (2026). ICC for Anti-CELSR1 [IPI-mCELSR1.63]. Addgene. https://doi.org/10.57733/addgene.n44yh2
4. A. Morano, T. Riedel, and D. Moshinsky. (2026). ICC for Anti-CELSR1 [IPI-mCELSR1.63]. Addgene. https://doi.org/10.57733/addgene.elinr7
5. A. Morano, T. Riedel, and D. Moshinsky. (2026). IHC for Anti-CELSR1 [IPI-mCELSR1.63]. Addgene. https://doi.org/10.57733/addgene.yonlj4

How to cite this antibody:

Anti-CELSR1 [IPI-mCELSR1.63] - from Institute for Protein Innovation (IPI) (Addgene #262534; https://n2t.net/addgene:262534; RRID: AB_3754865).

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