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Authors: Mursalin Sajib, Peter Falck, Roya R.R. Sardari, Sindhu Mathew, Carl Grey, Eva Nordberg Karlsson, Patrick Adlercreutz

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Valorization of Brewer's spent grain to prebiotic oligosaccharide: production, xylanase catalyzed hydrolysis, *in-vitro* evaluation with probiotic strains and in a batch human fecal fermentation model

Mursalin Sajib[a,b], Peter Falck[a], Roya RR Sardari[a], Sindhu Mathew[a], Carl Grey[a], Eva Nordberg Karlsson[a], Patrick Adlercreutz[a,*]

[a]Biotechnology, Department of Chemistry, Lund University, SE-22100 Lund, Sweden

[b]Current affiliation: Food and Nutrition Science, Department of Biology and Biological Engineering, Chalmers University of Technology, SE-41296 Gothenburg, Sweden

*Corresponding author

Tel: +46 46 2224842

E-mail: Patrick.Adlercreutz@biotek.lu.se (Patrick Adlercreutz)

Highlights

- Two fractions of arabinoxylan were extracted from Brewer's spent grain
- Arabinoxylan purity of 45-55 % was obtained
- 9 xylanases hydrolyzed the arabinoxylan yielding different oligosaccharide patterns
- Fermentation of the hydrolysates was studied using selected probiotic bacteria
- Human gut microbiota fermented the hydrolysates as fast as fructooligosaccharides

Abstract

Brewer's spent grain (BSG) accounts for around 85 % of the solid by-products from beer production. BSG was first extracted to obtain water-soluble arabinoxylan (AX). Using subsequent alkali extraction (0.5 M KOH) it was possible to dissolve additional