

Daskhan, G. C.; Jayaraman, N., 2011, "Increased glycosidic bond stabilities in 4-C-hydroxymethyl linked disaccharides", *Carbohydr. Res.*, 346, 2394 – 2400.

This Article presents results of a study on the glycosidic linkage arising from hydroxymethyl linkage. Enhanced glycosidic bond stability continues to be an important theme in glycosyl mimetics research and advancement. In queries relating to assessing glycosidic bond stability, we undertook a programme to identify stabilities of non-natural disaccharides presenting a hydroxymethyl linked glycosidic bond. This line of query was undertaken in view of sustained investigations known so far on the stabilities of glycosidic bonds in a number of configurationally varying disaccharides. In the studies so far, configurations of endocyclic substituents and their effect on the glycosidic bond stability were assessed. The present work attempts to identify the role of exocyclic substituent on the stability of a glycosidic bond. In this query, three non-natural disaccharides, having close similarity to naturally-occurring cellobiose, lactose and maltose, were synthesized and their glycosidic bond stabilities were assessed under an acid-catalyzed condition. From kinetic studies, it is observed that these new disaccharide analogues are more stable than naturally-occurring disaccharides. Further, hydroxymethyl-linked glycosidic bond provides possibilities for structural variations around the glycosidic bond, by which sustained studies are also clearly visible in further investigations.