

MINT3 Polyclonal Antibody

Catalog Number PA1-072

Product data sheet

Details		Species Reactivity	
Size	100 µg	Species reactivity	Human, Mouse, Rat
Host/Isotope	Rabbit / IgG	Published species	Rat, Non-human primate, Mouse, Not Applicable
Class	Polyclonal		
Type	Antibody	Tested Applications	Dilution *
Immunogen	Synthetic peptide corresponding to residues M(1) E F L P E P Q H P P G P P T M D L E(19) of rat Mint3.	Western Blot (WB)	2 µg/mL
Conjugate	Unconjugated	Immunocytochemistry (ICC/IF)	2 µg/mL
Form	Liquid		
Concentration	1 mg/mL	Published Applications	
Purification	Antigen affinity chromatography	Western Blot (WB)	See 2 publications below
Storage buffer	PBS with 1mg/mL BSA	Immunocytochemistry (ICC/IF)	See 1 publications below
Contains	0.05% sodium azide	Immunohistochemistry (IHC)	See 1 publications below
Storage Conditions	-20° C, Avoid Freeze/Thaw Cycles	* Suggested working dilutions are given as a guide only. It is recommended that the user titrate the product for use in their own experiment using appropriate negative and positive controls.	

Product specific information

PA1-072 detects munc-18 interacting protein 3 (Mint3) from mouse cells and rat brain samples. PA1-072 has been successfully used in Western blot procedures. By Western blot, this antibody detects an ~86 kDa protein representing Mint3 from AtT20 cell extract and rat brain samples. The PA1-072 immunogen is a synthetic peptide corresponding to residues M(1) E F L P E P Q H P P G P P T M D L E(19) of rat Mint3. The PA1-072 immunizing peptide (Cat. # PEP-135) is available for use in neutralization and control experiments.

Background/Target Information

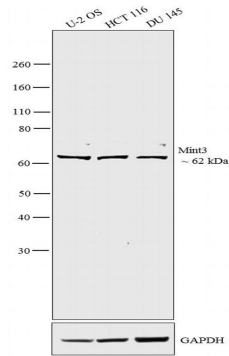
The munc-18 interacting protein (Mint) protein family is a group of evolutionarily conserved adaptor proteins that function in membrane transport and organization. In mammals, there exist three mint isoforms, Mint1, 2, and 3. Although there is little amino acid sequence conservation in the amino-terminal half, the carboxy-terminal half of these proteins is highly conserved. Within this conserved portion there exists a phosphotyrosine-binding (PTB) and a PSD-95/DLG-A/ZO-1 (PDZ) domain, which function as protein interaction modules. Mint1 and 2 appear to be expressed exclusively in the brain and are found to bind to Munc18, an essential component of the synaptic vesicle fusion machinery. Mint3 is ubiquitously expressed in all tissues and is expressed at the lowest levels in the brain and testis. Studies show that mint3 does not interact with munc-18. Mint3 has been found to interact with the Alzheimer's Disease-related amyloid precursor protein (APP) and does so through its PTB and PDZ domains. It has been suggested that mint3 links APP to other transport machinery components, thereby regulating its transport, endocytosis, and metabolism. Abnormal APP metabolism has been shown to be the cause of an early-onset type of Alzheimer's disease.

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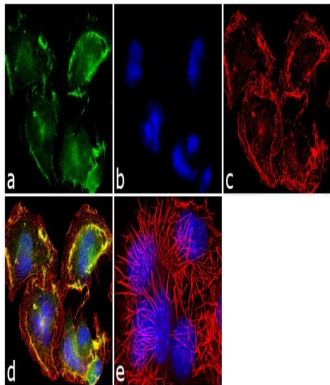
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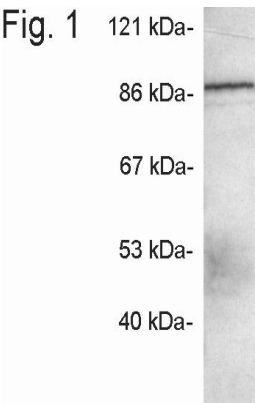
**MINT3 Antibody (PA1-072) in WB**

Western blot analysis was performed on whole cell extracts (30 µg lysate) of U-2 OS (Lane 1), HCT 116 (Lane 2) and DU 145 (Lane 3). The blots were probed with Anti-Mint3 Rabbit Polyclonal Antibody (Product # PA1-072, 2 µg/mL) and detected by chemiluminescence using Goat anti-Rabbit IgG (Heavy Chain) Superclonal™ Secondary Antibody, HRP conjugate (Product # A27036, 0.25 µg/mL, 1:4000 dilution). A 62 kDa band corresponding to Mint3 was observed across the cell lines tested. Known quantity of protein samples were electrophoresed using Novex® NuPAGE® 4-12 % Bis-Tris gel (Product # NP0321BOX), XCell SureLock™ Electrophoresis System (Product # EI0002) and Novex® Sharp Pre-Stained Protein Standard (Product # LC5800). Resolved proteins were then transferred onto a nitrocellulose membrane with iBlot® 2 Dry Blotting System (Product # IB21001). The membrane was probed with the relevant primary and secondary Antibody following blocking with 5 % skimmed milk. Chemiluminescent detection was performed using Pierce™ ECL Western Blotting Substrate (Product # 32106).



