

Product Datasheet

Aquaporin-4 Antibody - BSA Free NBP1-87679

Unit Size: 0.1 ml

Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.

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NBP1-87679**Aquaporin-4 Antibody - BSA Free**

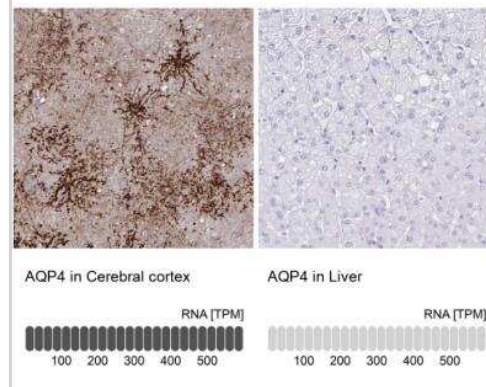
Product Information	
Unit Size	0.1 ml
Concentration	Concentrations vary lot to lot. See vial label for concentration. If unlisted please contact technical services.
Storage	Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.
Clonality	Polyclonal
Preservative	0.02% Sodium Azide
Isotype	IgG
Purity	Affinity purified
Buffer	PBS (pH 7.2) and 40% Glycerol
Target Molecular Weight	35 kDa

Product Description	
Description	Novus Biologicals Rabbit Aquaporin-4 Antibody - BSA Free (NBP1-87679) is a polyclonal antibody validated for use in IHC, WB, ICC/IF and IP. Anti-Aquaporin-4 Antibody: Cited in 20 publications. All Novus Biologicals antibodies are covered by our 100% guarantee.
Host	Rabbit
Gene ID	361
Gene Symbol	AQP4
Species	Human, Mouse, Rat, Bovine
Reactivity Notes	Rat reactivity reported in scientific literature (PMID:33634832). Bovine reactivity reported in scientific literature (PMID: 31233960).
Marker	Astrocytes Marker
Immunogen	This antibody was developed against Recombinant Protein corresponding to amino acids: CPDVEFKRRFKEAFSKAAQQTKGSYMEVEDNRSQVETDDLILKPGVVHVIDVD RGEEKKGGKDQSGEVLSSV

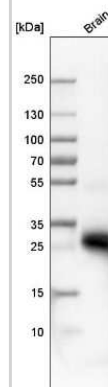
Product Application Details	
Applications	Western Blot, Immunohistochemistry-Paraffin, Immunohistochemistry, Immunohistochemistry-Frozen, Immunoprecipitation
Recommended Dilutions	Western Blot 0.04 - 0.4 ug/mL, Immunohistochemistry 1:2500 - 1:5000, Immunoprecipitation Reported in scientific literature (PMID: 32843684), Immunohistochemistry-Paraffin 1:2500 - 1:5000, Immunohistochemistry-Frozen Validated from verified customer review.
Application Notes	IHC-Paraffin, HIER pH 6 retrieval is recommended.

Images

Immunohistochemistry-Paraffin: Aquaporin-4 Antibody [NBP1-87679] - Analysis in human cerebral cortex and liver tissues. Corresponding AQP4 RNA-seq data are presented for the same tissues.



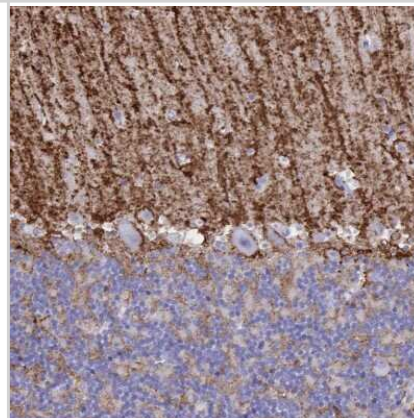
Western Blot: Aquaporin-4 Antibody [NBP1-87679] - Analysis in human brain tissue.



Immunohistochemistry: Aquaporin-4 Antibody [NBP1-87679] - Staining of mouse cerebellum shows positivity in astrocytes, mainly in the molecular layer.



