

Catalytically, the partially purified glycosyltransferase showed a pH optimum of 9 to 10 and a temperature optimum of 37°C. The substrate specificities were also analyzed. UDP-glucose was the best sugar donor with a K_m of 0.15 mM which ADP-glucose was not and UDP-galactose was only half as good as UDP-glucose. Among the sugar acceptors tested, acetone cyanohydrin was the best and better than butanone cyanohydrin. Other aliphatic alcohols were poorer sugar acceptors in the following order: isopropanol, butanol, ethanol and glycerol. Phenol was unable to serve as the sugar acceptor for this enzyme.

The enzyme was unable to catalyze the transfer of glucose from UDP-glucose to starch, linamarin or simple sugars i.e. glucose, galactose and sucrose. However, a high glucosyltransferase activity was detected in the presence of UDP-glucose and fructose with a K_m for fructose of 4.4 mM. This activity could be due either to a contaminating UDP-glucose: D-fructose-glucosyltransferase or to cassava glucosyltransferase having two activities, one for linamarin synthesis and the other for sucrose synthesis.