

SPCA1/2 (H-110): sc-134450

BACKGROUND

The family of P-type Ca^{2+} -transport ATPases is made up of three subfamilies: sarco(endo)plasmic-reticulum Ca^{2+} ATPases (SERCA), plasma- membrane Ca^{2+} ATPases (PMCA), and secretory-pathway Ca^{2+} ATPases (SPCA). The SPCA1 protein (encoded for by the ATP2C1 gene) is a $\text{Ca}^{2+}/\text{Mn}^{2+}$ -transport ATPase. It localizes to the Golgi apparatus and, together with SERCA2, is responsible for the ionic milieu in the Golgi lumen. Defects in the gene that encodes SPCA1 are the cause of Hailey-Hailey disease, an autosomal dominant disorder characterized by persistent blisters and acantholysis of the epidermis. SPCA2 (encoded by the ATP2C2 gene) also localizes to the Golgi apparatus and has a higher enzymatic turnover rate than that of SPCA1 while having a high affinity for cytosolic Ca^{2+} . The enzymatic properties of the human SPCA2 enzyme and the restriction of its tissue expression to the gastrointestinal and respiratory tracts, prostate, thyroid, salivary, and mammary glands may, in principle, define a Ca^{2+} -ATPase pump with a specific physiological role in secretory cells.

REFERENCES

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3. Stanchi, F., et al. 2001. Characterization of 16 novel human genes showing high similarity to yeast sequences. *Yeast* 18: 69-80.
4. Yokota, K., et al. 2002. Analysis of ATP2C1 gene mutation in 10 unrelated Japanese families with Hailey-Hailey disease. *J. Invest. Dermatol.* 118: 550-551.
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7. Vanoevelen, J., et al. 2005. The secretory pathway $\text{Ca}^{2+}/\text{Mn}^{2+}$ -ATPase 2 is a Golgi-localized pump with high affinity for Ca^{2+} ions. *J. Biol. Chem.* 280: 22800-22808.

CHROMOSOMAL LOCATION

Genetic locus: ATP2C1 (human) mapping to 3q22.1, ATP2C2 (human) mapping to 16q24.1; Atp2c1 (mouse) mapping to 9 F1, Atp2c2 (mouse) mapping to 8 E1.

SOURCE

SPCA1/2 (H-110) is a rabbit polyclonal antibody raised against amino acids 711-820 mapping near the C-terminus of SPCA2 of human origin.

PRODUCT

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

APPLICATIONS

SPCA1/2 (H-110) is recommended for detection of SPCA1 and SPCA2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

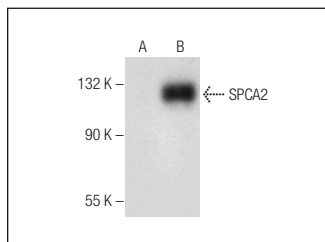
SPCA1/2 (H-110) is also recommended for detection of SPCA1 and SPCA2 in additional species, including equine, canine, bovine and porcine.

Molecular Weight of SPCA1: 101 kDa.

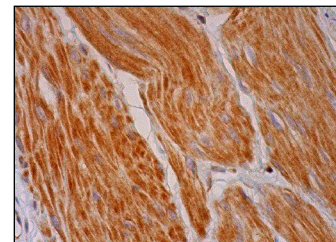
Molecular Weight of SPCA2: 103 kDa.

Positive Controls: SPCA2 (h): 293T Lysate: sc-172997.

DATA



SPCA1/2 (H-110): sc-134450. Western blot analysis of SPCA2 expression in non-transfected: sc-117752 (A) and human SPCA2 transfected: sc-172997 (B) 293T whole cell lysates.



SPCA1/2 (H-110): sc-134450. Immunoperoxidase staining of formalin fixed, paraffin-embedded human smooth muscle tissue showing cytoplasmic staining of smooth muscle cells.

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.

PROTOCOLS

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



Try **SPCA2 (B-5): sc-398330** or **SPCA1/2 (B-3): sc-377339**, our highly recommended monoclonal alternatives to SPCA1/2 (H-110).