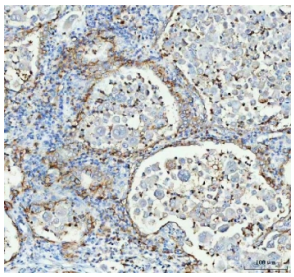
AQP4 Antibody / Aquaporin 4 Polyclonal Antibody (R32145)

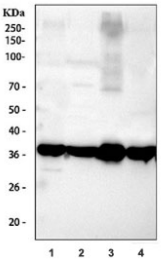
Catalog No.	Formulation	Size
R32145	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

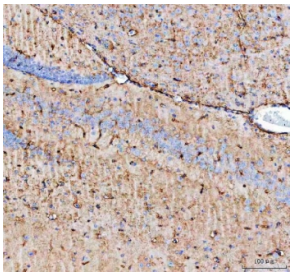
Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	P55087
Applications	Western blot: 0.5-1ug/ml Immunohistochemistry (Frozen): 0.5-1ug/ml Immunohistochemistry (FFPE): 2-5ug/ml
Limitations	This AQP4 Antibody / Aquaporin 4 Polyclonal Antibody is available for research use only.



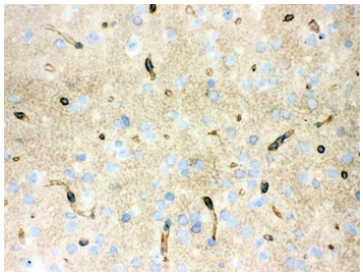
AQP4 Antibody Staining in Human Lung Cancer IHC. Immunohistochemistry staining of FFPE human lung cancer tissue using AQP4 Antibody shows distinct brown staining associated with epithelial/tumor structures, with stronger signal along portions of the cell periphery and surrounding tissue architecture. HIER was performed by boiling sections in pH 8 EDTA buffer for 20 min followed by cooling prior to staining. This tissue-based staining demonstrates detection with the Aquaporin 4 Polyclonal Antibody in human FFPE sections.



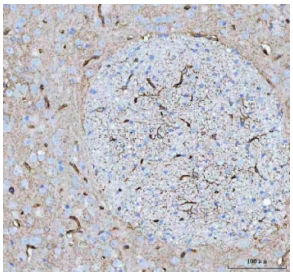
AQP4 Antibody Detection in Rat and Mouse Brain WB. Western blot testing of rat and mouse brain tissue lysates using AQP4 Antibody shows a strong predominant band at approximately 35-40 kDa in all four lanes. Lanes 1-2 contain rat brain and lanes 3-4 contain mouse brain. Additional higher molecular weight signal is visible, particularly in lane 3. AQP4 is known to migrate within an approximately 35-45 kDa range depending on glycosylation. The consistent major band across both species demonstrates detection of AQP4 with this Aquaporin 4 Polyclonal Antibody.



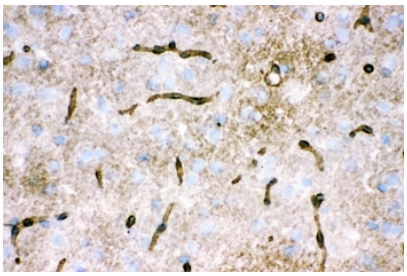
AQP4 Antibody Staining in FFPE Mouse Brain IHC. Immunohistochemistry staining of FFPE mouse brain using AQP4 Antibody shows widespread brown signal with a fine membranous and process-associated pattern throughout the neural tissue. HIER was performed by boiling sections in pH 8 EDTA buffer for 20 min followed by cooling prior to staining. The distribution is consistent with the characteristic localization of AQP4 within astrocytic processes and demonstrates tissue detection using this Aquaporin 4 Polyclonal Antibody.



