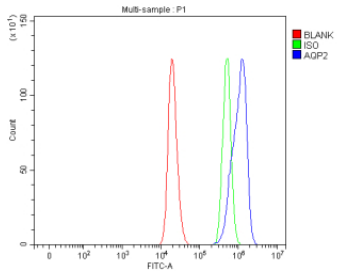
Aqp2 Antibody / Aquaporin 2 (FY12418)

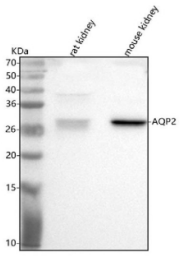
Catalog No.	Formulation	Size
FY12418	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Mouse, Rat
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	P56402
Applications	Western Blot : 0.25-0.5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This Aqp2 antibody is available for research use only.



Flow Cytometry analysis of mouse RAW264.7 cells using anti-Aqp2 antibody. Overlay histogram showing RAW264.7 cells stained with (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-Aqp2 antibody (1 ug/million cells) for 30 min at 20oC. DyLight 488 conjugated goat anti-rabbit IgG (5-10 ug/million cells) was used as secondary antibody for 30 minutes at 20oC. Isotype control antibody (Green line) was rabbit IgG (1 ug/million cells) used under the same conditions. Unlabelled sample (Red line) was also used as a control.



Western blot analysis of Aqp2 using anti-Aqp2 antibody. Lane 1: rat kidney tissue lysates, Lane 2: mouse kidney tissue lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-Aqp2 antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using enhanced chemiluminescent. The protein is routinely visualized from 29-46 kDa depending on glycosylation level.

Description

The AQP2 antibody targets Aquaporin-2, a water channel protein encoded by the AQP2 gene. Aquaporin-2 is an essential component of the kidney's water reabsorption system, located in the apical membrane of collecting duct principal cells. It mediates vasopressin-regulated water transport, thereby controlling urine concentration and maintaining body fluid balance. The AQP2 antibody enables researchers to study renal physiology, osmoregulation, and disorders of water homeostasis such as diabetes insipidus.

Aquaporin-2 belongs to the aquaporin family of integral membrane proteins that selectively transport water across biological membranes. Under the influence of the antidiuretic hormone vasopressin, AQP2-containing vesicles are trafficked to and fused with the apical plasma membrane, increasing water permeability. The AQP2 antibody provides a reliable means to visualize this regulated translocation process, making it a key tool for examining vasopressin signaling and collecting duct responsiveness.

Mutations in the AQP2 gene lead to nephrogenic diabetes insipidus (NDI), characterized by excessive urine production and an inability to concentrate urine despite normal vasopressin levels. The AQP2 antibody supports research into this condition by enabling detection of defective or mislocalized Aquaporin-2 in renal tissue. Experimental models show that AQP2 deficiency disrupts water retention and contributes to dehydration, underscoring its clinical relevance in renal water management.

Beyond kidney physiology, Aquaporin-2 has been detected in reproductive tissues and the central nervous system, suggesting broader roles in fluid transport and homeostasis. The AQP2 antibody supports such investigations, allowing comparative expression analysis across tissues and experimental conditions. Regulation of AQP2 expression and trafficking involves multiple pathways including cyclic AMP, protein kinase A, and ubiquitination-dependent endocytosis.

The AQP2 antibody performs effectively in western blotting, immunohistochemistry, and immunofluorescence, producing distinct apical membrane staining in kidney tissue. NSJ Bioreagents provides this antibody with verified specificity and reproducibility for renal physiology, endocrinology, and molecular signaling research. By enabling precise detection of Aquaporin-2, the AQP2 antibody advances understanding of water transport regulation and the molecular mechanisms underlying disorders of water balance.

Application Notes

Optimal dilution of the Aqp2 antibody should be determined by the researcher.

Immunogen

E.coli-derived mouse Aqp2 recombinant protein (Position: A102-A271) was used as the immunogen for the Aqp2 antibody.

Storage

After reconstitution, the Aqp2 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.