Product Datasheet

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Overview

Antigen	Unknown
Immunogen	MOPC-21 was not generated against a defined antigen — it is a monoclonal immunoglobulin from a mouse tumor. See: Bothwell AL, et al. Cell. 1981 Jun;24(3):625-37.
Host/isotype	Rabbit/IgG
Clonality	Recombinant monoclonal
Clone name	IPI-MOPC-21
RRID	AB_3717685
IPI ID	TAB0021468-013
Specificity	Unknown specificity - acts as isotype (negative) control.
Species reactivity	N/A
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.

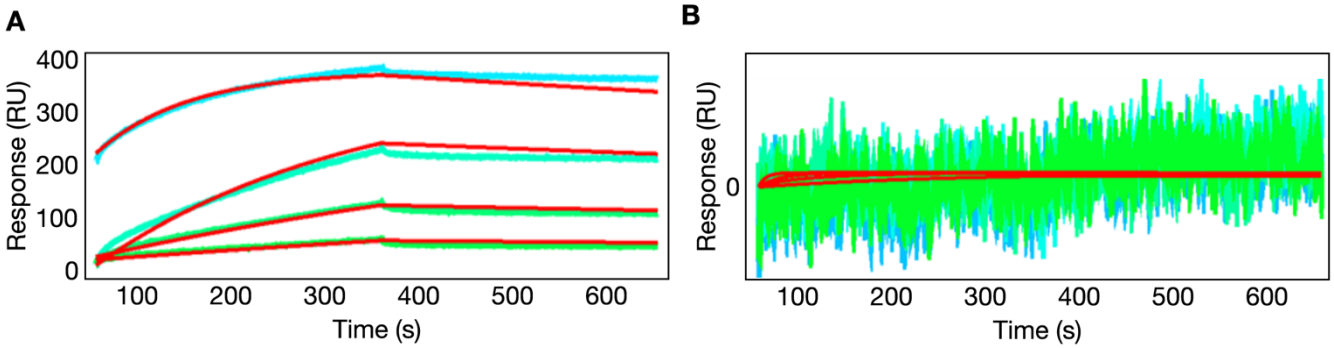
IPI Tested Applications‡

Application	Tested concentration	Result	Reference
SPR	2 µg/mL (1:500)	Positive	https://doi.org/10.57733/addgene.fwu3v3
IF – Binding	1 µg/mL (1:1000)	Positive	https://doi.org/10.57733/addgene.nai1xg
IF – Specificity	1 µg/mL (1:1000)	Positive	https://doi.org/10.57733/addgene.11zoj2

‡ Not suitable for WB application.

Applications

Surface Plasmon Resonance (SPR)



Kinetic Parameters

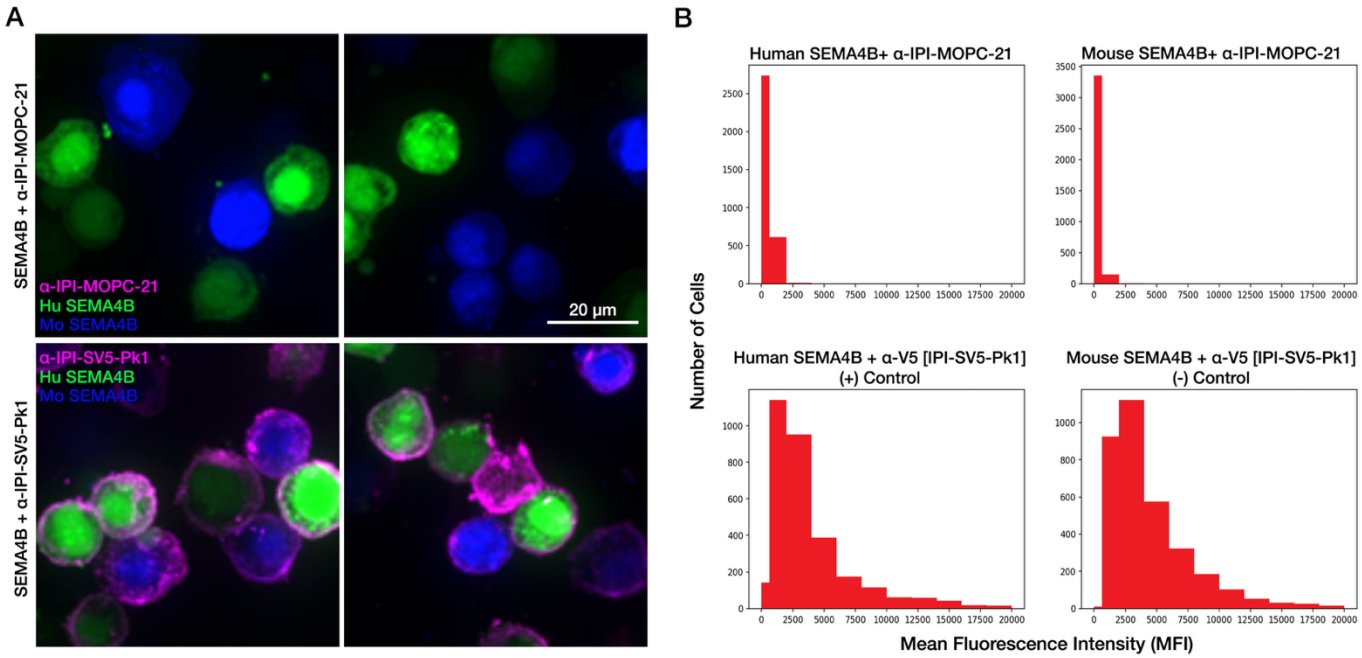
k_a ($M^{-1}s^{-1}$)	k_d (s^{-1})	K_D (M)
$7.5x10^4$	$3.1x10^{-4}$	$4.2x10^{-9}$

