Stereoselective β-C-aryl glycosylation through Ni-catalysed cross-coupling

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Résumé

C-aryl glycosides are an important class of natural products with various biological activities against cancer or as hypoglycemic agents.(1) *Pseudomonas aeruginosa* (PA) is an opportunistic bacterium leading to chronic infections and has now developed antibioresistance, becoming a major threat for human health. Different strategies have been designed to tackle PA infection using multivalent glycoclusters in an antiadhesive strategy.(2) In the same context, we are investigating the synthesis of *C*-aryl β-glycosides as potential ligands of lectins for anti-infectious applications. Very few and recent methodologies propose highly β-stereoselective *C*-glycosylation and using Ni(0) catalysis.(3) We study and report here a robust and β-stereoselective reaction towards *C*-aryl glycosides in the galactose series, from commercially available and bench stable starting materials. *C*-Aryl glycosides in the glucose, fucose and mannose series have also been synthesized to expand the scope of the reaction and will be soon evaluated in biological assays. DFT calculations have been conducted to elucidate the mechanism and rationalize the β-stereoselectivity of the *C*-glycosylation.

Mots-Clés: C, aryl glycoside, catalysis, nickel, methodology

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