Isolasi enzim sukrosafosforilase rekombinan dari escherichia coli BL-21StarTM dan esei aktivitas transglikosilasi terhadap substrat asam kojat = Isolation of recombinant sucrose phosphorylase enzyme from escherichia coli BL-21 StarTM and Its transglycosylation activity assay using kojic acid as substrate

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Abstrak

Sukrosafosforilase (SPase) merupakan suatu enzim yang dapat mengkatalisis reaksi pemindahan gugus glukosil dari molekul donor ke suatu molekul aseptor (glukosilasi). Glukosilasi telah banyak dimanfaatkan, terutama untuk meningkatkan stabilitas dan karakteristik suatu senyawa bioaktif. Pada penilitian ini dilakukan isolasi SPase dari bakteri Escherichia coli BL-21 STARTM rekombinan yang membawa gen penyandi sukrosafosforilase asal Leuconostoc mesenteroides MBFWRS-3(1). Uji konfirmasi berat molekul enzim telah berhasil dilakukan dengan SDS PAGE dan ditunjukan bahwa berat molekul SPase rekombinan berkisar antara 45?66 kDa, hal tersebut sesuai dengan studi sebelumnya. Aktivitas enzim diketahui dengan metode spektrofotometri dan didapatkan bahwa aktivitas relatif SPase rekombinan sebesar 98,5%. Esei aktivitas transglikosilasi SPase rekombinan terhadap substrat asam kojat telah berhasil dilakukan. Berdasarkan pengamatan KLT Densitometer, didapatkan bahwa produk transglikosilasi hasil esei aktivitas transglikosilasi SPase rekombinan dan SPase standar terhadap asam kojat memiliki kemiripan.

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Sucrose Phosphorylase (SPase) is an enzyme that catalyzes glucosyl transfer reaction from donor molecules to acceptor molecules (glucosylation). Glucosylation has been used for many things, especially to increase chemical stability and improving characteristic of several bioactive compounds. In this study SPase has isolated from Escherichia coli BL-21 STARTM recombinants that carried gene of SPase expression from Leuconostoc mesenteroides MBFWRS-3(1). Confirmation of molecular weight has done by SDS PAGE and showed that the molecular weight of SPase was in range 66?45 kDa, as reported in other existed SPase studies. The activity enzyme obtained by using the spectrophotometric method, and performed relative activity 98.5 %. Transglucosylation activity assay of SPase recombinant has done to kojic acid. Based on TLC Densitometry analyzes, transglucosylation product of SPase recombinant was similarly to transglucosylation product of SPase standart.