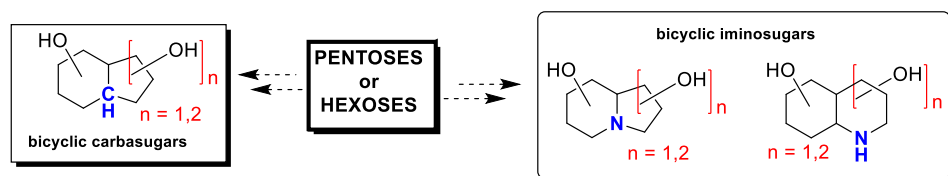


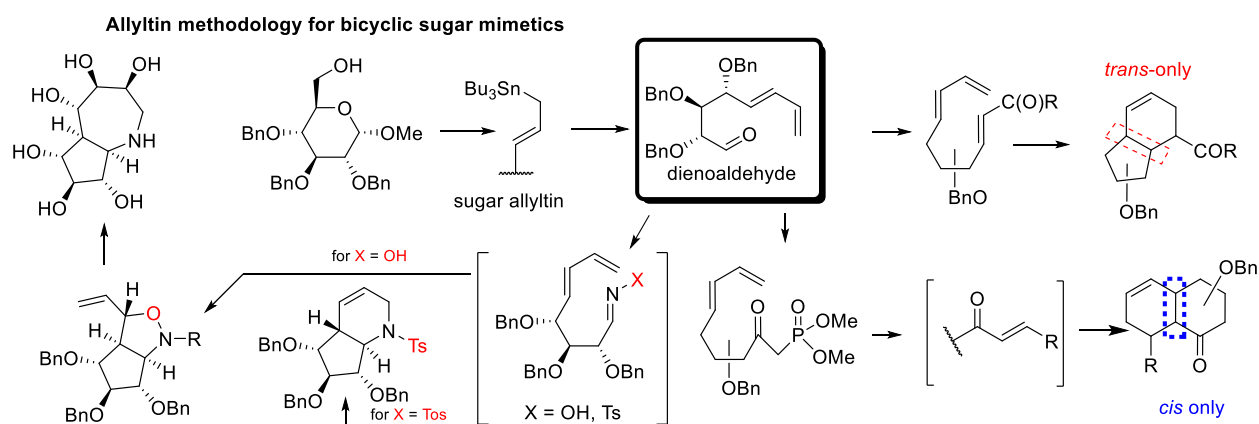
## Stereocontrolled organic synthesis directed to sugar mimetics.

Sugar mimetics, due to their similarity to carbohydrates, are recognized by appropriate enzymes but – since they are not metabolized – they block their active centers which is very important in the therapy of diseases resulting from abnormal metabolism.

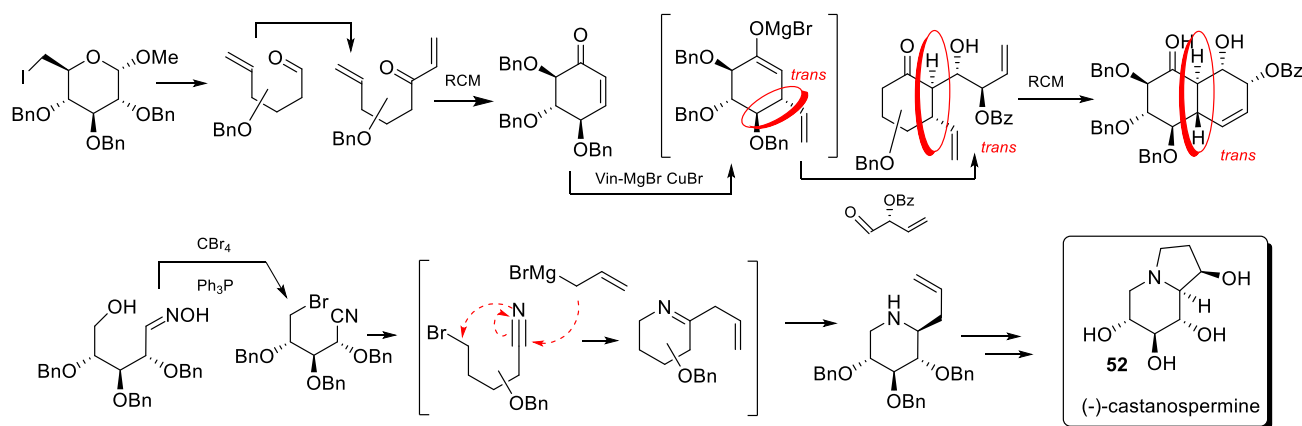
In our Group we work on the efficient synthesis of such mimetics (carba- and aza-bicyclic) from simple sugars. A number of bicyclic imino- and carba-sugars were obtained from simple monosaccharides (hexoses or pentoses) by various methods.



First one – so called allyltin method – is based on the conversion of simple monosaccharide into a dienoaldehyde (*via* sugar allyltin derivative) which can serve as a starting material for the preparation of different bicyclic carbasugars or iminosugars.



**Tin-free methods:** To avoid toxic organotin derivatives another methods were developed. According to them the *trans* decalins and selected iminosugars were obtained.



Summary: S. Jarosz, K. Tiara, M. Potopnyk, *Pure Appl. Chem.*, **2019**, 97 (7), 1137-1148.