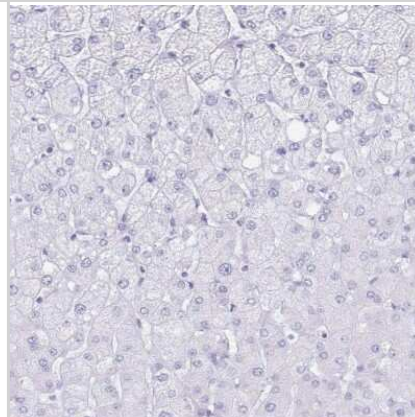
Immunohistochemistry-Paraffin: Aquaporin-4 Antibody [NBP1-87679] - Staining of human cerebellum shows moderate to strong membranous positivity in astrocytes, mainly in the molecular layer.



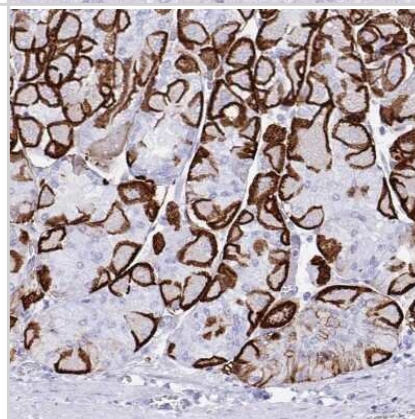
Immunohistochemistry-Paraffin: Aquaporin-4 Antibody [NBP1-87679] - Staining of human cerebral cortex shows moderate to strong membranous positivity in astrocytes.



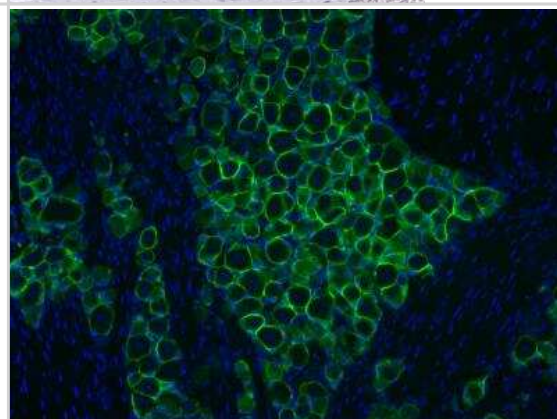
Immunohistochemistry-Paraffin: Aquaporin-4 Antibody [NBP1-87679] - Staining of human liver shows no positivity in hepatocytes, as expected.



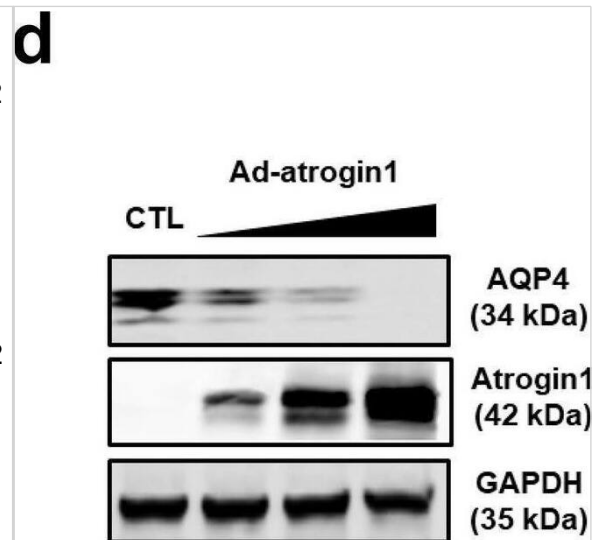
Immunohistochemistry-Paraffin: Aquaporin-4 Antibody [NBP1-87679] - Staining of human stomach shows strong membranous positivity in glandular cells.