AQP4 Antibody Staining in Frozen Mouse Brain IHC. Immunohistochemistry staining of frozen mouse brain using AQP4 Antibody shows discrete dark brown labeling of elongated vascular-associated structures and fine cellular processes against relatively low background. The prominent vessel-associated pattern is consistent with enrichment of AQP4 at astrocytic endfeet surrounding the cerebral microvasculature. This frozen-tissue result complements the FFPE mouse brain staining obtained with the Aquaporin 4 Polyclonal Antibody.



AQP4 Antibody Staining in FFPE Rat Brain IHC. Immunohistochemistry staining of FFPE rat brain using AQP4 Antibody shows distinct brown labeling of vascular-associated structures and surrounding neural tissue. Particularly prominent staining is visible along small vessels and fine processes, consistent with the characteristic perivascular distribution of AQP4 in astrocytic endfeet. HIER was performed by boiling sections in pH 8 EDTA buffer for 20 min followed by cooling prior to staining. This pattern demonstrates rat brain tissue detection using the Aquaporin 4 Polyclonal Antibody.



AQP4 Antibody Staining in Frozen Rat Brain IHC. Immunohistochemistry staining of frozen rat brain using AQP4 Antibody shows strong, sharply defined labeling of vascular-associated structures and fine processes within the surrounding neural tissue. The prominent perivascular pattern is consistent with enrichment of AQP4 at astrocytic endfeet associated with the cerebral microvasculature. The staining provides complementary frozen-tissue evidence for detection of rat AQP4 using this Aquaporin 4 Polyclonal Antibody

Description

AQP4 Antibody recognizes aquaporin 4 (AQP4), an integral membrane water channel that facilitates selective movement of water across cell membranes. AQP4 belongs to the aquaporin family and contributes to fluid homeostasis in multiple tissues by providing a pathway for rapid transmembrane water transport. Its abundance and membrane localization can influence cellular responses to osmotic changes and the distribution of water between physiological compartments.

AQP4 is particularly abundant in the central nervous system, where it is strongly associated with astrocytes and concentrated at astrocytic endfeet adjacent to blood vessels and other fluid interfaces. This polarized distribution contributes to brain water balance and extracellular fluid regulation. AQP4 also has important functions outside the nervous system and is expressed in several epithelial and other water-transporting tissues, reflecting a broader physiological role in tissue fluid movement and homeostasis.

AQP4 occurs in multiple molecular forms, including the well-characterized M1 and M23 isoforms generated through alternative translation initiation. AQP4 proteins assemble as tetramers in the plasma membrane, and M23-containing channels can organize into larger structures known as orthogonal arrays of particles. Changes in AQP4 abundance, localization, and organization are studied in edema, tissue injury, inflammatory processes, and neurological disorders.

AQP4 is also the principal autoantigen associated with neuromyelitis optica spectrum disorder, in which pathogenic autoantibodies recognize extracellular regions of the channel.

This Aquaporin 4 Polyclonal Antibody is a rabbit polyclonal generated against a peptide from human AQP4. The polyclonal format provides a population of antibodies recognizing the immunizing AQP4 region and offers a complementary reagent to monoclonal antibodies directed against this water channel. NSJ Bioreagents supplies this antibody for research use only.

An AQP4 Antibody can be used to investigate aquaporin 4 expression and its relationship to membrane water transport, fluid homeostasis, tissue physiology, astrocyte biology, and disorders involving altered AQP4 expression or localization.

For an AQP4 monoclonal with complementary Western blot, IHC, and protein microarray validation, see our Aquaporin 4 Antibody AQP4/3321 / AQP4 Monoclonal Antibody page.

Application Notes

Optimal dilution of the AQP4 Antibody / Aquaporin 4 Polyclonal Antibody should be determined by the researcher.

Immunogen

Amino acids KPGVVHVIDVDRGEEKKGKDQSGEVLSSV of human Aquaporin 4 were used as the immunogen for the AQP4 antibody.

Storage

After reconstitution, the AQP4 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

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

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