

Macrocyclic derivatives contains sucrose and mannitol: Synthesis and their complexing properties

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Summary of Ph.D. Thesis

The main goals of this Ph.D. dissertation were the synthesis of macrocyclic derivatives based on 1',2,3,3',4,4'-hexa-*O*-metylosucrose in which connected via polyhydroxylated chain and checking their complexing properties towards enantiomers of 1-phenylethylamine salt.

The literature survey contains two parts. In the first one, physicochemical properties, as well as, the synthesis of sucrose derivatives with the unprotected primary hydroxyl groups are reviewed. Methods of the functionalization of such derivatives are also presented. Second part described the synthesis and properties of macrocyclic derivatives with sucrose scaffold.

In the chapter devoted to own research, the synthesis of sucrose macrocyclic derivatives in which the terminal positions: C6 and C6' are connected via a polyhydroxylated chain and presented. These macrocycles were built on 1',2,3,3',4,4'-hexa-*O*-methylsucrose scaffold. All such macrocyclic derivatives were tested for their ability to recognize both enantiomers 1-phenylethylamine salt.

In the experimental part shown methods of synthesis new compound based on sucrose scaffold and D-mannitol linkers with full sets of analytical were given.