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## Oligosaccharides: A sweet treasure from milk

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Oligosaccharides are complex glycans, which represent the third most abundant component in human milk after lactose and lipids. Emerging evidence suggests that Human Milk Oligosaccharides (HMO) play a key role in promoting and maintaining the health of human infants. In fact, the HMO have has been implicated in a number of important biological functions, such as their prebiotic activity, their role in brain development, their anti-adhesion/anti-infective effects, and their associated anti-inflammatory properties, all of which are dependent on their chemical structures. Consequently, their addition to infant formulas or functional foods/beverages is considered an attractive proposition. As the commercialisation of HMO is not feasible, oligosaccharides from domestic mammals' milk may provide a valid alternative. Given the wide availability of bovine milk and its processing streams worldwide, Bovine Milk Oligosaccharides (BMO) may act as a potential substitute for an HMO. Although BMO is less concentrated than HMO, they share some structural similarities, which may imply shared functionalities. Currently, research is focused on extracting BMO for potential industrial production, which will consequently allow evaluation of their bioactivities and safety. Here, bioactivities of HMO and potential production and utilization of BMO will be discussed.

### Biography

Mariarosaria Marotta was awarded a Masters degree in Biological Sciences from the Università di Napoli 'Federico II', Italy in 1997. Subsequently, as a Research Scientist at Seconda Università di Napoli, Italy, she investigated glucosidases for their application in the food industry. In 2005, she completed her PhD in Food Biotechnology from Seconda Università di Napoli in collaboration with University College Cork and Teagasc, Ireland. In 2008, she joined Teagasc as a Research Officer where she investigated researched the enrichment of bioactive components from dairy streams. In 2016 she joined Food for Health Ireland to work on sourcing milk carbohydrates with health promoting properties.

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