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Czech J. Food Sci.

**A. Seidowski, D.
Lunow, T. Henle:**

Substrates and Inhibitors for Intestinal Brush Border Glycosidases

Czech J. Food Sci., 27 (2009): S146-S148

The effect of oligosaccharide-derived Amadori products on intestinal disaccharidases was investigated to answer the question, whether these products, ingested in relevant amounts with the daily diet, are degraded by carbohydrate-digesting enzymes and in addition interfere with the digestion of other carbohydrates. Using Caco-2 cells, which served as model for the intestinal brush border, the hydrolysis of peptide-bound Amadori products, prepared from N α -hippuryllysine and maltose or maltotriose, respectively, as well as of the oligosaccharides was studied. The Caco-2 cells hydrolysed the Amadori products to yield N α -hippuryl-fructosyl-lysine and D-glucose. The inhibition of Caco-2 sucrase-isomaltase by Amadori products

was examined with a microtitre plate assay with *p*-nitrophenyl- α -D-glucopyranoside as substrate. IC_{50} values were in the millimolar range, indicating that Amadori products do not act as strong inhibitors for intestinal glycosidases. The hydrolysis of the natural substrate maltose, on the other hand, was barely affected.

Keywords:

Caco-2 cells; oligosaccharide; Amadori compounds; α -glucosidase inhibition

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