

Dey, S.; Jayaraman, N., 2012, "Branching out at C-2 of septanosides. Synthesis of 2-deoxy-2-C-alkyl/aryl septanosides from a bromo-oxepine", *Beil. J. Org. Chem.*, 8, 522 – 527.

This manuscript reports the synthesis of several new seven-membered cyclic monosaccharides, namely, the septanosides, bearing C-C bond at C-2, so as to secure 2-deoxy-2-C-alkyl/aryl septanosides. Facile synthesis of this hitherto unknown series of 2-deoxy-2-C-alkyl/aryl septanosides was augmented with the use of bromo-oxepine, which we established previously towards synthesis of several septanosides and septanoside containing di- and trisaccharides. The work is based on expanding the scope of bromo-oxepine intermediates, in order to realize septanoside derivatives, specifically, 2-deoxy-2-C-alkyl/aryl derivatives. C-2 of pyranoses and furanoses undergoes most changes generally, reflecting the susceptibility of this carbon in varied reactivity and functions of a sugar. The ability to derive such 2-deoxy derivatives of a higher homologue of the sugar, namely, septanosides attracts an interest. The reactivity of vinyl bromide, corresponding to a bromo-oxepine, was tested towards three versatile C-C bond forming organometallic reactions, namely, Heck, Suzuki and Sonogashira coupling reactions. The reactions were performed with few substrates in each case, providing overall more than a dozen 2-deoxy-2-C-alkyl/aryl septanoside derivatives. The reactivity highlights the usefulness of bromo-oxepine, which has so far utilized only to prepare septanoside derivatives.