**Selective C–O bond reductions in carbohydrate derivatives using boron based reagents**

Boron reagents have been used increasingly, particularly in organic and synthetic chemistry, in recent decades. Tris(pentafluorophenyl)borane has become an important catalyst due to its role as a strong Lewis acid. This catalyst has led to alternative mechanistic pathways in the reduction of a wide variety of functional groups, including the reduction of C-O bonds. As C-O bonds are ubiquitous in nature this has led the desire to develop biofuels and fine chemicals from the cleavage of these bonds. Herein we describe the reduction and cyclization of carbohydrate derivatives, isosorbide and isomannide, using stoichiometric amounts of catecholborane and catalytic amount of B(C6F5)3. Mechanistically, it is hypothesized that the furan rings are reduced selectively at the primary position in the carbohydrate derivatives, generating a 1, 6-deoxytetraol. The tetraol can then form a new furan through intramolecular attack from the C2 to the C5 position. This reduction of isosorbide produces a product with inversion symmetry and three contiguous stereocenters.