

ATP4A (S-12): sc-167155

BACKGROUND

ATP4A (ATPase, H⁺/K⁺ exchanging, α polypeptide), also known as potassium-transporting ATPase α chain 1, gastric H⁺/K⁺ ATPase subunit α , proton pump or ATP6A, is a 1,035 amino acid multi-pass membrane protein that belongs to the cation transport ATPase (P-type) family and the type IIC subfamily. Encoded by a gene that maps to human chromosome 19q13.12, ATP4A is composed of two subunits: α (catalytic) and β , and is conserved in canine, bovine, mouse and rat. Expressed in gastric parietal cells, specifically in cytoplasmic vesicles or apical plasma membranes of the secretory canaliculus, ATP4A is responsible for acid production in the stomach. ATP4A catalyzes the hydrolysis of ATP, coupled with H⁺ and K⁺ ion exchange across the plasma membrane. ATP4A shares approximately 70% cDNA homology with the ATP1A3 gene.

REFERENCES

1. Sverdlov, E.D., et al. 1987. The family of human Na⁺,K⁺-ATPase genes. No less than five genes and/or pseudogenes related to the α -subunit. FEBS Lett. 217: 275-278.
2. Newman, P.R., et al. 1990. Structure of the human gastric H,K-ATPase gene and comparison of the 5'-flanking sequences of the human and rat genes. DNA Cell Biol. 9: 749-762.
3. Maeda, M., et al. 1990. Human gastric (H⁺ + K⁺)-ATPase gene. Similarity to (Na⁺ + K⁺)-ATPase genes in exon/intron organization but difference in control region. J. Biol. Chem. 265: 9027-9032.
4. Canfield, V.A., et al. 1990. Cloning of the H,K-ATPase β subunit. Tissue-specific expression, chromosomal assignment, and relationship to Na,K-ATPase β subunits. J. Biol. Chem. 265: 19878-19884.
5. Song, I., et al. 1992. Mapping of the gene encoding the α -subunit of the human H⁺,K⁺-ATPase to chromosome 19q13.1 by fluorescent *in situ* hybridization. Genomics 14: 547-548.
6. Judd, L.M., et al. 2005. Gastric achlorhydria in H/K-ATPase-deficient (Atp4a^{-/-}) mice causes severe hyperplasia, mucocystic metaplasia and upregulation of growth factors. J. Gastroenterol. Hepatol. 20: 1266-1278.

CHROMOSOMAL LOCATION

Genetic locus: ATP4A (human) mapping to 19q13.12; Atp4a (mouse) mapping to 7 B1.

SOURCE

ATP4A (S-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a cytoplasmic domain of ATP4A of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-167155 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

ATP4A (S-12) is recommended for detection of ATP4A of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

ATP4A (S-12) is also recommended for detection of ATP4A in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for ATP4A siRNA (h): sc-97188, ATP4A siRNA (m): sc-141344, ATP4A shRNA Plasmid (h): sc-97188-SH, ATP4A shRNA Plasmid (m): sc-141344-SH, ATP4A shRNA (h) Lentiviral Particles: sc-97188-V and ATP4A shRNA (m) Lentiviral Particles: sc-141344-V.

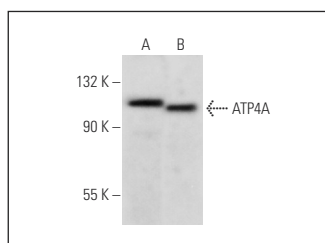
Molecular Weight of ATP4A: 114 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203 or NIH/3T3 whole cell lysate: sc-2210.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



ATP4A (S-12): sc-167155. Western blot analysis of ATP4A expression in K-562 (A) and NIH/3T3 (B) whole cell lysates.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.