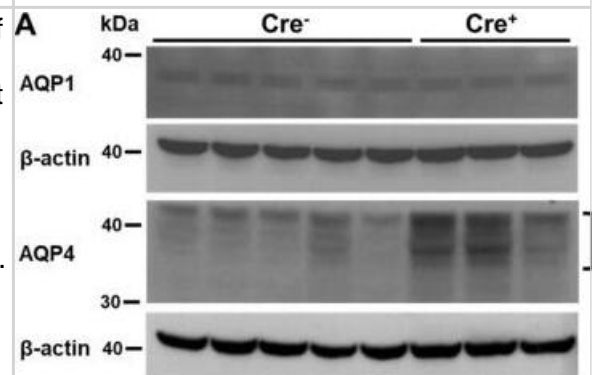
Immunohistochemistry-Frozen: Aquaporin-4 Antibody [NBP1-87679] - Mouse trigeminal ganglion stained with Aquaporin-4 antibody at 1:5000. Image submitted by a verified customer review



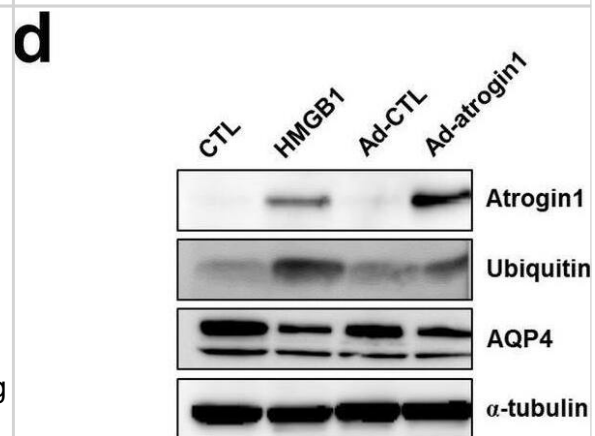
Induction of atrogin 1 mRNA and protein expression by rotator cuff tear (RCT). (a) Expression of transcripts encoding the E3 ubiquitin-protein ligases atrogin 1, MuRF1, and UBR2 in injured muscle after RCT (n = 12 per group). (b) Atrogin 1 protein expression in muscle isolated at different stages after RCT (n = 7 per group). Densitometric analyses of the western blots are shown on the right. Data represent means +/- standard errors of the means. *P < 0.05. (c) Immunofluorescence (IF) microscopy analyses of muscle isolated at different stages after RCT. The red signal represents atrogin 1 protein. The negative control (secondary antibody only) for the IF showed no specific signal (data not shown). (d) Loss of AQP4 protein by overexpression of atrogin 1. C2C12 cells were treated with an adenovirus expressing atrogin 1 [Ad-atrogin 1; multiplicity of infection (MOI) = 50, 100, 200] for 48 h, and western blot analysis was performed with each designated antibody. (e) Monomeric ubiquitin protein expression in muscle cells isolated at different stages after RCT. Image collected and cropped by CiteAb from the following open publication (<https://pubmed.ncbi.nlm.nih.gov/32843684>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



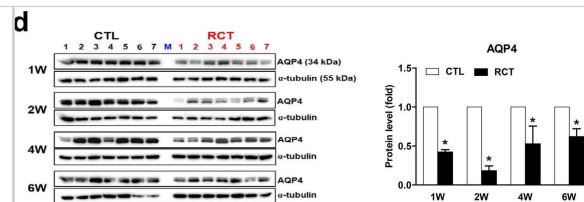
Aquaporin levels in the sulfatide deficient mouse brain. (A) Expression of AQP1 and AQP4 in Cre+ and Cre- cerebrum samples were measured by Western Blot and quantified (B,C). Multiple AQP4 bands with different levels of glycosylation were observed (bracket). (D) Representative immunofluorescence image for AQP4 (red) in the CST cKO mouse brain at 20 months of age. Scale bar: 250 μ m. (E) AQP4 immunofluorescent area around the lateral ventricle was quantified using Image J. Unpaired two-tailed t-test (normality and equal variance were assumed/confirmed). ** p < 0.01. Image collected and cropped by CiteAb from the following open publication (<https://pubmed.ncbi.nlm.nih.gov/36613677>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



