At-line/on-line measurement of sugars in HMO fermentation

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DTU CHR. HANSEN Improving food & health

Helix Lab

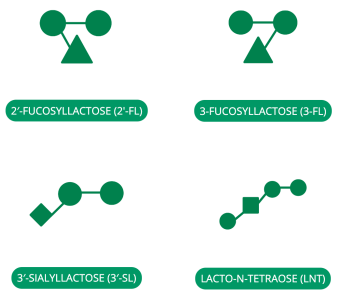
Introduction

Health benefits of Human Milk Oligosaccharides

- Immune system
- Microbiome
- Cognition and brain development
- Bacterial balance
- Intestinal barrier

Project goal: To evaluate the potential of process analytical technology to generate real-time quantification of key substrates and products in HMO fermentation as a first step towards development of future process control applications

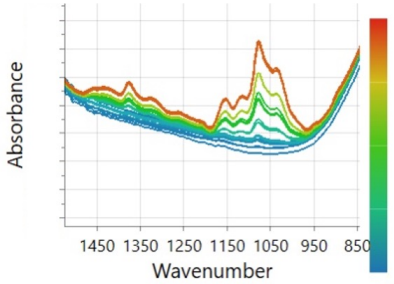
Methods



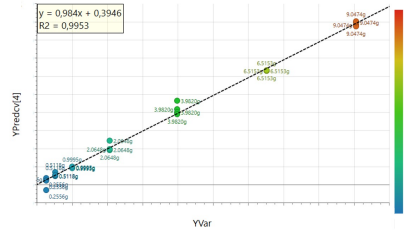
1. Sample preparation
2. Vibrational spectroscopy
3. Multivariate data analysis
4. Model validation

Outcome

Successful measurements of components of interest



Models with R^2 and RMSEcv values indicating satisfactory accuracy of HMO quantification



Perspectives

- Investigation of in-line performance of the spectroscopic method
- Assessment of the robustness of the models to ensure optimal production line performance

A Helix Lab Fellowship

- Unique industry insights
- Great networking opportunity
- Resourceful support system and friends for life