SANTA CRUZ BIOTECHNOLOGY, INC.

Sucrase-Isomaltase (C-8): sc-393470

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 (C-8) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 136-167 near the N-terminus of Sucrase-Isomaltase of rat origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Sucrase-Isomaltase (C-8) is available conjugated to agarose (sc-393470 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393470 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393470 PE), fluorescein (sc-393470 FITC), Alexa Fluor® 488 (sc-393470 AF488), Alexa Fluor® 546 (sc-393470 AF546), Alexa Fluor® 594 (sc-393470 AF594) or Alexa Fluor® 647 (sc-393470 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393470 AF680) or Alexa Fluor® 790 (sc-393470 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-393470 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

Sucrase-Isomaltase (C-8) is recommended for detection of precursor and mature isomaltase isoform 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).

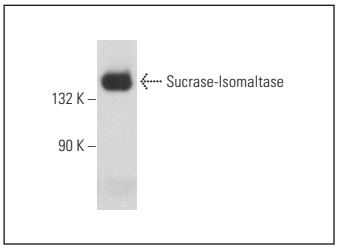
Suitable for use as control antibody for Sucrase-Isomaltase siRNA (h): sc-72188, Sucrase-Isomaltase siRNA (m): sc-72189, Sucrase-Isomaltase shRNA Plasmid (h): sc-72188-SH, Sucrase-Isomaltase shRNA Plasmid (m): sc-72189-SH, Sucrase-Isomaltase shRNA (h) Lentiviral Particles: sc-72188-V and Sucrase-Isomaltase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

Molecular Weight of Sucrase-Isomaltase precursor: 200 kDa.

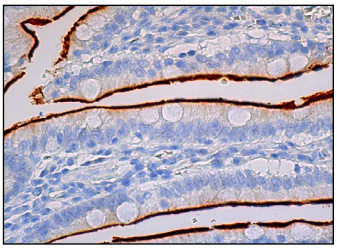
Molecular Weight of mature Sucrase-Isomaltase: 143 kDa.

Positive Controls: rat ileum tissue extract.

DATA



Sucrase-Isomaltase (C-8): sc-393470. Western blot analysis of Sucrase-Isomaltase expression in rat ileum tissue extract.



Sucrase-Isomaltase (C-8): sc-393470. Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing apical membrane staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Smither, B.R., et al. 2016. Glucagon-like peptide-2 requires a full complement of Bmi-1 for its proliferative effects in the murine small intestine. Endocrinology 157: 2660-2670.
2. Yanai, H., et al. 2017. Intestinal stem cells contribute to the maturation of the neonatal small intestine and colon independently of digestive activity. Sci. Rep. 7: 9891.
3. Engevik, A.C., et al. 2018. Loss of MYO5B leads to reductions in Na^+ absorption with maintenance of CFTR-dependent Cl^- secretion in enterocytes. Gastroenterology 155: 1883-1897.
4. Rispal, J., et al. 2019. The H2A.Z histone variant integrates Wnt signaling in intestinal epithelial homeostasis. Nat. Commun. 10: 1827.

RESEARCH USE

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