Poster Presentation

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Substrate selectivity of C-terminal sucrase isomaltase and maltase glucoamylase

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Carbohydrates make up a significant component of the human diet. One approach to controlling blood glucose and serum insulin levels in individuals with type II diabetes is inhibition of intestinal α-glucosidases and pancreatic α-amylases. Two intestinal α-glucosidases, sucrase isomaltase (SI) and maltase glucoamylase (MGAM), are responsible for the final step of starch hydrolysis in mammals in the small intestine: the release of free glucose. Each enzyme consists of two catalytic subunits: N-terminal sucrase isomaltase (ntSI) and C-terminal sucrase isomaltose (ctSI); and N-terminal maltase glucoamylase (ntMGAM) and C-terminal maltase glucoamylase (ctMGAM). Here, residues hypothesized to impact substrate specificity of ctSI and ctMGAM will be presented, enhancing our understanding of the functionality of these enzymatic subunits as well as their overlapping substrate specificity.

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