# Glycans converted into functional fluorophores

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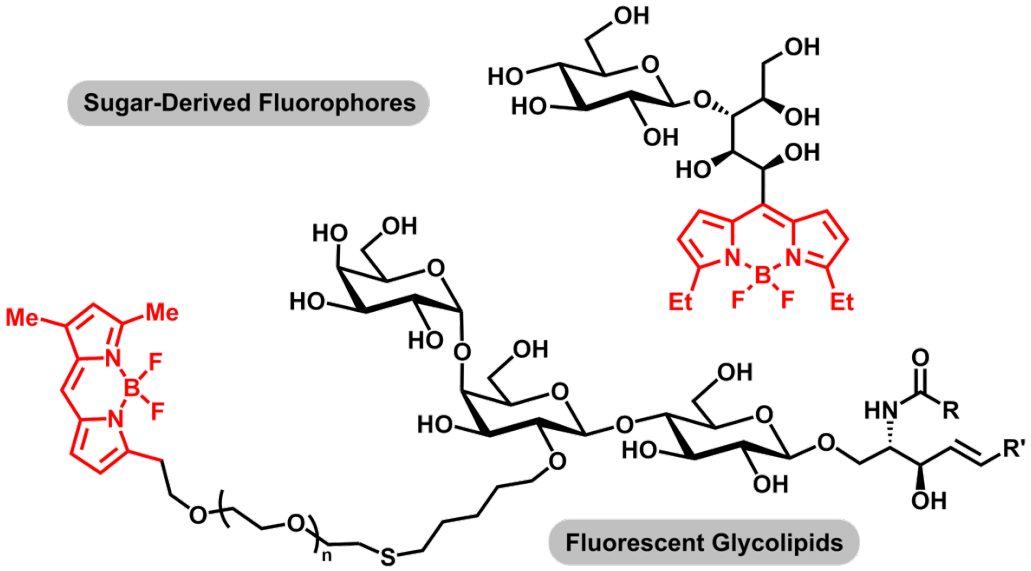
A major drawback to investigate the fate of glycans in biological environments is the fact that optical visualization is difficult because they are non-colored and non-fluorescent.

To investigate the influence of the fatty acid of the glycosphingolipid $Gb_3$ on its distribution in membranes, a modular synthetic route towards a set of fluorescently labeled $Gb_3$ glycosphingolipids with a BODIPY fluorophore attached to the head group was developed [1]. $C_{24}$ fatty acids, saturated, unsaturated, α-hydroxylated derivatives and a combination thereof were attached to the sphingosine backbone. The fluorophore was attached in such a way that the binding properties of the carbohydrate head group stay intact. Using such constructs allows to study the effect of different fatty acids on the behavior of these glycolipids in membranes.

The synthesis of BODIPY itself uses an aldehyde as crucial component. Instead of common aromatic aldehydes sugars are employed which allows the facile construction of sugar-derived BODIPYs. Such fluorophores are water-soluble and enantiomerically pure. The use of different sugars differing in their stereochemical information paves the way to a distinct staining of cell organelles [2].

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Bibliographic references:

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