



Product Information

MONOCLONAL ANTI- Na^+/K^+ ATPASE

($\alpha 1$ SUBUNIT)

CLONE 9A-5

Mouse Ascites Fluid

Product Number **A-275**

Product Description

Monoclonal Anti- Na^+/K^+ ATPase ($\alpha 1$ Subunit) (mouse IgG1) is produced by immunizing mice with purified rat kidney Na^+/K^+ ATPase as the immunogen.

This antibody localizes the Na^+/K^+ ATPase $\alpha 1$ subunit in human, canine, rat and avian tissues. Can be used to affinity purify the α subunit of Na^+/K^+ ATPase and to inhibit enzyme activity.

The Na^+/K^+ -ATPase is an integral membrane enzyme found in all cells of higher organisms and is responsible for the ATP-dependent transport of Na^+ and K^+ across the cell membrane. This membrane-bound enzyme is related to a number of other ATPases including the sarco(endo)plasmic reticulum Ca^{2+} ATPase (SERCA) and the plasma membrane Ca^{2+} -ATPase (PMCA). The Na^+/K^+ -ATPase consists of a large, multipass, transmembrane catalytic subunit, termed the α subunit, and an associated smaller glycoprotein, termed the β subunit. Studies indicate that there are three isoforms of the alpha subunit ($\alpha 1$, $\alpha 2$, $\alpha 3$) and two isoforms of the beta subunit ($\beta 1$ and $\beta 2$) which are encoded by two multigene families.

The different isoforms of the Na^+/K^+ -ATPase exhibit a tissue-specific and developmental pattern of expression. The $\alpha 1$ and β mRNAs are present in all cell types examined whereas the $\alpha 2$ and $\alpha 3$ mRNAs exhibit a more restricted pattern of cell-specific expression. The $\alpha 3$ subunit has been found in neuronal and to a lesser extent skeletal and cardiac muscle and lung and stomach tissues.

Reagents

Monoclonal Anti- Na^+/K^+ ATPase ($\alpha 1$ Subunit) is supplied as mouse ascites diluted in phosphate buffered saline (PBS) containing 0.05% sodium azide as a preservative.

Precautions and Disclaimer

Due to the sodium azide content a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. Storage in "frost-free" freezers is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

Recommended starting titer for Monoclonal Anti- Na^+/K^+ -ATPase ($\alpha 1$ subunit) is 1:1,000 by immunohistochemistry. This antibody can also be used for immunoprecipitation, however optimal titer should be determined by serial dilutions.

References

1. Schenk, D. B. et al. "Use of a monoclonal antibody to quantify (Na⁺/K⁺)-ATPase activity and sites in normal and regenerating rat liver." *J. Biol. Chem.* **259**, 14941-14951 (1984).
2. Hubert, J. J. et al. "Rat hepatic (Na⁺/K⁺)-ATPase: a-subunit isolation by immunoaffinity chromatography and structural analysis by peptide mapping." *Biochemistry* **25**, 4156-4163 (1986).
3. Leffert, H. L. et al. "Hepatic (Na⁺/K⁺)-ATPase: a current view of its structure, function and localization in rat liver as revealed by studies with monoclonal antibodies." *Hepatology* **5**, 501-507 (1985).
4. Schenk, D. B. et al. "Monoclonal antibodies to rat Na⁺/K⁺-ATPase block enzymatic activity." *Proc. Natl. Acad. Sci. USA* **80**, 5281-5285 (1983).

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