SANTA CRUZ BIOTECHNOLOGY, INC.

Maltase-glucoamylase (W-19): sc-70086

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Maltase-glucoamylase, also known as MGAM, MG or MGA, is a 1,857 amino acid multi-pass membrane protein that localizes to the apical cell membrane and contains 2 P-type domains. Expressed in kidney, small intestine and granulocytes, Maltase-glucoamylase exists as a monomer thatis thought to participate in an alternate pathway of starch digestion, specifically when luminal α-amylase activity is reduced because of immaturityor malnutrition. Maltase-glucoamylase is subject to posttranslational N- and O-glycosylation, as well as sulfation. The gene encoding Maltase-glucoamylase maps to human chromosome 7, which houses over 1,000 genes and comprises nearly 5% of the human genome. Defects in some of the genes localized to chromosome 7 have been linked to osteogenesis imperfecta, Williams-Beuren syndrome, Pendred syndrome, lissencephaly, citrullinemia and Shwachman-Diamond syndrome.

REFERENCES

1. Danielsen, E.M. 1987. Tyrosine sulfation, a post-translational modification of microvillar enzymes in the small intestinal enterocyte. EMBO J. 6: 2891-2896.
2. Naim, H.Y., Sterchi, E.E. and Lentze, M.J. 1988. Structure, biosynthesis, and glycosylation of human small intestinal maltase-glucoamylase. J. Biol. Chem. 263: 19709-19717.
3. Nichols, B.L., Eldering, J., Avery, S., Hahn, D., Quaroni, A. and Sterchi, E. 1998. Human small intestinal maltase-glucoamylase cDNA cloning. Homology to sucrase-isomaltase. J. Biol. Chem. 273: 3076-3081.
4. Nichols, B.L., Avery, S., Sen, P., Swallow, D.M., Hahn, D. and Sterchi, E. 2003. The maltase-glucoamylase gene: common ancestry to sucrase-isomaltase with complementary starch digestion activities. Proc. Natl. Acad. Sci. USA 100: 1432-1437.
5. Online Mendelian Inheritance in Man, OMIM™. 2003. Johns Hopkins University, Baltimore, MD. MIM Number: 154360. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Ao, Z., Quezada-Calvillo, R., Sim, L., Nichols, B.L., Rose, D.R., Sterchi, E.E. and Hamaker, B.R. 2007. Evidence of native starch degradation with human small intestinal maltase-glucoamylase (recombinant). FEBS Lett. 581: 2381-2388.
7. Tu rul, S., Kutlu, T., Pekin, O., Baglam, E., Kiyak, H. and Oral, O. 2008. Clinical, endocrine, and metabolic effects of acarbose, an α-glucosidase inhibitor, in overweight and nonoverweight patients with polycystic ovarian syndrome. Fertil. Steril. 90: 1144-1148.
8. Sim, L., Quezada-Calvillo, R., Sterchi, E.E., Nichols, B.L. and Rose, D.R. 2008. Human intestinal maltase-glucoamylase: crystal structure of the N-terminal catalytic subunit and basis of inhibition and substrate specificity. J. Mol. Biol. 375: 782-792.

CHROMOSOMAL LOCATION

Genetic locus: MGAM (human) mapping to 7q34; Mgam (mouse) mapping to 6 B1.

SOURCE

Maltase-glucoamylase (W-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Maltase-glucoamylase 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-70086 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Maltase-glucoamylase (W-19) is recommended for detection of Maltase-glucoamylase of mouse, rat and 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Maltase-glucoamylase (W-19) is also recommended for detection of Maltase-glucoamylase in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Maltase-glucoamylase siRNA (h): sc-75740, Maltase-glucoamylase siRNA (m): sc-75741, Maltase-glucoamylase shRNA Plasmid (h): sc-75740-SH, Maltase-glucoamylase shRNA Plasmid (m): sc-75741-SH, Maltase-glucoamylase shRNA (h) Lentiviral Particles: sc-75740-V and Maltase-glucoamylase shRNA (m) Lentiviral Particles: sc-75741-V.

Molecular Weight of unglycosylated Maltase-glucoamylase: 210 kDa.

Molecular Weight of glycosylated Maltase-glucoamylase: 285/335 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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.