Extended Abstract

Pharmaceutical Oligosaccharide sensing by a chemical approach

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Abstract

Selective sensing of oligosaccharides in aqueous media is a challenge in current chemistry due to their heavy hydration and stereochemical diversity. us, the develop¬ment of selective saccharide sensor that functions in aqueous media is of particular signi cance and bene t not only from the scienti c but also from the application point of view. In this study, we synthesized reporter-modi ed curdlan (DABz-Cur) as a saccharide chemosensor, and investi¬gated its abilities for sensing a variety of oligosaccharides by using circular dichroism spectroscopy to nd a speci cally high sensitivity for one of tetrasaccharides, i.e. acarbose shown in Figure 1a.

Acarbose is a drug to treat type-2 diabetes mellitus and obesity by inhibiting α-glucosidase that releases glucose from higher carbohydrates, and therefore its detection is of particular signi cance from the diagnostic viewpoint. e saccharide sensing results of further interesting approach by an in situ hybrid sensor with Cur and PyPT in Figure 1b and their detailed supramolecular complexation will be discussed.