

H⁺/K⁺ ATPase β (B-5): sc-376393

BACKGROUND

The gastric H⁺/K⁺ ATPase exists as a heterodimer consisting of an α and a β subunit that work in tandem to transport protons across plasma membranes. H⁺/K⁺ ATPase β, also known as ATP4B or ATP6B, is a 291 amino acid single-pass type II membrane protein that functions as the β subunit of the H⁺/K⁺ ATPase heterodimer. Working with the α subunit, H⁺/K⁺ ATPase β effectively catalyzes the hydrolysis of ATP coupled with the exchange of H⁺ and K⁺ ions across the plasma membrane and plays an essential role in gastric acid secretion. The gene encoding H⁺/K⁺ ATPase β maps to human chromosome 13, which houses over 400 genes, such as BRCA2 and RB1, and comprises nearly 4% of the human genome. Trisomy 13, also known as Patau syndrome, is deadly and the few who survive past one year suffer from permanent neurologic defects, difficulty eating and vulnerability to serious respiratory infections.

REFERENCES

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2. Ma, J.Y., et al. 1991. cDNA cloning of the β-subunit of the human gastric H,K-ATPase. *Biochem. Biophys. Res. Commun.* 180: 39-45.
3. Song, L., et al. 1992. Mapping of the gene encoding the β-subunit of H⁺,K⁺-ATPase to human chromosome 13q34 by fluorescence *in situ* hybridization. *Genomics* 14: 1114-1115.
4. Callaghan, J.M., et al. 1995. Renal expression of the gene encoding the gastric H⁺-K⁺-ATPase β-subunit. *Am. J. Physiol.* 268: F363-F374.
5. Sachs, G. 1997. Proton pump inhibitors and acid-related diseases. *Pharmacotherapy* 17: 22-37.
6. Asano, S., et al. 2000. The roles of carbohydrate chains of the β-subunit on the functional expression of gastric H⁺,K⁺-ATPase. *J. Biol. Chem.* 275: 8324-8330.
7. Asano, S., et al. 2004. Molecular and cellular regulation of the gastric proton pump. *Biol. Pharm. Bull.* 27: 1-12.
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CHROMOSOMAL LOCATION

Genetic locus: ATP4B (human) mapping to 13q34.

SOURCE

H⁺/K⁺ ATPase β (B-5) is a mouse monoclonal antibody raised against a peptide mapping within an extracellular domain of H⁺/K⁺ ATPase β of human origin.

PRODUCT

Each vial contains 200 μg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

H⁺/K⁺ ATPase β (B-5) is recommended for detection of H⁺/K⁺ ATPase β of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μg per 100-500 μg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for H⁺/K⁺ ATPase β siRNA (h): sc-75217, H⁺/K⁺ ATPase β shRNA Plasmid (h): sc-75217-SH and H⁺/K⁺ ATPase β shRNA (h) Lentiviral Particles: sc-75217-V.

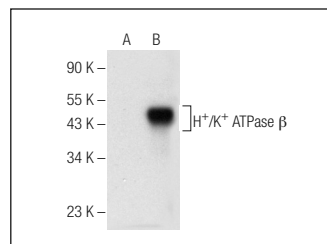
Molecular Weight of H⁺/K⁺ ATPase β: 33 kDa.

Positive Controls: H⁺/K⁺ ATPase β (h): 293 Lysate: sc-114330.

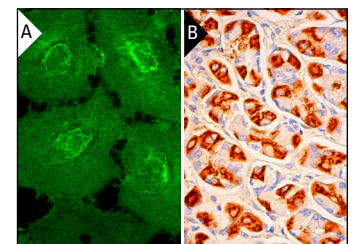
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



H⁺/K⁺ ATPase β (B-5): sc-376393. Western blot analysis of H⁺/K⁺ ATPase β expression in non-transfected: sc-110760 (A) and human H⁺/K⁺ ATPase β transfected: sc-114330 (B) 293 whole cell lysates.



H⁺/K⁺ ATPase β (B-5): sc-376393. Immunofluorescence staining of methanol-fixed HeLa cells showing membrane localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human upper stomach tissue showing cytoplasmic staining of Parietal cells (B).

STORAGE

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

RESEARCH USE

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