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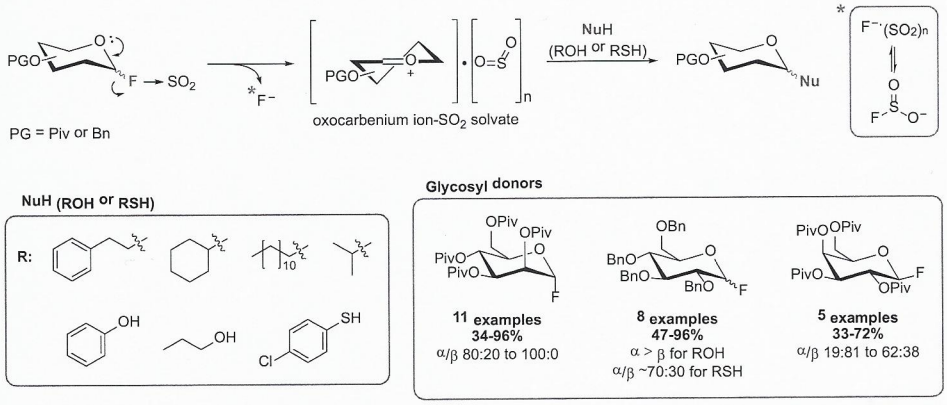
STUDY ON GLYCOSYLATION OF ALCOHOLS AND THIOLS IN LIQUID SO_2

Krista Suta, Jevgeņija Lugiņina, Māris Turks

Faculty of Materials Science and Applied Chemistry, Riga Technical University,
P. Valdena Street 3, Riga, LV-1048, Latvia
E-mail: Krista.Suta_1@rtu.lv

Glycosylation is one of the most important strategy towards glycosidic bond formation in carbohydrate chemistry. Still, there is no universal conditions for glycosylation reaction. Yield, regio- and stereoselectivity are the main criteria that determinate application limits of known glycosylation methods. Appropriate, even specific, combination of glycosyl donor and its activator, glycosyl acceptor and solvent has to be developed to reach optimal results [1]. Glycosyl halides are widely used glycosyl donors with glycosyl fluorides being the most stable ones [2]. Based on Lewis acid properties of liquid SO_2 as well as Eisfeld study on solvation of fluoride ion by this unconventional solvent [3], we decided to explore glycosylation reaction in liquid SO_2 by employing glycosyl fluorides as glycosyl donors.

Herein we report new conditions for synthesis of *O*- and *S*-glycosides from glycosyl fluorides by glycosylation of alcohols and thiols in liquid SO_2 in the absence of any additional activator. Method is applicable only for glycosyl donors with protecting groups that are stable in acidic media, otherwise deprotection occurs leading to inseparable mixture of monosaccharides. Reactivity of nucleophiles under these conditions corresponds to the theory and isolated yields of desired glycosides reach up to 96%, while stereoselectivity highly depends on substrate steric effects.



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