

POLA PRODUKSI ENZIM GLUKOSILTRANSFERASE OLEH *Streptococcus salivarius* YANG DIISOLASI DARISALIVA MANUSIA



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Telah dilakukan penelitian tentang pola produksi enzim glukosiltransferase oleh *Streptococcus salivarius* yang diisolasi dari saliva manusia. Penelitian ini bertujuan untuk memperoleh *Streptococcus salivarius* yang diisolasi dari saliva manusia, mengetahui pola pertumbuhan *S. salivarius*, mengetahui pola produksi enzim glukosiltransferase, dan mengetahui besar unit aktivitas enzim glukosiltransferase pada kondisi percobaan. Isolasi *S. salivarius* dari saliva manusia digunakan sistem gaspak anaerob untuk memperoleh kondisi anaerob. Koloni yang diduga sebagai *S. salivarius* dilakukan uji biokimia terhadap beberapa senyawa organik. Hasil uji biokimia menunjukkan *S. salivarius* dapat melakukan proses fermentasi anaerob terhadap sukrosa dan laktosa. Pola pertumbuhan *S. salivarius* ditentukan dengan mengukur densitas optik suspensi sel pada panjang gelombang 600 nm setiap selang 3 jam. Pola pertumbuhan *S. salivarius* menunjukkan fase pertumbuhan lambat pada jam ke 0 sampai jam ke 1,5, fase logaritmik pada jam ke 3 sampai jam ke 6, dan fase menuju kematian pada jam ke 9. Pola produksi enzim glukosiltransferase ditentukan dengan cara mengukur kadar fruktosa yang dibebaskan dari reaksi katalitik enzim gtf dengan metode sistein-karbazol. Pola produksi enzim glukosiltransferase menunjukkan satu puncak dengan aktivitas optimum pada jam ke 18, kemudian aktivitas menurun seiring dengan lisisnya sel. Produksi enzim glukosiltransferase pada 150 mL medium BHIB mempunyai aktivitas total sebesar 24,75.103 U.

Translation:

The production profile of glucosyltransferase enzyme by Streptococcus salivarius isolated from human saliva has been studied. This purposes were to obtain S. salivarius isolated from human saliva, to know the growth profile of S. salivarius, to know the production profile of glucosyltransferase enzyme, and to know unit activity of glucosyltransferase enzyme in experiment condition. The isolation of S. salivarius from human saliva was used gaspak anaerobic system to get anaerobic condition. The colony which estimated as S. salivarius was done biochemistry test for several organic compounds. The result of biochemistry test was showed that S. salivarius has capability anaerobic fermentation for sucrose and lactose. The growth profile of S. salivarius was decided by measure of optical density cell suspension at wavelength 600 nm every 3 hours. The growth profile of S. salivarius was showed that growth phase slowly at 0 until 1,5th hours, logaritmik phase at 3th until 6th hours, and death limiting phase at 9th hour. The production profile of glucosyltransferase enzyme was decided by measure concentracion of fructose which was released from glucosyltransferase enzyme cathalytic reaction by carbazole systein method. The production profile of glucosyltransferase enzyme was

showed one peak with optimum activity at 18 hour, then the activity decrease. It's followed with the cell lysis. The production of glucosyltransferase enzyme have total activity 24,75.103 U at 150 mL volume of the BHIB liquid culture.