PROTECTING-GROUP-FREE SYNTHESIS OF CHONDROITIN 6-SULFATE DISACCHARIDE AND TETRASACCHARIDE

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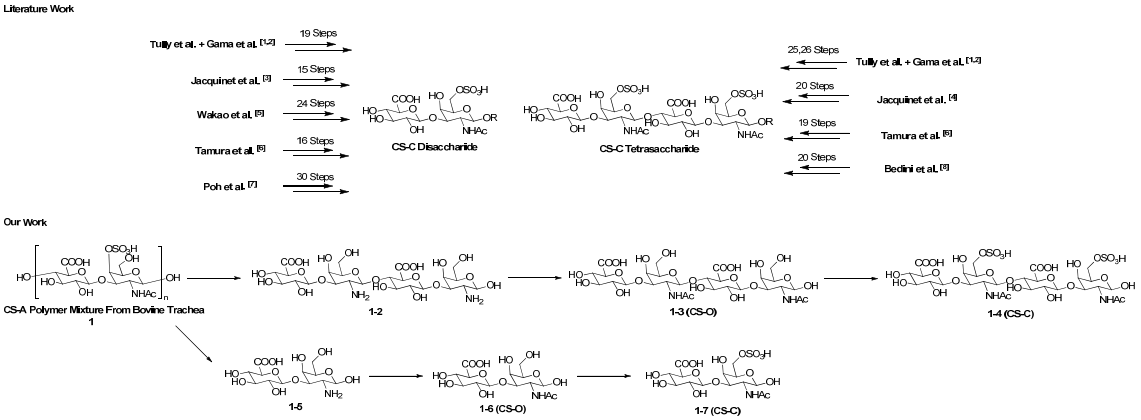
Chondroitin sulfate (CS), a part of the glycosaminoglycan (GAG) family, occurs naturally as a component in cartilage around joints in the body. Being heavily involved in the regulation of several physiological processes, it is essential that pure CS with specific sulfation patterns are obtainable in an efficient manner. However, current methods of CS synthesis involves long and arduous synthesis using protection chemistry. Purification of CS from natural sources was also deemed to be tough due to problems in isolation of CS with specific sulfation patterns and the complexity of CS structures. CS-C, in particular, is important amongst other CS analogues as it improves cell proliferation, adhesion and migration which means that it has high potential in recovery and healing applications. CS-C was also found to have a significant role in the development, progression and metastasis of cancer. We describe in this study a quick and efficient 3-step synthesis of the C6'-sulfated CS (CS-C) which also provided CS-O in the process.



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