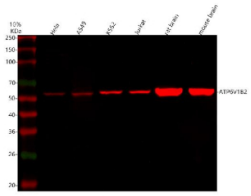
ATP6V1B2 Antibody / ATPase H+ transporting V1 subunit B2 (FY12679)

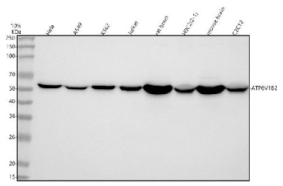
Catalog No.	Formulation	Size
FY12679	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
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	P21281
Applications	Western Blot : 0.25-0.5ug/ml
Limitations	This ATP6V1B2 antibody is available for research use only.



Western blot analysis of ATP6V1B2 using anti-ATP6V1B2 antibody. Lane 1: human Hela whole cell lysates, Lane 2: human whole cell lysates, Lane 3: human K562 whole cell lysates, Lane 4: human Jurkat whole cell lysates, Lane 5: rat brain tissue lysates, Lane 6: mouse brain 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-ATP6V1B2 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-DyLight 647 Conjugated secondary antibody at a dilution of 1:2000 for 1.5 hour at RT. A specific band was detected for ATP6V1B2 at approximately 57 kDa. The expected molecular weight of ATP6V1B2 is ~57 kDa.



Western blot analysis of ATP6V1B2 using anti-ATP6V1B2 antibody. Lane 1: human Hela whole cell lysates, Lane 2: human whole cell lysates, Lane 3: human K562 whole cell lysates, Lane 4: human Jurkat whole cell lysates, Lane 5: rat brain tissue lysates, Lane 6: rat H9C2(2-1) whole cell lysates, Lane 7: mouse brain tissue lysates, Lane 8: mouse C2C12 whole cell 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-ATP6V1B2 antibody at 0.25 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. A specific band was detected for ATP6V1B2 at approximately 57 kDa. The expected molecular weight of ATP6V1B2 is ~57 kDa.

Description

ATP6V1B2 antibody recognizes ATPase H+ transporting V1 subunit B2, a catalytic subunit of the vacuolar ATPase (V-ATPase) complex that mediates proton translocation across intracellular membranes. V-ATPases are multi-subunit enzymes responsible for acidifying organelles such as endosomes, lysosomes, the Golgi apparatus, and synaptic vesicles, thereby regulating protein sorting, receptor recycling, and neurotransmitter loading. The B2 subunit encoded by the ATP6V1B2 gene provides ATP-hydrolytic activity within the V1 sector of the complex, coupling energy derived from ATP hydrolysis to proton pumping through the V0 membrane domain. This process maintains intracellular pH homeostasis, a prerequisite for vesicular trafficking, autophagy, and enzymatic activity within acidic compartments.

ATP6V1B2 is highly expressed in neural tissues, particularly in neurons where acidification of synaptic vesicles supports neurotransmitter storage and release. The protein localizes to the cytoplasmic side of vesicular membranes and interacts with other V1 subunits including A, D, and E to form the catalytic hexameric headpiece. Genetic studies have linked mutations in ATP6V1B2 to dominant deafness-onychodystrophy syndrome, characterized by hearing loss and nail dysplasia, and to developmental disorders with epilepsy, underscoring its physiological importance in neural and epithelial systems. By sustaining organelle acidification, ATP6V1B2 ensures correct maturation of lysosomal enzymes and degradation of endocytosed material, influencing neuronal viability and metabolic turnover.

The ATP6V1B2 antibody is used in neuroscience, cell biology, and pathology research to examine the localization and function of V-ATPase complexes. Immunofluorescence and immunohistochemistry reveal strong punctate staining in synaptic regions, consistent with the protein's vesicular distribution. In biochemical assays, western blot detection with this antibody confirms the ~56 kilodalton B2 subunit and can distinguish it from the related B1 isoform (ATP6V1B1) found mainly in kidney and inner ear epithelia. Because of its neural enrichment, ATP6V1B2 serves as a marker for vesicle acidification and proton pump activity in brain tissue and cultured neurons.

Research indicates that ATP6V1B2 also participates in cellular signaling and autophagy. V-ATPase activity influences mTORC1 localization and nutrient-sensing pathways by regulating lysosomal pH. Deficiency of ATP6V1B2 disrupts these mechanisms, impairing cell growth and autophagic flux. The antibody thus enables studies investigating the intersection of metabolism, membrane transport, and neurodegenerative disease. Alterations in V-ATPase function have been observed in Alzheimer's and Parkinson's disease models, making ATP6V1B2 a potential biomarker for vesicular dysfunction. NSJ Bioreagents provides this antibody validated for high specificity and compatibility with multiple applications, supporting research into acidification dynamics and organelle physiology.

Application Notes

Optimal dilution of the ATP6V1B2 antibody should be determined by the researcher.

Immunogen

A synthetic peptide corresponding to a sequence at the C-terminus of human ATP6V1B2 was used as the immunogen for the ATP6V1B2 antibody.

Storage

After reconstitution, the ATP6V1B2 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.