SANTA CRUZ BIOTECHNOLOGY, INC.

H^+/K^+ ATPase β (C-4): sc-374094

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 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

1. 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.
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.

CHROMOSOMAL LOCATION

Genetic locus: ATP4B (human) mapping to 13q34; Atp4b (mouse) mapping to 8 A1.1.

SOURCE

H^+/K^+ ATPase β (C-4) 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_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

H^+/K^+ ATPase β (C-4) is available conjugated to agarose (sc-374094 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-374094 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374094 PE), fluorescein (sc-374094 FITC), Alexa Fluor® 488 (sc-374094 AF488), Alexa Fluor® 546 (sc-374094 AF546), Alexa Fluor® 594 (sc-374094 AF594) or Alexa Fluor® 647 (sc-374094 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-374094 AF680) or Alexa Fluor® 790 (sc-374094 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-374094 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

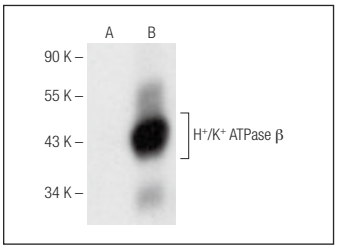
H^+/K^+ ATPase β (C-4) is recommended for detection of H^+/K^+ ATPase β of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 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 siRNA (m): sc-145846, H^+/K^+ ATPase β shRNA Plasmid (h): sc-75217-SH, H^+/K^+ ATPase β shRNA Plasmid (m): sc-145846-SH, H^+/K^+ ATPase β shRNA (h) Lentiviral Particles: sc-75217-V and H^+/K^+ ATPase β shRNA (m) Lentiviral Particles: sc-145846-V.

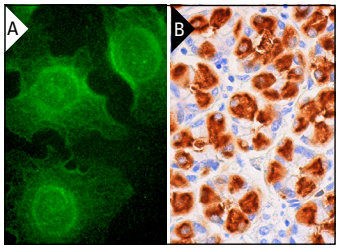
Molecular Weight of H^+/K^+ ATPase β: 33 kDa.

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

DATA



H^+/K^+ ATPase β (C-4): sc-374094. 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 (C-4): sc-374094. Immunofluorescence staining of methanol-fixed HeLa cells showing membrane localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human lower stomach tissue showing cytoplasmic staining of parietal cells (**B**).

SELECT PRODUCT CITATIONS

1. Goh, W., et al. 2014. Use of proton pump inhibitors as adjunct treatment for triple-negative breast cancers. An introductory study. J. Pharm. Pharm. Sci. 17: 439-446.
2. Teal, E., et al. 2018. Mouse- and human-derived primary gastric epithelial monolayer culture for the study of regeneration. J. Vis. Exp. 7: 57435.
3. Chang, W., et al. 2020. Hormonal suppression of stem cells inhibits symmetric cell division and gastric tumorigenesis. Cell Stem Cell 26: 739-754.e8.
4. Wang, X., et al. 2023. Cross-species single-cell transcriptomic analysis of animal gastric antrum reveals intense porcine mucosal immunity. Cell Regen. 12: 27.
5. Weng, J., et al. 2024. Omeprazole taken once every other day can effectively prevent aspirin-induced gastrointestinal mucosal damage in rats. BMC Gastroenterol. 24: 187.

RESEARCH USE

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