

Na,K-ATPase α 1 (D4Y7E) Rabbit mAb (HRP Conjugate)

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	H	Endogenous	100	Rabbit IgG	#P05023	476

Product Usage Information**Application**

Western Blotting

Dilution

1:1000

Storage

Supplied in 136 mM NaCl, 2.6 mM KCl, 12 mM sodium phosphate (pH 7.4) dibasic, 2 mg/ml BSA, and 50% glycerol. Store at -20°C . Do not aliquot the antibody.

Specificity/Sensitivity

Na,K-ATPase α 1 (D4Y7E) Rabbit mAb (HRP Conjugate) recognizes endogenous levels of total Na,K-ATPase α 1 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Pro12 of human Na,K-ATPase α 1 protein.

Description

This Cell Signaling Technology antibody is conjugated to the carbohydrate groups of horseradish peroxidase (HRP) via its amine groups. The HRP conjugated antibody is expected to exhibit the same species cross-reactivity as the unconjugated Na,K-ATPase α 1 (D4Y7E) Rabbit mAb #23565.

Background

The Na,K-ATPase is an integral membrane heterodimer belonging to the P-type ATPase family. This ion channel uses the energy derived from ATP hydrolysis to maintain membrane potential by driving sodium export and potassium import across the plasma membrane against their electrochemical gradients. It is composed of a catalytic α subunit and a β subunit (reviewed in 1). Several phosphorylation sites have been identified for the α 1 subunit. Tyr10 is phosphorylated by an as yet undetermined kinase (2), Ser16 and Ser23 are phosphorylated by PKC, and Ser943 is phosphorylated by PKA (3-5). All of these sites have been implicated in the regulation of enzyme activity in response to hormones and neurotransmitters, altering trafficking and kinetic properties of Na,K-ATPase. Altered phosphorylation in response to angiotensin II stimulates activity in the rat proximal tubule (6). Na,K-ATPase is also involved in other signal transduction pathways. Insulin regulates its localization in differentiated primary human skeletal muscle cells, and this regulation is dependent on ERK1/2 phosphorylation of the α subunit (7). Na,K-ATPase and Src form a signaling receptor complex that affects regulation of Src kinase activity and, subsequently, its downstream effectors (8,9).

Background References

1. Therien, A.G. and Blostein, R. (2000) *Am J Physiol Cell Physiol* 279, C541-66.
2. Féraillé, E. et al. (1999) *Mol Biol Cell* 10, 2847-59.
3. Fisone, G. et al. (1994) *J Biol Chem* 269, 9368-73.
4. Feschenko, M.S. and Sweadner, K.J. (1995) *J Biol Chem* 270, 14072-7.
5. Beguin, P. et al. (1994) *J Biol Chem* 269, 24437-45.
6. Yingst, D.R. et al. (2004) *Am J Physiol Renal Physiol* 287, F713-21.
7. Al-Khalili, L. et al. (2004) *J Biol Chem* 279, 25211-8.
8. Tian, J. et al. (2006) *Mol Biol Cell* 17, 317-26.
9. Liang, M. et al. (2006) *J Biol Chem* 281, 19709-19.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween@ 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting

Cross-Reactivity Key

H: Human

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