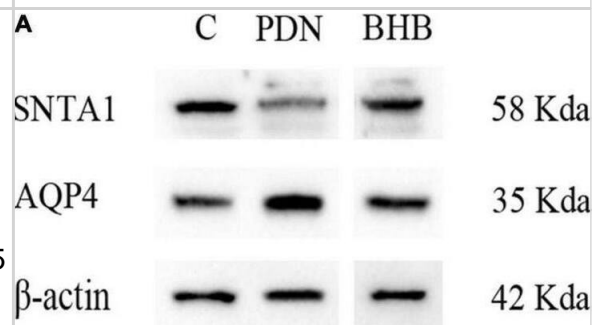
Increased levels of HMGB1 protein in muscle injured by rotator cuff tear (RCT). (a) Expression level of HMGB1 protein in muscle isolated at different stages after RCT (n = 7 per group). Densitometric analyses of the western blots are shown on the right. Data represent means +/- standard errors of the means. *P < 0.05. (b) Immunofluorescence (IF) microscopy analyses of muscle cells isolated at different stages after RCT. The green signal represents HMGB1 protein. The negative control (secondary antibody only) for the IF showed no specific signal (data not shown). (c) Expression of atrogin 1 mRNA in C2C12 myotubes treated with 200 ng/mL recombinant mouse HMGB1 for the indicated time periods. (d) Atrogin 1, ubiquitin, and AQP4 protein levels in C2C12 myotubes treated with 200 ng/mL HMGB1 and an adenovirus expressing atrogin 1 [Ad-atrogin 1; multiplicity of infection (MOI) = 100] for 48 h. (e) Ubiquitination of AQP4 caused by HMGB1 and atrogin 1. C2C12 myotubes were treated with 200 ng/mL HMGB1 and Ad-atrogin 1 (MOI = 100) with or without MG132. After 48 h of incubation, cell lysates were prepared for a ubiquitination assay using anti-AQP4 and anti-ubiquitin antibodies. (f) Expression of atrogin 1 mRNA in C2C12 myotubes exposed to 5 μ M SB203580 (a p38 MAPK inhibitor), LY294002 (a PI3K inhibitor), BAY 11-7082 (an NF- κ B inhibitor), PD98059 (an MEK inhibitor), or SP600125 (a JNK inhibitor). Cells were exposed to each inhibitor for 1 h prior to treatment with 200 ng/mL HMGB1 for 24 h. Image collected and cropped by CiteAb from the following open publication (<https://pubmed.ncbi.nlm.nih.gov/32843684>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Reduced aquaporin 4 (AQP4) protein levels in atrophied muscle following rotator cuff tear (RCT). (a) Reduced myofiber size in muscle injured by RCT. Magnified view of the H&E-stained muscle. Magnification, $\times 400$. Scale bar, $50 \mu\text{m}$. The yellow dotted line indicates the muscle myofiber. (b) Myofiber size in control (CTL) and RCT muscles. The size of each dotted area was measured using ImageJ software. $*P < 0.05$. (c) Western blot analyses for myosin heavy chain (MYH) protein expression between control and the injured muscle after RCT ($n = 7$ per group). Densitometric analyses of the western blots are shown in the graphs. Data represents mean \pm SEM. $*p < 0.05$. (d) Reduced aquaporin 4 (AQP4) protein levels in atrophied muscle following RCT ($n = 7$ per group). Densitometric analyses of the western blots are shown on the right. Data represent means \pm standard errors of the means. $*P < 0.05$. (e) Immunofluorescence microscopy analyses of muscle cells isolated at different stages after RCT ($n = 3$ per group). The green signal in each panel represents membranous AQP4 protein and the blue signal represents cell nuclei. Magnification, $\times 200$. Scale bar, $100 \mu\text{m}$. Image collected and cropped by CiteAb from the following open publication (<https://pubmed.ncbi.nlm.nih.gov/32843684>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Western blot results. (A) Western blot analysis of SNTA1 and AQP4 protein expression in Group C, Group PDN, and Group BHB. (B) Relative protein expression of SNTA1 and AQP4. Due to the reason that some blots in the original saved images were not mentioned in the present study, we spliced the blots and the typical ones were chosen to indicate the differences in the expression of proteins. Refer to Figure 1 for the meaning of the grouping abbreviation. Values were presented as mean \pm SEM. $*p < 0.05$ compared with values in Group PDN. $\#p < 0.05$ compared with values in Group C. SNTA1 means α -syntrophin, and AQP4 means aquaporin-4 protein. Image collected and cropped by CiteAb from the following open publication (<https://pubmed.ncbi.nlm.nih.gov/35898407>), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Publications

