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Electrochemical synthesis of C-glycosides as non-natural mimetics of biologically active oligosaccharides

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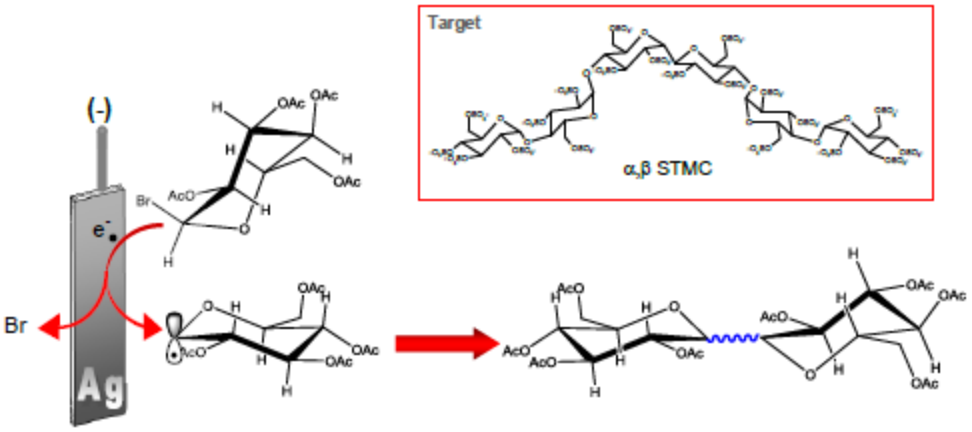
Natural oligosaccharides inhibitors of heparanase and selectins are emerging as promising drugs for cancer therapy. As an alternative tool to the natural ones, sulfated tri maltose C-C-linked dimers (α,α, α,β and β,β STMCs) were prepared by bromo-maltotriose electroreduction on silver cathode,[1] followed by sulfation. The presence of an interglycosidic C-C bond makes STMCs less vulnerable to metabolic processing then their O-analogues. For this reason, STMCs have been studied as drug candidates and inhibitors of carbohydrate processing enzymes. Their activity as inhibitor of P-selectin *in vivo* and in the attenuation of metastasis both on B16-BL6 melanoma cells and on MC- 38 carcinoma cells[2] prompted to the optimization of their synthetic process. Therefore, the electrochemical process for the C-C coupling of the model molecule acetobromoglucose has been investigated by changing various reaction conditions such as solvent and arrangement of the electrolytic cell, aiming at the final scale-up of the reaction.



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