

## **Comprehensive study on transglycosylation of CGTase from various sources**

### **Abstract**

Transglycosylation is the in-vivo or in-vitro process of transferring glycosyl groups from a donor to an acceptor, which is usually performed by enzymatic reactions because of their simplicity, low steric hindrance, high region-specificity, low production cost, and mild processing conditions. One of the enzymes commonly used in the transglycosylation reaction is cyclodextrin glucanotransferase (CGTase). The transglycosylated products, catalyzed by CGTase, are widely used in food additives, supplements, and personal care and cosmetic products. This is due to improvements in the solubility, stability, bioactivity and length of the synthesized products. This paper's focus is on the importance of enzymes used in the transglycosylation reaction, their characteristics and mechanism of action, sources and production yield, and donor and acceptor specificities. Moreover, the influence of intrinsic and extrinsic factors on the enzymatic reaction, catalysis of glycosidic linkages, and advantages of CGTase transglycosylation reactions are discussed in detail.