

Dey, S.; Jayaraman, N., 2014, "Glycosidic bond hydrolysis in septanosides: A comparison of mono-, di- and 2-chloro-2-deoxy-septanosides", *Carbohydr. Res.*, 399, 49 – 56.

This article deals with a study of the glycosidic bond stabilities of three closely related septanosides. These three septanosides were chosen to represent a monoseptanoside, a diseptanoside and a 2-deoxy-2-chloro septanoside. Syntheses of these septanosides utilize an oxyglycal route which we established previously. Whereas septanosides with different modifications were accomplished previously, the use of an oxyglycal not only as the glycosyl acceptor, but also as a glycosyl donor is disclosed in this report. Such an approach facilitated synthesis of a fully-functionalized diseptanoside. Further, synthesis also includes deriving a 2-deoxy-2-chloro monoseptanoside, illustrating the stability of the chloro-oxepine for further synthetic modifications, without affecting the chloride substituent. Upon synthesis, we undertook to evaluate the glycosidic bond stabilities in these septanosides, through an acid-catalysis. From a kinetic study at varying temperatures, we identify the relative glycosidic bond stabilities. The glycosidic bond stabilities are rationalized by invoking a role for the exocyclic substituents. Currently, there is no elaborate study on septanoside hydrolysis, as opposed to the furanosides and pyranosides.