



Product Information

MONOCLONAL ANTI- Na^+/K^+ ATPase (α SUBUNIT) CLONE M7-PB-E9 Mouse Ascites Fluid

Product Number **A-276**

Product Description

Monoclonal Anti- Na^+/K^+ ATPase (α Subunit) (mouse IgG1 isotype) is produced in mice. Purified sheep kidney α subunit of the Na^+/K^+ ATPase was used as immunogen. Epitope mapping studies indicate the epitope is between amino acids 646 and 652 of the sheep kidney α subunit of Na^+/K^+ ATPase.

Monoclonal Anti- Na^+/K^+ ATPase (α Subunit) reacts specifically with Na^+/K^+ ATPase $\alpha 1$ subunit. The antibody may be used to localize and detect Na^+/K^+ ATPase $\alpha 1$ subunit (approx. 110 kD) by immunoblotting, immunohistochemistry, immunoprecipitation and ELISA. Reactivity with the $\alpha 1$ subunit is observed in human, sheep, canine, chicken, and pig tissues. It does not react with rat or *Xenopus* $\alpha 1$ subunit. In rat it reacts with the $\alpha 3$ subunit, but not with the $\alpha 2$ subunit. By immunohistochemistry, staining is consistent with the plasma membrane localization of Na^+/K^+ ATPase.

The Na^+/K^+ -ATPase is an integral membrane enzyme found in all cells of higher organisms and is responsible for ATP-dependent transport of Na^+ and K^+ across cell membranes. This membrane-bound enzyme is related to a number of other ATPases including the SERCA and PMCA. The Na^+/K^+ -ATPase consists of a large, multipass, transmembrane catalytic subunit; termed the alpha subunit, and an associated smaller glycoprotein, termed the beta 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 $\beta 2$) encoded by two multigene families.

Different isoforms of the Na^+/K^+ -ATPase exhibit tissue-specific and developmental patterns 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 subunit has been found in kidney, brain, heart, and to a lesser extent liver, skeletal and smooth muscle.

Reagents

Monoclonal Anti- Na^+/K^+ ATPase (α Subunit) is supplied as mouse ascites diluted with phosphate buffered saline and contains 0.05% sodium azide.

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

Store at $-20\text{ }^\circ\text{C}$. For extended storage, solution may be frozen in working aliquots. Storage in "frost-free" freezers is not recommended. Repeated freezing and thawing is not recommended. If slight turbidity occurs upon prolonged storage, clarify by centrifugation before use.

Product Profile

Recommended working dilution is 1:250 for immunoblotting and 1:100 for immunohistochemistry. However, optimal working concentration should be determined by serial dilutions.

References

1. Abbott, A. et al. *Biochemistry* **32**, 3511-3519 (1993).
2. Malik, B. et al. *Protein Sci.* **2**, 2103-2111 (1993).
3. Ball, W.J. et al. *Biochim. Biophys. Acta* **873**, 79-87 (1986).
4. Ball, W.J. et al. *Biochim. Biophys. Acta* **719**, 413-423 (1982).

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