

Dey, S.; Jayaraman, N., 2014, "Exclusive ring opening of gem-dihalo-1,2-cyclopropanated oxyglycal to oxepines in AgOAc", *Carbohydr. Res.*, 389, 66 – 71.

This Article pertains to a study of the ring-opening reaction of cyclopropanated oxyglycals with alcohols under acidic conditions. Whereas the reactivities of such derivatives were studied under basic conditions, leading to the formation of septanosides, it became imperative to verify the same under acidic conditions. The reaction was anticipated assisting the cyclopropyl group ring opening, however, the intermediate thus formed was of special interest. Would this intermediate undergo a rearrangement, as in the case of cyclopropanated glycal derivatives, to afford furanosides as the end product. In the event, we observe that cyclopropanated oxyglycals do not undergo rearrangement reactions, rather the oxygen functionality at C-3 of the newly formed oxepine intermediate provides a stability, even when the reaction is under prolonged acidic treatment. The observation is discussed in comparison to the known reactivity profile of the cyclopropanated glycal derivatives. Several alcohols were tested for the ring opening reactions, and in all cases, only oxepines were obtained exclusively. A mechanistic possibility is also discussed in comparison to cyclopropanated glycals. The study herein establishes the reactivity differences between cyclopropanated oxyglycals and glycals. Exclusive formation of oxepines when using oxyglycal synthon is a major advantage when septanosides are the target sugars in synthetic schemes.