SANTA CRUZ BIOTECHNOLOGY, INC.

Sucrase-Isomaltase (D-20): sc-27605

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 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.
3. Wu, G.D., et al. 1992. Isolation and characterization of the human sucrase-isomaltase gene and demonstration of intestine-specific transcriptional elements. J. Biol. Chem. 267: 7863-7870.
4. Treem, W.R. 1995. Congenital sucrase-isomaltase deficiency. J. Pediatr. Gastroenterol. Nutr. 21: 1-14.
5. Traber, P.G. 1998. Control of gene expression in intestinal epithelial cells. Philos. Trans. R. Soc. Lond. B Biol. Sci. 353: 911-914.
6. Online Mendelian Inheritance in Man, OMIM™. 1999. Johns Hopkins University, Baltimore, MD. MIM Number: 222900. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
7. Ritz, V., et al. 2003. Congenital sucrase-isomaltase deficiency because of an accumulation of the mutant enzyme in the endoplasmic reticulum. Gastroenterology 125: 1678-1685.

CHROMOSOMAL LOCATION

Genetic locus: SI (human) mapping to 3q26.1.

SOURCE

Sucrase-Isomaltase (D-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Sucrase-Isomaltase 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.

Blocking peptide available for competition studies, sc-27605 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Sucrase-Isomaltase (D-20) is recommended for detection of precursor and mature sucrase isoform of Sucrase-Isomaltase of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

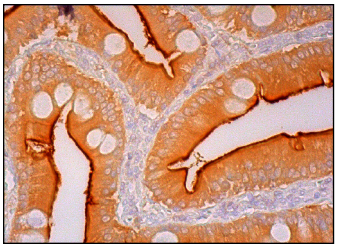
Sucrase-Isomaltase (D-20) is also recommended for detection of precursor and mature sucrase isoform of Sucrase-Isomaltase in additional species, including canine, bovine and porcine.

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

Molecular Weight of Sucrase-Isomaltase precursor: 200 kDa.

Molecular Weight of mature Sucrase-Isomaltase: 143 kDa.

DATA



Sucrase-Isomaltase (D-20): sc-27605. Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing apical membrane and cytoplasmic staining of glandular 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.