Statistical model semiquantitatively approximates arabinoxylooligosaccharides' structural diversity - DTU Orbit (09/11/2017)

Statistical model semiquantitatively approximates arabinoxylooligosaccharides' structural diversity

A statistical model describing the random distribution of substituted xylopyranosyl residues in arabinoxylooligosaccharides is suggested and compared with existing experimental data. Structural diversity of arabinoxylooligosaccharides of various length, originating from different arabinoxylans (wheat flour arabinoxylan (arabinose/xylose, A/X = 0.47); grass arabinoxylan (A/X = 0.24); wheat straw arabinoxylan (A/X = 0.15); and hydrothermally pretreated wheat straw arabinoxylan (A/X = 0.05)), is semiquantitatively approximated using the proposed model. The suggested approach can be applied not only for prediction and quantification of arabinoxylooligosaccharides' structural diversity, but also for estimate of yield and selection of the optimal source of arabinoxylan for production of arabinoxylooligosaccharides with desired structural features.

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