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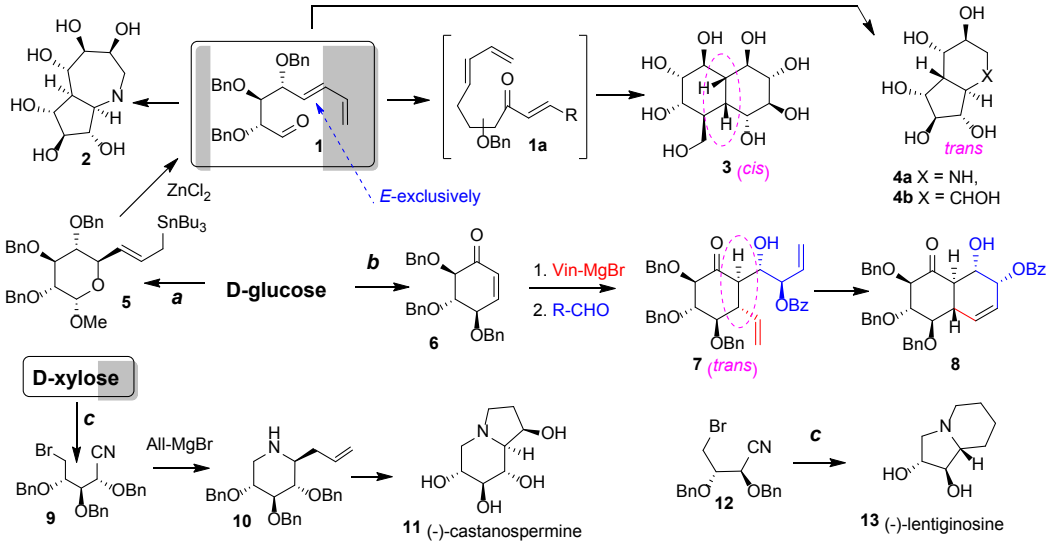
Slawomir Jarosz

Institute of Organic Chemistry Polish Academy of Sciences, Poland

Stereoselective synthesis of sugar mimetics from simple monosaccharides

The concise approach to bicyclic imino- and carbasugars from simple monosaccharides will be presented. First method is based on the fragmentation of sugar allyltins (*e.g.* 5) into dienoaldehyde 1 which is further converted into carbasugars (3, 4b) or iminosugars (2, 4a. The configuration at the ring junction (*cis*-decalin and *trans*-hydrindane), is fixed which results from the mechanism of the cyclization of intermediates. Problem of obtaining the alternative trans isomers of decalin was solved by an introduction of both substituents in the *trans*-relation before cyclization (route b). Aldehyde 1 was also used for the preparation of iminosugars (*e.g.* 2 and 4a). Besides the 'allyltin' approach to iminosugars, we have elaborated also another one starting from sugar derived bromonitriles (*e.g.* 9) which allow for the efficient preparation of bicyclic iminosugars.



Biography

Slawomir Jarosz has completed his PhD in 1979 at the IOC, PAS and he is now a full professor at this Institute since 1999. Since 2011 he is a general director of this institute and, since 1999, a head of the carbohydrate group. He spent 1 year (1980) as a post-doc in the group of professor Bert Fraser-Reid (Maryland, US) and 1 year as a visiting scientist (1988) at Duke University (US). He published ca 190 papers and promoted 18 PhD students.

slawomir.jarosz@icho.edu.pl