Technical Data Sheet

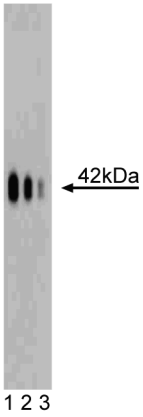
Purified Mouse Anti-Human Na+, K+ ATPase β3

Product Information

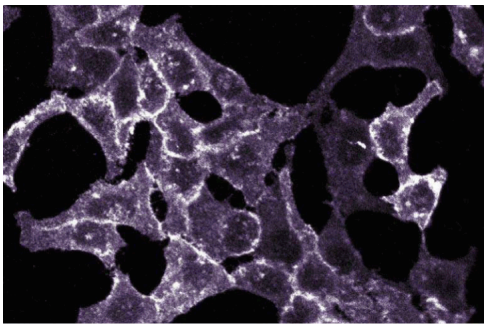
Material Number:	**610993**
Size:	150 µg
Concentration:	250 µg/ml
Clone:	46/Na+,K+ ATPase β3
Immunogen:	Human Na+, K+ ATPase β3 aa. 124-243
Isotype:	Mouse IgG1
Reactivity:	QC Testing: Human
Target MW:	42 kDa
Storage Buffer:	Aqueous buffered solution containing BSA, glycerol, and ≤0.09% sodium azide.

Description

Na+,K+-ATPase is an integral plasma membrane protein that maintains the intracellular concentrations of Na+ and K+ ions. It is a P class pump that is composed of two α and two β transmembrane subunits. It is also thought to contain a γ subunit. The 120 kDa α subunit represents the catalytic site. Although the 50 kDa β subunit mediates proper folding of newly synthesized α subunits, it is not directly involved in ion transfer. There are four known α isoforms (α1, α2, α3, and α4) and three β isoforms (β1, β2, and β3). The Na+,K+-ATPase is ubiquitously expressed in the plasma membrane. However, the individual subunits have different tissue distributions: α1 is ubiquitous; α2 is in skeletal muscle, brain, and heart; α3 is in brain and heart; α4 is present in testis and skeletal muscle; β1 is in most tissues; and β2 is primarily in neural tissues. Different combinations of the α and β subunits can alter the kinetics of enzyme activity. The Na+,K+-ATPase transfers three Na+ ions out of, and two K+ ions into, the cell upon hydrolysis of one ATP molecule. Maintenance of intracellular Na+,K+ levels is necessary for volume regulation, action potentials, and secondary active transport.



Western blot analysis of Na+,K+ ATPase β3 on a human endothelial cell lysate. *Lane 1: 0.25 µg/mL, lane 2: 0.125 µg/mL, lane 3: 0.0625 µg/mL of the mouse anti-human Na+, K+ ATPase β3 antibody.*



Immunofluorescence staining of HeLa cells (Human cervical epitheloid carcinoma; ATCC CCL-2).

Preparation and Storage

Store undiluted at -20°C.

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.

Application Notes

Application

Western blot	Routinely Tested
Immunofluorescence	Tested During Development

Recommended Assay Procedure:

Western blot: Please refer to http://www.bdbiosciences.com/pharmingen/protocols/Western_Blotting.shtml

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Suggested Companion Products

Catalog Number	Name	Size	Clone
554002	HRP Goat Anti-Mouse Ig	1.0 ml	(none)
554001	FITC Goat Anti-Mouse Ig	0.5 mg	Polyclonal
611450	Human Endothelial Cell Lysate	500 µg	(none)

Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Source of all serum proteins is from USDA inspected abattoirs located in the United States.
3. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
4. Please refer to www.bdbiosciences.com/pharmingen/protocols for technical protocols.

References

Hernando N, Martin-Vasallo P, Ghosh S, Ghosh PK, Swaroop A, Coca-Prados M. Nucleotide sequence of a cDNA for the beta 2 subunit isoform of Na+,K(+) -ATPase from human retina. *Biochim Biophys Acta.* 1994; 1189(1):109-111. (Biology)

Malik N, Canfield VA, Beckers MC, Gros P, Levenson R. Identification of the mammalian Na,K-ATPase 3 subunit. *J Biol Chem.* 1996; 271(37):22754-22758. (Biology)

Stengelin MK, Hoffman JF. Na,K-ATPase subunit isoforms in human reticulocytes: evidence from reverse transcription-PCR for the presence of alpha1, alpha3, beta2, beta3, and gamma. *Proc Natl Acad Sci U S A.* 1997; 94(11):5943-5948. (Biology)