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Product datasheet for TA329023

Aqp4 Rabbit Polyclonal Antibody

Product data:

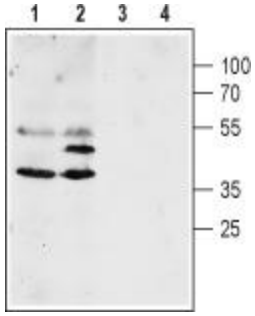
Product Type:	Primary Antibodies
Applications:	IF, IHC, WB
Recommended Dilution:	WB: 1:200-1:2000; IHC: 1:100-1:3000
Reactivity:	Mouse, Rat
Host:	Rabbit
Clonality:	Polyclonal
Immunogen:	Peptide (C)HVIDIDRGDEKKGKD, corresponding to amino acid residues 300-314 of rat AQP4 (Accession P47863). Intracellular, C-terminus.
Formulation:	Lyophilized. Concentration before lyophilization ~0.8mg/ml (lot dependent, please refer to CoA along with shipment for actual concentration). Buffer before lyophilization: Phosphate buffered saline (PBS), pH 7.4, 1% BSA, 0.05% NaN3.
Reconstitution Method:	Add 50 ul double distilled water (DDW) to the lyophilized powder.
Purification:	Affinity purified on immobilized antigen.
Conjugation:	Unconjugated
Storage:	Store at -20°C as received.
Stability:	Stable for 12 months from date of receipt.
Gene Name:	aquaporin 4
Database Link:	NP_036957 Entrez Gene 11829 MouseEntrez Gene 25293 Rat P47863

View online »

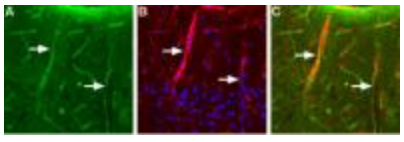
Background: Aquaporin 4 (AQP-4) belongs to a family of membrane proteins that allow passage of water and certain solutes through biological membranes. The family is composed of 13 members (AQP-0 to AQP-12). The aquaporins can be divided into two functional groups based on their permability characteristics: the aquaporins that are only permeated by water and the aquaglyceroporins that are permeated by water and other small solutes such as glycerol. AQP-4 together with AQP-1, AQP-2 and AQP-5 belong to the first group. Little is known about the function of the two newest members, AQP-11 and AQP-12. The proteins present a conserved structure of six transmembrane domains with intracellular N- and C-termini. The functional channel is a tetramer but each subunit has a separate pore and therefore the functional channel unit, contains four pores. AQP-4 is the major membrane water channel in the central nervous system. The channel is expressed in astrocyte foot processes in direct contact with capillary vessels in the brain suggesting a role in water transport under normal and pathological conditions. Indeed, transgenic mice lacking AQP-4 have reduced brain swelling and improved neurological outcome following water intoxication and focal cerebral ischemia. In contrast, brain swelling and clinical outcome are worse in AQP-4- mice in models of vasogenic (fluid leak) edema caused by freeze-injury and brain tumor, probably due to impaired AQP-4-dependent brain water clearance. In addition, it has been recently shown that neuromyelitis optica (NMO), an inflammatory demyelinating disease that selectively affects optic nerves and spinal cord, is caused by the development of an autoantibody directed against AQP-4.

Synonyms: AQP-4; aquaporin-4; HMIWC2; MGC22454; MIWC; WCH4

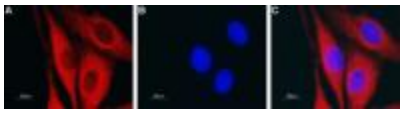
Product images:



Western blot analysis of mouse (lanes 1 and 3) and rat (lanes 2 and 4) brain lysates: 1, 2. Anti-Aquaporin 4 (300-314) antibody, (1:200). 3, 4. Anti-Aquaporin 4 (300-314) antibody, preincubated with the control peptide antigen.



IHC staining of rat brain using Anti-Aquaporin 4 (300-314) antibody, (1:200). A. Aquaporin 4 (green) is detected in blood vessels in layers 1-3 of rat neocortex. B. Astrocytic processes were stained using mouse anti glial fibrillary acidic protein (GFAP) (red) and DAPI (blue) was used to delineate the cortical layers. C. Merge of aquaporin 4 and GFAP shows overlap along blood vessels (arrows) in agreement with the role of astrocytes and aquaporin 4 in regulation of the blood brain barrier.



Expression of Aquaporin 4 in rat glioma C6 cells. Immunocytochemical staining of fixed and permeabilized rat glioma C6 cells. A. Cells were stained with Anti-Aquaporin 4 (300-314) antibody, (1:200), followed by goat anti-rabbit-AlexaFluor-594 secondary antibody (red). B. Cell nuclei were visualized using Hoechst 33342 (blue). C. Merge of the two images.