

Mukherjee, A.; Jayaraman, N. 2013, "Facial selectivities in the nucleophilic additions of 2,3-unsaturated 3-arylsulfinyl pyranosides" *Carbohydr. Res.*, 380, 51 – 58.

This report deals with the studies of facial addition patterns of nucleophiles on C-3 substituted 2,3-unsaturated sugar vinyl sulfoxides. The rich reaction possibilities around vinyl sulfoxides in general and sugar vinyl sulfoxides, in particular, prompted us to investigate the conjugate addition reactions. The conjugate addition reactions on sugar vinyl sulfoxides encounter stereoelectronic and steric influences from substituents exocyclic to the sugar ring and form a formidable challenge to understand the reactions. A systematic study of the conjugate addition reactions with nitrogen, carbon and sulfur derived nucleophiles was undertaken. A predominant facial entry of the nucleophile onto vinyl sulfoxide functionality was observed depending on the substituent on the aryl vinyl sulfoxide moiety and that of the nucleophile. More importantly, the conjugate additions were observed to proceed through an addition-elimination route so as to result in an un-saturated conjugate addition product.