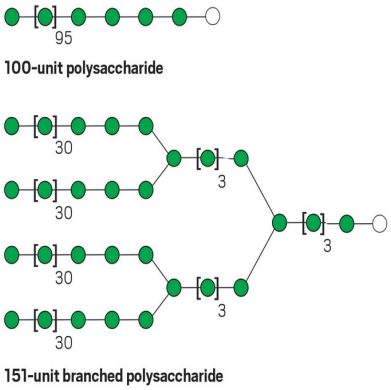
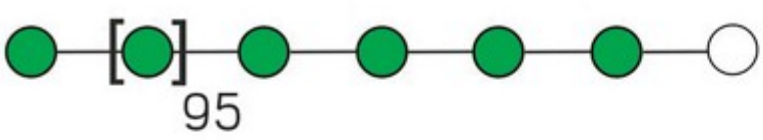


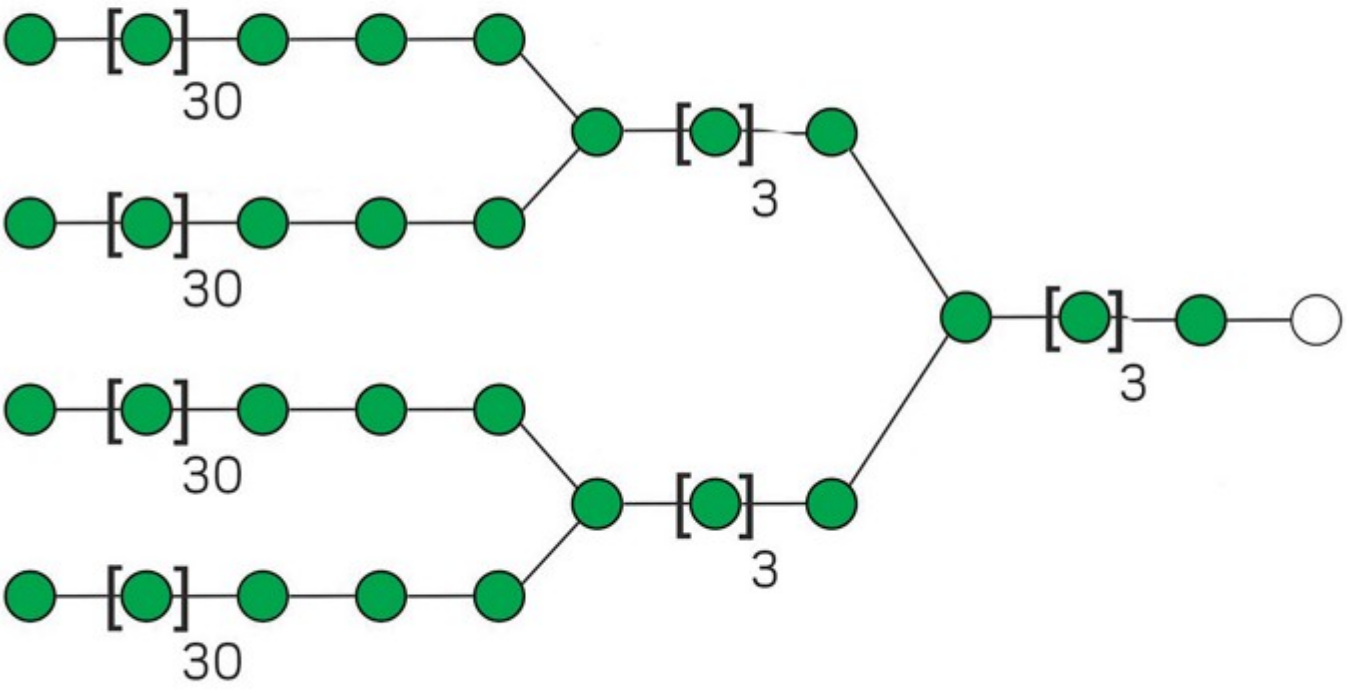
Total Synthesis of Polysaccharides by Automated Glycan Assembly

Description

Polysaccharide isolation provides heterogeneous mixtures, while heroic efforts were required to complete chemical and/or enzymatic syntheses of polysaccharides as long 92-mers. The authors of the article show that automated glycan assembly (AGA) enables access to a 100-mer polysaccharide via a 201-step synthesis within 188 h. Convergent block coupling of 30- and 31-mer oligosaccharide fragments, prepared by AGA, yielded a multiple-branched 151-mer polymannoside. Quick access to polysaccharides provides the basis for future material science applications of carbohydrates.



100-unit polysaccharide



151-unit branched polysaccharide

Such an achievement paves the way to a better understanding of of structures and functions of polysaccharides and other complex carbohydrates.

Category

1. News