

## PROGRESS TOWARD OPERATIONALLY EFFICIENT CARBOHYDRATE SYNTHESIS USING POLYMER SUPPORT

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Major drawbacks in the chemical synthesis of complex glycans are that (1) it requires long synthetic pathway comprising tedious protection-deprotection (or activation) sequences, and (2) the isolation of the glycosylation product is sometimes difficult because the product is quite often chromatographically inseparable from the coupling components used. To solve these problems, we have been applying polymer-supported organic synthesis for carbohydrate synthesis. One of the polymer support used in our study is poly(ethylene glycol) monomethyl ether (MPEG-OH), which is soluble in most organic solvents except for ethers where it readily precipitates. We have found even hindered 4-hydroxy group of glucose can form a mixed formylacetal with the polymer by treating iodine chloride and MPEG-O-CH<sub>2</sub>SCH<sub>3</sub> in excellent yields [1]. By virtue of the physical property of MPEG polymer, rapid synthesis of carbohydrates became possible. The use of polymer-supported reagents is also beneficial for efficient organic synthesis. Glycosylation with MPEG-supported carbohydrates by using polymer-supported reagents [2] and application of these methodologies toward synthesis of lipopolysaccharides will be presented [3].

### References :

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