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Microbial production of prebiotic oligosaccharides: Galacto-oligosaccharides as an example

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 \mathbf{P} rebiotic oligosaccharides have attracted an increasing amount of attention because of their physiological importance and functional effects on human health, as well as their physico-chemical properties, which are of interest for various applications in the food industries. Galacto-oligosaccharides (GOS), one of the major groups of prebiotic oligosaccharides, are formed via the transgalactosylation reaction from lactose. This reaction is catalysed by many β -galactosidases (lactases) in addition to their hydrolytic activity. GOS are complex mixtures of different oligosaccharides, and the spectrum of the oligosaccharides making up these mixtures strongly depends on the source of the enzyme used for the biocatalytic reaction as well as on the conversion conditions used in their production. These oligosaccharides are of great interest because of their proven prebiotic characteristics. A plethora of GOS is also found in human milk, and these differently substituted oligosaccharides are associated with many beneficial effects for the breast-fed infant.

Biography

Thu-Ha Nguyen has obtained her MSc in Biochemical Engineering from TU Delft in the Netherlands and PhD in Food Biotechnology from BOKU - University of Natural Resources and Life Science in Vienna, Austria. She has been working at the Food Biotechnology Laboratory at BOKU Vienna as Post-doc, Senior Post-doc and later as Scientific Researcher. She is currently a beneficiary of an Elise-Richter-Grant of the Austrian Science Fund FWF for highly qualified Female Scientists and Scholars. Her research focuses on biotechnologically relevant enzymes from lactic acid bacteria and Bifdobacteria and their application in biotransformations and biocatalysis as well as on protein expression, secretion and anchoring. She (co-) authored more than 35 peer-reviewed papers and several book chapters.

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