THE SYNTHESIS OF DODECO-6,7-DIULOSES

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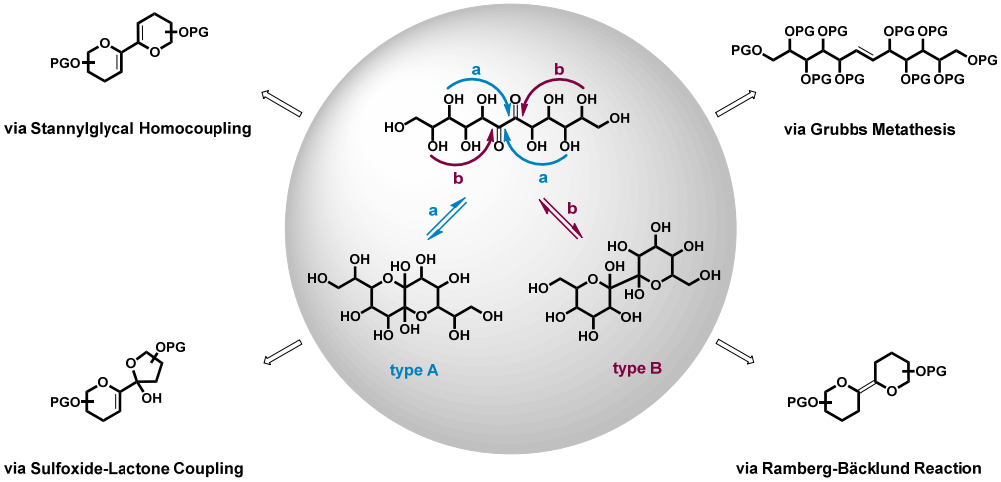
Over the last two decades, bicyclic sugars gained considerable interest, due to their ability to act as glycosidase inhibitors [1]. In this work, we present new synthetic strategies for the preparation of symmetrical vicinal diuloses, which depict a rare class of sugars. There are only three similar diuloses that has been described in the literature [2] [3] [4]. Furthermore, another representative of this class was extracted from the roots of the Mexican plant *Psacalium peltatum* and was proven to cause hypoglycemic effects [5].



We highlight the anomeric connection of two sugar moieties which display the crucial key step in every established synthetic method. For this purpose, glycal derivates are used as versatile precursors. Thus, 1-tributylstannyl glycals perform homocoupling reactions under Stille conditions to furnish glycal dimers [6], whereas phenylsulfinyl glycals attack carbohydrate lactones in the present of a strong lithium base. The Grubbs metathesis of terminal hept-1-enitols depicts another alternative, providing long-chaindodeco-6-enitols. Furthermore, sulfon bridged dipyranosids convert to dimeric *exo*-glucals via a Ramberg-Bäcklund reaction. Oxidation and deprotection of the C1-C1' linked intermediates provide the appropriate Dodeco-6,7-diuloses in all cases.

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