Lee B, Kuo Y, Cheng L et al. The Significance and Mechanism of Cerebral Enlarged Perivascular Space in Amyotrophic Lateral Sclerosis. *International Journal of Molecular Sciences* 2025-10-16 [PMID: 41096741]

Piatti, L;Batzilla, A;Nakaki, F;Fleckenstein, H;Korbmacher, F;Long, RKM;Schraivogel, D;Hawkins, JA;Romero-Uruñuela, T;López-Gutiérrez, B;Sanz Sender, S;Schwab, Y;Steinmetz, LM;Sharpe, J;Bernabeu, M; Plasmodium falciparum egress disrupts endothelial junctions and activates JAK-STAT signaling in a microvascular 3D blood-brain barrier model *Nature communications* 2025-08-06 [PMID: 40769972]

Palavicini JP, Ding L, Pan M et al. Sulfatide Deficiency, an Early Alzheimer's Lipidomic Signature, Causes Brain Ventricular Enlargement in the Absence of Classical Neuropathological Hallmarks *International Journal of Molecular Sciences* 2022-12-23 [PMID: 36613677] (Immunohistochemistry, Immunocytochemistry/ Immunofluorescence, Human)

Munro DAD, Bestard-Cuche N, McQuaid C, Chagnot A et Al. Microglia protect against age-associated brain pathologies *Neuron* 2024-06-19 [PMID: 38897208]

Yang Q, Yasvoina M, Olvera-Barrios A et al. Deciphering the Connection Between Microvascular Damage and Neurodegeneration in Early Diabetic Retinopathy *Diabetes* 2024-11-01 [PMID: 38968415]

C Beretta, E Svensson, A Dakhel, M Zyśk, J Hanrieder, D Sehlin, W Michno, A Erlandsson Amyloid- β deposits in human astrocytes contain truncated and highly resistant proteoforms. *Molecular and cellular neurosciences* 2024-01-18 [PMID: 38244652]

Micha?ek K, Oberska P, Murawski M et al. Kidney morphology and renal expression of aquaporins 2, 3 and 4 during cerulein - Induced chronic pancreatitis in pigs *Advances in medical sciences* 2023-09-12 [PMID: 37708639] (WB, IHC-Fr, Porcine)

Konstantinidis E, Dakhel A, Beretta C, Erlandsson A Long-term effects of amyloid-beta deposits in human iPSC-derived astrocytes *Molecular and cellular neurosciences* 2023-03-11 [PMID: 36907531] (Western Blot, Immunocytochemistry/ Immunofluorescence, Human)

Wypych A, Dunis?awska A, Grabowska M et al. Effects of three-month feeding high-fat diets with different fatty acid composition on kidney histology and expression of genes related to cellular stress and water-electrolyte homeostasis in mice *Journal of Animal and Feed Sciences* 2023-06-22 (Immunohistochemistry-Paraffin, Mouse)

Zy?k M, Beretta C, Naia L et al. Amyloid- β accumulation in human astrocytes induces mitochondrial disruption and changed energy metabolism *Journal of neuroinflammation* 2023-02-20 [PMID: 36803838] (Immunocytochemistry/ Immunofluorescence)

Xu C, Wang F, Su C et al. Restoration of aquaporin-4 polarization in the spinal glymphatic system by metformin in rats with painful diabetic neuropathy *Neuroreport* 2023-02-01 [PMID: 36719843] (WB, IHC-P, Rat)

Wang GQ, Wang FX, He YN, Lin JY Plasticity of the spinal glymphatic system in male SD rats with painful diabetic neuropathy induced by type 2 diabetes mellitus *Journal of neuroscience research* 2022-07-07 [PMID: 35796387]

More publications at <http://www.novusbio.com/NBP1-87679>



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NBP1-87679PEP	Aquaporin-4 Recombinant Protein Antigen
NBP2-33376H	Blue Marker Antibody (6F4-F6) [HRP]
HAF008	Goat anti-Rabbit IgG Secondary Antibody [HRP]
NB7160	Goat anti-Rabbit IgG (H+L) Secondary Antibody [HRP]
NBP2-24891	Rabbit IgG Isotype Control

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