Kinetic Parameters

k_a ($M^{-1}s^{-1}$)	k_d (s^{-1})	K_D (M)
N/A	N/A	N/A

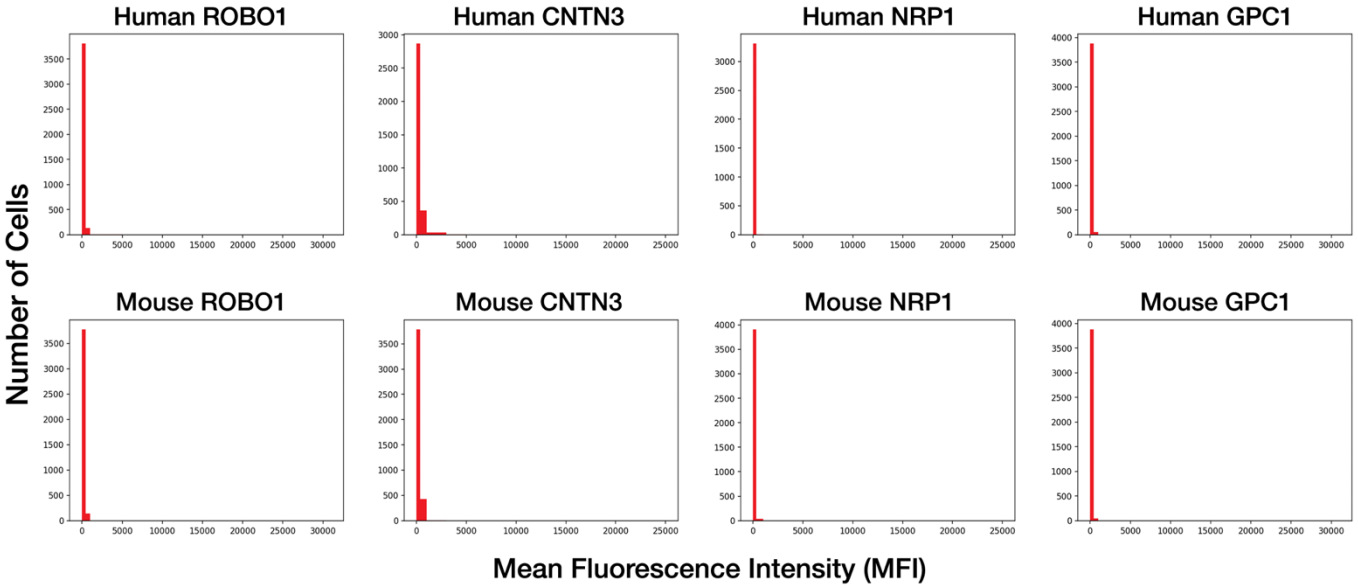
Rabbit IgG Isotype Control [IPI-MOPC-21] in Surface Plasmon Resonance (SPR) Surface Plasmon Resonance (SPR) kinetics analysis of the interaction between Rabbit IgG Isotype Control [IPI-MOPC-21] and M. musculus (mouse) NRXN2a. SPR binding kinetics were measured on a Carterra LSA using HC30M chips (Carterra, cat. #4279) at 25 °C. A) IPI-mNRXN2a.10 (Addgene #237806) and B) IPI-MOPC-21 (Addgene #237822) were captured using goat anti-rabbit IgG Fc (Jackson ImmunoResearch, cat. #111-005-046) immobilized by amine coupling. The mouse NRXN2a antigen (400 nM with five 3-fold dilutions) was injected in standard antigen buffer antigen buffer (20 mM HEPES pH 7.4, 150 mM NaCl, 1 mM $CaCl_2$, 1 mM $MgCl_2$, 0.005% Tween 80) with 300 s association and dissociation phases followed by 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, and replotted in OriginPro 2023b. IPI-mNRXN2a.10 produced a clear binding response consistent with a premium binding profile, whereas IPI-MOPC-21 showed no binding as expected and served as a negative control. doi: https://doi.org/10.57733/addgene.fwu3v3

