

Na⁺/K⁺ ATPase β3

Mouse Monoclonal IgG1

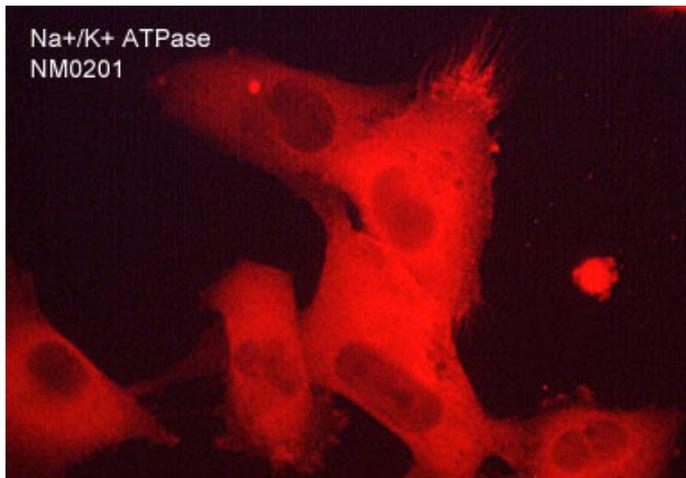
Cat. # NM0201
Size 100 μl

Background

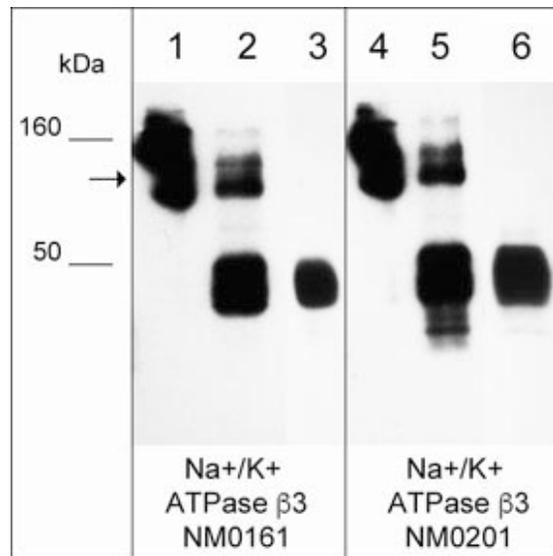
The Na⁺/K⁺ ATPase is an integral membrane heterodimer belonging to the P-type ATPase family. This ion channel uses the energy derived from ATP hydrolysis to maintain membrane potential by driving Na⁺ export and K⁺ import across the plasma membrane. It is composed of a large catalytic α subunit and a membrane-spanning auxiliary β subunit. In humans, the Na⁺/K⁺ -ATPase is a binary complex of an α subunit that has four isoforms (α1-α4) and a β-subunit that has three isoforms (β1 -β3). Na⁺/K⁺ ATPase subunit expression has been shown to be upregulated in cancers, and inhibition of Na⁺/K⁺ ATPase activity can cause anti-cancer effects. The β3 subunit of Na⁺/K⁺ ATPase has increased expression in human gastric cancer tissues and cell lines, and increased β3 subunit expression predicts poor patient outcome. β3 subunit knockdown significantly inhibited cell proliferation, colony-formation ability, migration, and invasion in human gastric carcinoma cell lines. Thus, the β3 subunit of the Na⁺/K⁺ ATPase may be an interesting biomarker and target for cancer therapies.

Background References

Yoshimura, SH et al. (2008) J Cell Sci. 121:2159.
Clausen, MV et al. (2017) Front Physiol. 8:371.
Li L, et al. (2017) Oncotarget. 8(48):84285.



Immunocytochemical labeling of Na⁺/K⁺ ATPase β3 in paraformaldehyde fixed human A549 cells. The cells were labeled with mouse monoclonal anti-Na⁺/K⁺ ATPase β3 (clone M020). The antibody was detected using goat anti-mouse Ig DyLight® 594.



Western blot using native conditions to examine NM0161 immunoprecipitates (IP) and whole lysates. The NM0161 antibody only (lane 1), IP from A431 cell lysate (lane 2), A431 cell input (lane 3). The blot was probed with anti-Na⁺/K⁺ ATPase β3 NM0161 (lanes 1-3) and anti-Na⁺/K⁺ ATPase β3 NM0201 (lanes 4-6). The arrow designates native antibody, while the β3 subunit migrates around 40 kDa.

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Na⁺/K⁺ ATPase β3

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Cat. # NM0201
Size 100 μl

Immunogen

Clone (M020) was generated from a recombinant human Na⁺/K⁺ ATPase β3 protein that includes amino acids in the extracellular region.

Buffer and Storage

Mouse monoclonal antibody purified with protein A chromatography is supplied in 100μl phosphate-buffered saline, 50% glycerol, 1 mg/ml BSA, and 0.05% sodium azide. Store at -20°C. Stable for 1 year.

Applications

WB	1:1000
ELISA	1:2000
ICC	1:50
IP	1:50

Species Reactivity

Hu

End user should determine optimal dilution for their particular applications and experiments.

Western blot membranes were incubated with diluted antibody in 5% non-fat milk, Tris buffer, 0.04% Tween20 for 1 hour at room temperature.

Abbreviations: E = ELISA, ICC = immunocytochemistry, IHC = immunohistochemistry, IP = immunoprecipitation, MS = mass spectrometry, WB = western blot
Hu = Human, Ms = Mouse, Rt = Rat, Ck = Chicken, F = Frog, B = Bovine

Specificity

Clone M020 mouse monoclonal antibody detects a 40 kDa* protein on SDS-PAGE immunoblots of human A431, LNCaP, MeWo, MDA-MB-231, and MCF7 cells. This antibody detects both the native and denatured forms of Na⁺/K⁺ ATPase β3 subunit. The antibody works for western blot, immunoprecipitation, ELISA, and immunocytochemistry.

*All molecular weights (MW) are confirmed by comparison to MW standards and to western blot mobilities of known proteins with similar MW.

"Native" western blot utilizes non-reducing sample buffer (no mercaptoethanol or SDS), normal SDS-PAGE gel electrophoresis, and no methanol in transfer buffers.

Related Products

NM0161 Na⁺/K⁺ ATPase β3 (Extracellular) Mouse Monoclonal

AK6060 Actin & Tubulin Antibody Sampler Kit

CK7700 Cell Structure Labeling Immunocytochemistry Kit

MK6050 MAP Kinase Activation Antibody Sampler Kit

CM4961 Connexin-43 (C-terminal region) Mouse Monoclonal

NM0251 Na⁺/K⁺ ATPase β3 (Extracellular) Mouse Monoclonal

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