OriGene Technologies Inc.

9620 Medical Center Drive, Ste 200
Rockville, MD 20850
UNITED STATES
Phone: +1-888-267-4436
Fax: +1-301-340-8606
techsupport@origene.com

OriGene EU

Acris Antibodies GmbH
Schillerstr. 5
32052 Herford
GERMANY
Phone: +49-5221-34606-0
Fax: +49-5221-34606-11
info@acris-antibodies.com

Monoclonal Antibody to ATP4B - Ascites

Alternate names: Gastric H(+)/K(+) ATPase subunit beta, Potassium-transporting ATPase subunit beta, Proton pump ATPase beta chain

Catalog No.: SM5117

Quantity: 0.1 ml

Background: The hydrogen/potassium ATPase, or gastric proton pump, belongs to a family of P-type cation-transporting ATPases. This family of ATPases shares a number of functional and structural similarities including the common feature of consisting of an alpha and beta subunit. Like the ubiquitous sodium/potassium ATPase, the hydrogen/potassium ATPase consists of a large transmembrane catalytic subunit, termed the alpha- subunit which contains sites for ATP binding and phosphorylation, and an associated smaller glycoprotein, termed the beta-subunit which may play a role in maintaining the structural and functional integrity of the complex.

Uniprot ID: P51164

NCBI: NP_000696.1

GeneID: 496

Host / Isotype: Mouse / IgG1

Clone: 2G11

Immunogen: Purified 34 kDa core peptide from deglycosylated hog gastric microsomes.

Format: **State:** Liquid Ascites
Buffer System: PBS containing 0.05% Sodium Azide as preservative.

Applications: Western Blot: 1/4,000.
Immunoprecipitation: Assay dependent.
Immunohistochemistry on Paraffin/Frozen Sections: 1/2,000.
Immunofluorescence: 1/2,000.
Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.

Specificity:

This antibody detects the beta-subunit of hydrogen/potassium ATPase from bovine, human, canine, porcine, rabbit, mouse, ferret, and rat tissues. This antibody has been successfully used in Western blot, Immunohistochemistry and immunoprecipitation procedures (ChIP). By Western blot, this antibody detects various forms of the beta-subunit, including a 60 to 80 kDa glycosylated protein, a 52 kDa beta-subunit precursor, and the 34 kDa core peptide from rabbit stomach extracts. Immunohistochemical staining of hydrogen/potassium ATPase in rabbit gastric glands with SM5117 results in specific staining of parietal cells. SM5117 has been shown to inhibit the enzymatic activity of the hydrogen/potassium ATPase and to alter the affinity of the cytoplasmic potassium binding site. The SM5117 antigen is purified 34 kDa core peptide from deglycosylated hog gastric microsomes. This antibody recognizes an epitope between amino acid residues 1-13 or 15-28 located on the cytoplasmic side of the beta-subunit.
Species: Human, Porcine, Canine, Ferret, Rat, Mouse, Rabbit and Bovine.
Other species not tested.

Storage:

Store the antibody (undiluted) at 2-8°C for one month or (in aliquots) at -20°C for longer.
Avoid repeated freezing and thawing.
Shelf life: one year from despatch.

Product Citations:

Purchased from Acris:

1. Dürr KL, Tavraz NN, Dempski RE, Bamberg E, Friedrich T. Functional significance of E2 state stabilization by specific alpha/beta-subunit interactions of Na,K- and H,K-ATPase. J Biol Chem. 2009 Feb 6;284(6):3842-54. doi: 10.1074/jbc.M808101200. Epub 2008 Dec 8. PubMed PMID: 19064992.

General Readings:

1. Karvar S, Yao X, Crothers JM, Liu Y, Forte JG. Localization and function of soluble N-ethylmaleimide-sensitive factor attachment protein-25 and vesicle-associated membrane protein-2 in functioning gastric parietal cells. J Biol Chem. 2002 Dec 20;277(51):50030-5. Epub 2002 Oct 16. PubMed PMID: 12386166.
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3. Shinotsuka C, Yoshida Y, Kawamoto K, Takatsu H, Nakayama K. Overexpression of an ADP-ribosylation factor-guanine nucleotide exchange factor, BIG2, uncouples brefeldin A-induced adaptor protein-1 coat dissociation and membrane tubulation. J Biol Chem. 2002 Mar 15;277(11):9468-73. Epub 2002 Jan 2. PubMed PMID: 11777925.
4. Am J. Physiol Cell Physiol, 277(46): C361-C372, 1999
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gastric parietal cells inhibits stimulatory recruitment of the H+-K+-ATPase. Am J Physiol. 1999 Sep;277(3 Pt 1):C361-72. PubMed PMID: 10484323.
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14. Saegusa C, Tanaka T, Tani S, Itohara S, Mikoshiba K, Fukuda M. Decreased basal mucus secretion by Slp2-a-deficient gastric surface mucous cells. Genes Cells. 2006 Jun;11(6):623-31. PubMed PMID: 16716193.
15. AJP-GI Vol 285, 1242-1248, Dec 2003
16. JCB Vol. 169, No. 1 21-28 Apr 2005
17. JHC DOI:10.1369/jhc.5A6806.2005
18. J. Histochem. Cytochem. Vol. 52(1), Jan 2004
19. Development May 2005 doi:10.1242/dev.01808
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