

Synthesis of esters derived from 2,3,4-tri-*O*-benzyl- α -*D*-methylglucoside

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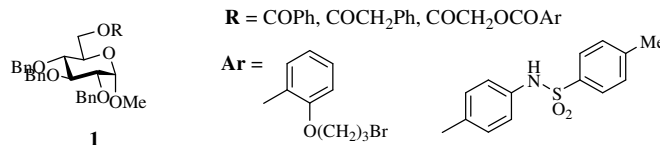
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Carbohydrates and glycoconjugates are involved in many normal and pathologic biological processes including cellular recognition, tumour metastasis, bacterial and viral infections.¹ The biological activity of carbohydrates depends generally on their ability to bind to specific receptors namely those containing *O*-sulfate esters. These carbohydrate derivatives occur widely in nature and play an essential role in many biological processes.² The regiospecific synthesis of sugar esters is a difficult and challenging task. One approach described in the literature involves sugar derivatives soluble in organic media, namely the esterification of methyl glucosides.³

In this communication we discuss the synthesis of a set of esters obtained from the *D*-glucose derivative **1** (R=H) by reaction with several carboxylic acids: benzoic, phenylacetic, acetylsalicylic (commercially available), 2-(3-bromopropoxy)benzoic acid and 4-(toluene-4-sulfonfylamino)benzoic acid. Details on the synthesis and characterization of the final compounds will be presented.



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References

- [1] Oliveira, R. N.; Sinou, D.; Srivastava, R. J. *J. Carbohydrate Chem.*, 2006, (25), 407.
- [2] Pole, A. R. *Biochem. J.* **1986**, 236, 1; Ruoslahti, E. *J. Biol. Chem.* 1989, (264), 13369.
- [3] Redmann, I.; Pina, M.; Guyot, B.; Blaise, P.; Farines, M.; Graille, J. *Carbohydrate Res.* 1997, (300), 103 and references cited therein.