Immunofluorescence (IF) – Species Reactivity



Rabbit IgG Isotype Control [IPI-MOPC-21] (Addgene#237822) does not show binding to human or mouse SEM4B. A) Immunofluorescence (IF) of ExpiCHO cells transfected with human (Green/GFP) and mouse (Blue/BFP) SEM4B-V5 stained with IPI-mOPC21 (magenta, top row) and IPI-V5. 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-mOPC21 or IPI-V5 staining, was recorded. Each histogram displays the number of cells with MFIs ranging from below 500 (background fluorescence) to 22000. IPI-mOPC21 staining of human and mouse SEM4B is shown in the top row, and compared to the positive control (IPI-V5 staining) in the bottom row. For both panels, IPI-mOPC21 was used at 1:1000 (1 ug/mL) https://doi.org/10.57733/addgene.nai1xg

Immunofluorescence (IF) – Target Specificity



Rabbit IgG Isotype Control [IPI-MOPC-21] (Addgene#237822) does not show binding to any of the selected IPI targets. 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-MOPC21 staining, was recorded. Each histogram displays the number of cells with MFIs ranging from below 100 (background fluorescence) to 22000. IPI-MOPC21 staining of human and mouse variants of selected IPI targets from different families is compared on the top and bottom rows. To test family-wide cross-reactivity, IPI-MOPC21 was used at 1 ug/mL (1:1000 dilution). https://doi.org/10.57733/addgene.11zoj2

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

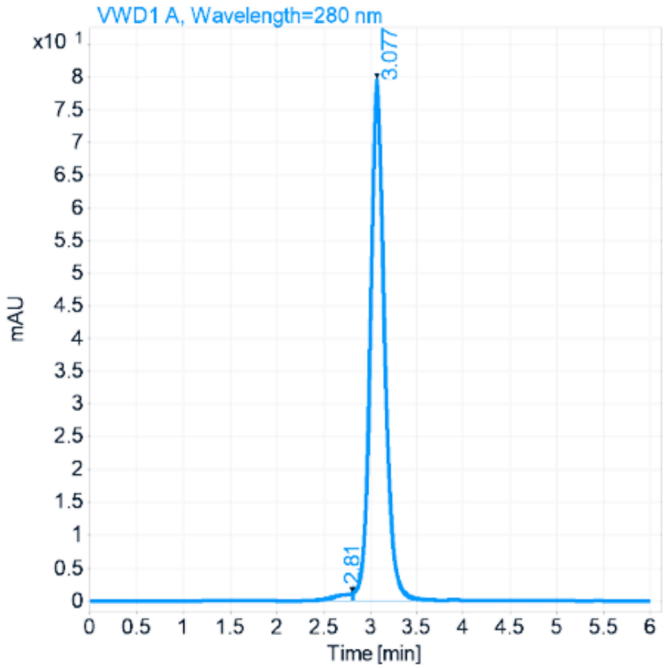
LC-MS: Intact mass analysis via LC-MS methods allows for confirmation antibody mass, and to identify any product-related variants such as glycosylation. Before conducting intact mass analysis via LC-MS, the antibody was reduced to its heavy chain (HC) and light chain (LC). This process allows for confirmation 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-MOPC-21	49814.30	49820.20	5.90	23058.56	23058.19	-0.37

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.



	RT (min)	Width (min)	Area	Height	Area %	Result
IPI-MOPC-21	3.08	0.19	908.60	79.63	98.42	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 design:

MOPC-21 was not generated against a defined antigen — it is a monoclonal immunoglobulin from a mouse tumor. See: Bothwell AL, et al. Cell. 1981 Jun;24(3):625-37.

Immunogen sequences:

N/A

Sequence information:

HUGO: N/A
Uniprot: N/A
Refseq: N/A

Structural information:

Topology: N/A
PDB IDs: N/A
Alphafold: N/A

Expression profiles:

Human Protein Atlas: N/A

References

1. A. Morano, T. Riedel, and D. Moshinsky. (2026). ICC/IF for Rabbit IgG Isotype Control [IPI-MOPC-21] in binding assay. Addgene. https://doi.org/10.57733/addgene.nai1xg
2. A. Morano, T. Riedel, and D. Moshinsky. (2026). ICC/IF for Rabbit IgG Isotype Control [IPI-MOPC-21] in specificity assay. Addgene. https://doi.org/10.57733/addgene.11zoj2
3. A. Kachare, M. Anuganti, T. Riedel, and D. Moshinsky. (2026). Rabbit IgG Isotype Control [IPI-MOPC-21] in Surface Plasmon Resonance (SPR). Addgene. https://doi.org/10.57733/addgene.fwu3v3

How to cite this antibody:
Rabbit IgG Isotype Control [IPI-MOPC-21] - from Institute for Protein Innovation (IPI) (Addgene #237822; http://n2t.net/addgene:237822; RRID: AB_3717685).

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