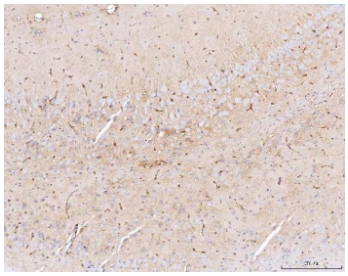
AQP-4 Antibody / Mercurial-Insensitive Water Channel Antibody (RQ7058)

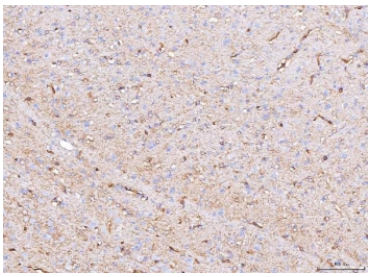
Catalog No.	Formulation	Size
RQ7058	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

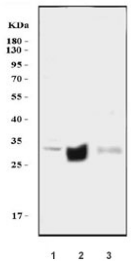
Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	P55087
Localization	Cytoplasm, cell membrane
Applications	Western blot: 0.5-1 ug/ml Immunohistochemistry (FFPE): 2-5ug/ml Flow cytometry: 1-3ug/million cells Direct ELISA: 0.1-0.5ug/ml
Limitations	This AQP-4 Antibody / Mercurial-Insensitive Water Channel Antibody is available for research use only.



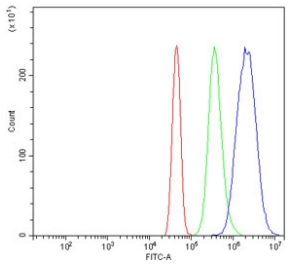
AQP-4 Antibody Staining in Mouse Brain IHC. Immunohistochemistry staining of FFPE mouse brain tissue using AQP-4 Antibody shows brown labeling distributed throughout the neural tissue, including fine cellular processes and vascular-associated structures. HIER was performed by boiling tissue sections in pH 8 EDTA for 20 min followed by cooling before testing. The staining pattern demonstrates detection of AQP4 in mouse brain sections using this Mercurial-Insensitive Water Channel Antibody.



AQP-4 Antibody Staining in Rat Brain IHC. Immunohistochemistry staining of FFPE rat brain tissue using AQP-4 Antibody shows distinct brown labeling of fine processes and vascular-associated structures throughout the section. HIER was performed by boiling tissue sections in pH 8 EDTA for 20 min followed by cooling before testing. The distribution is consistent with the characteristic enrichment of AQP4 in astrocytic processes and demonstrates rat brain tissue detection with this Mercurial-Insensitive Water Channel Antibody.



AQP-4 Antibody Detection in Human, Rat and Mouse Lysates WB. Western blot testing using AQP-4 Antibody shows immunoreactive bands within the expected approximately 35-45 kDa range for AQP4. Lane 1: human U-87 MG glioblastoma cell lysate; lane 2: rat brain tissue lysate; lane 3: mouse brain tissue lysate. The rat brain sample produces the strongest signal, while discrete bands are also visible in the human and mouse samples. Differences in apparent molecular weight can reflect AQP4 glycosylation. The three-species result demonstrates detection using this Mercurial-Insensitive Water Channel Antibody.



AQP-4 Antibody Detection in Human A431 Epidermoid Carcinoma Cells FACS. Flow cytometry analysis of human A431 epidermoid carcinoma cells using AQP-4 Antibody at 1 ug/million cells shows a clear rightward shift of the antibody-stained population (blue) relative to the isotype control (green) and cells-alone control (red). Cells were blocked with goat sera before staining. The separation of the blue population from both controls demonstrates detection of AQP4 in A431 cells using this Mercurial-Insensitive Water Channel Antibody.

Description

AQP-4 Antibody recognizes aquaporin 4 (AQP4), an integral membrane water channel responsible for rapid and selective movement of water across cell membranes. AQP4 belongs to the aquaporin family of channel proteins and contributes to the regulation of tissue water balance and cellular responses to osmotic changes. The protein is also historically known as the mercurial-insensitive water channel, reflecting its functional distinction from aquaporins whose water permeability is inhibited by mercury compounds.

AQP4 is the predominant water channel in the central nervous system and is particularly abundant in astrocytes. Within the brain, AQP4 is highly concentrated at astrocytic endfeet surrounding blood vessels and at other interfaces involved in water exchange. This polarized localization supports important roles in brain water homeostasis, extracellular fluid regulation, and the movement of water between vascular and neural compartments. AQP4 is also expressed outside the nervous system, where it participates in physiological water transport in several epithelial and other specialized tissues.

AQP4 exists primarily as the M1 and M23 isoforms, which arise through alternative translation initiation. Individual AQP4 proteins assemble into tetramers within the plasma membrane, while M23-rich tetramers can further organize into higher-order orthogonal arrays of particles. Changes in the expression, localization, or organization of AQP4 are studied in relation to cerebral edema, tissue injury, inflammation, and other conditions involving disturbed fluid homeostasis. AQP4 is also the major autoantigen in neuromyelitis optica spectrum disorder, where pathogenic antibodies recognize extracellular regions of the channel.

This Mercurial-Insensitive Water Channel Antibody is a rabbit polyclonal generated against a recombinant fragment corresponding to amino acids 247-323 of human AQP4. The immunogen encompasses a C-terminal region of the protein and provides a reagent for investigating AQP4 expression and water-channel biology. NSJ Bioreagents supplies this antibody for research use only.

An AQP-4 Antibody can be used to investigate aquaporin 4 expression and its relationship to membrane water transport, astrocyte biology, tissue fluid regulation, and physiological or pathological changes in water homeostasis.

Application Notes

Optimal dilution of the AQP-4 Antibody / Mercurial-Insensitive Water Channel Antibody should be determined by the researcher.

Immunogen

Recombinant human protein (amino acids L247-V323) was used as the immunogen for the Aquaporin 4 / AQP-4 antibody.

Storage

After reconstitution, the Aquaporin 4 / AQP-4 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

AQP4 antibody, aquaporin 4 antibody, aquaporin-4 antibody, mercurial insensitive water channel antibody, MIWC antibody, WCH4 antibody

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