Synthesis and application of branched type II arabinogalactans

The synthesis of linear- and (1→6)-branched β-(1→3)-D-galactans, structures found in plant arabinogalactan proteins (AGPs) is described. The synthetic strategy relies on iterative couplings of mono- and disaccharide thioglycoside donors, followed by a late stage glycosylation of heptagalactan backbone acceptors to introduce branching. A key finding from the synthetic study was the need to match protective groups in order to tune reactivity and ensure selectivity during the assembly. Carbohydrate microarrays were generated to enable the detailed epitope mapping of two monoclonal antibodies known to recognize AGPs: JIM16 and JIM133.

General information
State: Published
Organisations: Department of Chemistry, Organic Chemistry, Max Planck Institute, Newcastle University
Contributors: Andersen, M. C. F., Boos, I., Ruprecht, C., Willats, W. G. T., Pfrengle, F., Clausen, M. H.
Pages: 12066–12084
Publication date: 2017
Peer-reviewed: Yes

Publication information
Journal: Journal of Organic Chemistry
Volume: 82
Issue number: 23
ISSN (Print): 0022-3263
Ratings:
BFI (2019): BFI-level 1
Web of Science (2019): Indexed yes
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 2
Scopus rating (2017): CiteScore 4.55 SJR 1.846 SNIP 0.997
Web of Science (2017): Impact factor 4.805
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 4.59 SJR 2.001 SNIP 1.035
Web of Science (2016): Impact factor 4.849
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): CiteScore 4.69 SJR 1.997 SNIP 1.166
Web of Science (2015): Impact factor 4.785
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): CiteScore 4.69 SJR 2.007 SNIP 1.219
Web of Science (2014): Impact factor 4.721
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): CiteScore 4.51 SJR 2.092 SNIP 1.169
Web of Science (2013): Impact factor 4.638
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): CiteScore 4.31 SJR 2.286 SNIP 1.223
Web of Science (2012): Impact factor 4.564
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): CiteScore 4.43 SJR 2.265 SNIP 1.239
Web of Science (2011): Impact factor 4.45
ISI indexed (2011): ISI indexed yes