

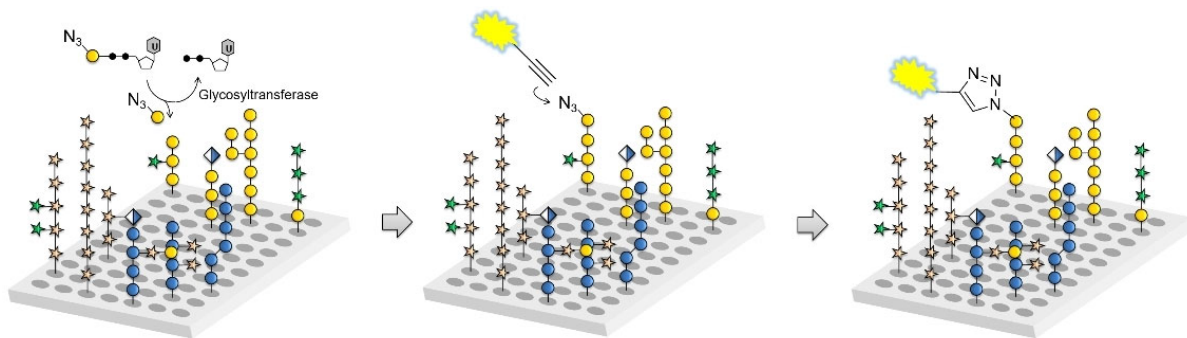
Synthetic glycans as tools for studying plant arabinogalactan biosynthesis

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Plant cells are surrounded by a polysaccharide-rich matrix that constitutes the cell wall of all higher plants and provides the richest available resource of fermentable carbohydrates and bio-based materials. Optimal exploitation of this resource requires investigations into the biosynthesis of cell wall glycans, which are aided by well-defined and pure glycan samples obtained through chemical synthesis. We have prepared oligosaccharides derived from different classes of cell wall glycans and printed them as microarrays to generate a tool for characterization of cell wall glycan-directed antibodies, plant immune receptors, and glycosyltransferases that are involved in plant cell wall biosynthesis. The glycan arrays were for example incubated with azido-functionalized sugar nucleotide donors and putative glycosyltransferases to enable product detection “on chip” via click reaction with an alkynyl-modified dye [1]. Using this assay, a new glycosyltransferase involved in plant arabinogalactan synthesis was recently identified and functionally characterized.



Bibliographic references:

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