SANTA CRUZ BIOTECHNOLOGY, INC.

Sucrase-Isomaltase (A-12): sc-393424

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Sucrase-Isomaltase (SI) is a type II brush border membrane protein that plays an important role in the final stage of carbohydrate digestion. Sucrase-Isomaltase is a disaccharidase that catalyzes the hydrolysis of dietary sucrose and maltose and other products of starch digestion. The high degree of amino acid homology between isomaltase and sucrose indicate that the Sucrase-Isomaltase protein was evolved by partial gene duplication. The Sucrase-Isomaltase precursor is proteolytically cleaved when exposed to pancreatic proteases in the intestinal lumen and localizes to the apical membrane of adult intestinal enterocytes along the intestinal crypt-villus axis. Sucrase-Isomaltase protein deficiency results in osmotic diarrhea due to an inability to hydrolyze intestinal disaccharides into component monosaccharides. Congenital Sucrase-Isomaltase deficiency (CSID) is an autosomal recessive human disorder characterized by reduced activities of Sucrase-Isomaltase.

REFERENCES

1. Galand, G. 1989. Brush border membrane Sucrase-Isomaltase, Maltase-glucoamylase and Trehalase in mammals. Comparative development, effects of glucocorticoids, molecular mechanisms, and phylogenetic implications. Comp. Biochem. Physiol. B 94: 1-11.
2. Hauri, H.P., et al. 1991. Protein traffic in intestinal epithelial cells. Semin. Cell Biol. 2: 355-364.

CHROMOSOMAL LOCATION

Genetic locus: SI (human) mapping to 3q26.1; Sis (mouse) mapping to 3 E3.

SOURCE

Sucrase-Isomaltase (A-12) is a mouse monoclonal antibody raised against amino acids 839-961 mapping within an internal region of Sucrase-Isomaltase 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.

Sucrase-Isomaltase (A-12) is available conjugated to agarose (sc-393424 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393424 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393424 PE), fluorescein (sc-393424 FITC), Alexa Fluor® 488 (sc-393424 AF488), Alexa Fluor® 546 (sc-393424 AF546), Alexa Fluor® 594 (sc-393424 AF594) or Alexa Fluor® 647 (sc-393424 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393424 AF680) or Alexa Fluor® 790 (sc-393424 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

Sucrase-Isomaltase (A-12) is recommended for detection of Sucrase-Isomaltase 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).

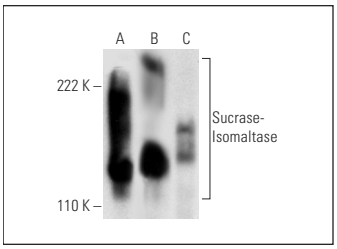
Suitable for use as control antibody for Sucrase-Isomaltase siRNA (h): sc-72188, Sucrase-Isomaltase siRNA (m): sc-72189, Sucrase-Isomaltase shRNA Plasmid (h): sc-72188-SH, Sucrase-Isomaltase shRNA Plasmid (m): sc-72189-SH, Sucrase-Isomaltase shRNA (h) Lentiviral Particles: sc-72188-V and Sucrase-Isomaltase shRNA (m) Lentiviral Particles: sc-72189-V.

Molecular Weight of Sucrase-Isomaltase precursor: 200 kDa.

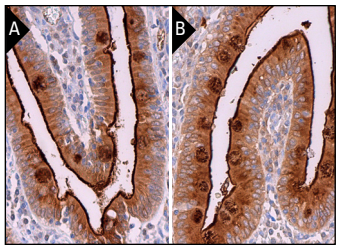
Molecular Weight of mature Sucrase-Isomaltase: 143 kDa.

Positive Controls: human small intestine extract: sc-364225, Caco-2 cell lysate: sc-2262 or COLO 320DM cell lysate: sc-2226.

DATA



Sucrase-Isomaltase (A-12): sc-393424. Western blot analysis of Sucrase-Isomaltase expression in human small intestine tissue extract (**A**) and Caco-2 (**B**) and COLO 320DM (**C**) whole cell lysates.



Sucrase-Isomaltase (A-12): sc-393424. Immunoperoxidase staining of formalin fixed, paraffin-embedded human small intestine (**A**) and human duodenum (**B**) tissue showing apical mem-brane and cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Zhou, L., et al. 2014. Up-regulation of cholesterol absorption is a mechanism for cholecystokinin-induced hypercholesterolemia. J. Biol. Chem. 289: 12989-12999.
2. Ogaki, S., et al. 2015. A cost-effective system for differentiation of intestinal epithelium from human induced pluripotent stem cells. Sci. Rep. 5: 17297.
3. Zhang, Q., et al. 2018. Type III interferon restriction by porcine epidemic diarrhea virus and the role of viral protein nsp1 in IRF1 signaling. J. Virol. 92 pii: e01677-e01717.
4. Kawai, K., et al. 2020. Establishment of SLC15A1/PEPT1-knockout human-induced pluripotent stem cell line for intestinal drug absorption studies. Mol. Ther. Methods Clin. Dev. 17: 49-57.

RESEARCH USE

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