
PREFACE

Uronic acids are found in nature as complex polysaccharides which show various biological activities. These are main constituents of glycosaminoglycans (GAGs) such as heparin sulphate, dermatan sulphate, chondroitin sulphate and hyaluronan which are highly significant in medicinal chemistry. Recently, there has been tremendous interest towards the development and synthesis of sugar-based drugs, vaccines, cosmetics, etc. due to their structural diversity and compatibility with living systems.

In this context, the thesis entitled “**Synthesis of Uronic Acid Building Blocks and Their Application in Oligosaccharide Synthesis**” will introduce methods for synthesis of uronic acids and their utility in glycosylation and oligosaccharide synthesis. **Chapter 1** will give a general introduction to uronic acids and briefly discusses the structure and functions of some vital polysaccharides containing uronic acids. It will also accumulate few strategies for the synthesis of uronic acid containing oligosaccharides. **Chapter 2** will include the synthesis of various orthogonally protected uronic acids using TEMPO and iodine (III) reagent at room temperature. **Chapter 3** will describe the synthesis of uronic esters using $\text{H}_2\text{SO}_4\text{-SiO}_2$ at room temperature. **Chapter 4** will highlight the use of photolabile protecting group in the protection of uronic acids and their efficient and selective deprotection under UV light (355nm) with the assistance of continuous flow photoreactor. **Chapter 5** will present the synthesis of photolabile group protected anomeric acetals and their selective photo deprotection to obtain corresponding hemiacetals in high yields. Finally, **Chapter 6** will summarize and conclude the total thesis work.