MS06-2-7 Structural and functional characterization of novel enzymes from targeted probiotic lactic bacterial strains for the production of new generation prebiotics
#MS06-2-7

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Abstract
The human gut microbiome is a complex ecosystem, which plays a crucial role in human health. However, the gut microbiome equilibrium is delicate and as such different strategies to modulate it have been proposed. One approach involves the use of prebiotics and probiotics as supplements able to alter the microbial composition in the gut and increase its beneficial effects.
This project focuses on lactobacillae probiotic strains already used for its beneficial effects in lipid metabolism.
Recent sequencing of specific lactobacillae strains has revealed potential novel enzymes responsible for beneficial effects in human health: beta-galactosidases which are responsible for galacto-oligosaccharide (GOS) synthesis.
Select enzymes have been targeted for detailed structure-function studies to elucidate their functional role: bioinformatics tools have been utilized to identify important functional and structural domains and X-ray crystallography will be used for their structural characterisation.

We anticipate that this work will be valuable for understanding detailed mechanisms of action of specific enzymes involved in the production of new prebiotics.