**MINT3 Antibody (PA1-072) in ICC/IF**

Immunofluorescence analysis of Mint3 was performed using 90% confluent log phase Neuro-2a cells. The cells were fixed with 4% paraformaldehyde for 10 minutes, permeabilized with 0.1% Triton™ X-100 for 10 minutes, and blocked with 1% BSA for 1 hour at room temperature. The cells were labeled with Mint3 Rabbit Polyclonal Antibody (Product # PA1-072) at 2µg/mL in 0.1% BSA and incubated for 3 hours at room temperature and then labeled with Goat anti-Rabbit IgG (Heavy Chain) Superclonal™ Secondary Antibody, Alexa Fluor® 488 conjugate (Product # A27034) at a dilution of 1:2000 for 45 minutes at room temperature (Panel a: green). Nuclei (Panel b: blue) were stained with SlowFade® Gold Antifade Mountant with DAPI (Product # S36938). F-actin (Panel c: red) was stained with Alexa Fluor® 555 Rhodamine Phalloidin (Product # R415, 1:300). Panel d represents the merged image showing membranous localization. Panel e shows the no primary antibody control. The images were captured at 60X magnification.



**MINT3 Antibody (PA1-072) in WB**

Western blot detection of Mint3 from AtT20 cell extract using Product # PA1-072.

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PubMed References For MINT3 Polyclonal Antibody

2 Western Blot References

Species / Dilution	Summary
	PA1-072 was used in western blot to investigate the differential functions of the Mint isoforms.
Rat / Not Cited	The Journal of neuroscience : the official journal of the Society for Neuroscience ( 2002; 22: 7340) <b>"Regulation of APP-dependent transcription complexes by Mint/X11s: differential functions of Mint isoforms."</b> Author(s):Biederer T,Cao X,Südhof TC,Liu X PubMed Article URL: <a href="http://dx.doi.org/10.1523/JNEUROSCI.22-17-07340.2002">http://dx.doi.org/10.1523/JNEUROSCI.22-17-07340.2002</a>
Not Applicable / 1:100	PA1-072 was used in Western Blotting to determine the role of microRNA-448 in isoflourane-induced learning and memory impairment in rats.  Molecular medicine reports ( 2017; 16: 1578) <b>"Downregulation of microRNA-448 improves isoflurane-induced learning and memory impairment in rats."</b> Author(s):Wu Q,Dai Q,Jiang L,Wang Y,Yang T,Miao J,Wang J,Han Y PubMed Article URL: <a href="http://dx.doi.org/10.3892/mmr.2017.6724">http://dx.doi.org/10.3892/mmr.2017.6724</a>

1 Immunocytochemistry References

Species / Dilution	Summary
	PA1-072 was used in immunocytochemistry to study the role of Mint adaptor proteins in the activity-dependent trafficking of APP and PS1 and the generation of beta-amyloid
Rat / Not Cited	The Journal of biological chemistry ( 2014; 289: 15374) <b>"Mint proteins are required for synaptic activity-dependent amyloid precursor protein (APP) trafficking and amyloid generation."</b> Author(s):Sullivan SE,Dillon GM,Sullivan JM,Ho A PubMed Article URL: <a href="http://dx.doi.org/10.1074/jbc.M113.541003">http://dx.doi.org/10.1074/jbc.M113.541003</a>

1 Immunohistochemistry References

Species / Dilution	Summary
	PA1-072 was used in immunohistochemistry to investigate the expression and distribution of mint1 and mint2 in adult murine brain
Mouse / 1:1,000	Brain research. Molecular brain research ( 2001; 92: 27) <b>"Neuronal expression of mint1 and mint2, novel multimodular proteins, in adult murine brain."</b> Author(s):Nakajima Y,Okamoto M,Nishimura H,Obata K,Kitano H,Sugita M,Matsuyama T PubMed Article URL: <a href="http://dx.doi.org/10.1016/s0169-328x(01)00126-7">http://dx.doi.org/10.1016/s0169-328x(01)00126-7</a>

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