Pengaruh homogenisasi dan penambahan nitrogen dalam medium pertumbuhan pada teknik hidrolisis terhadap penghilangan selubung mucilage strain-strain cyanobacteria filamen lurus = The effect of homogenization and addition of nitrogen in growth medium in hydrolysis techniques on mucilage sheath removal of filamentous cyanobacteria strains

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Abstrak

ABSTRAK
Penelitian mengenai optimasi teknik hidrolisis selubung mucilage untuk meningkatkan konsentrasi dan kemurnian DNA Cyanobacteria filamen lurus yang ditumbuhkan pada medium dengan dan tanpa unsur nitrogen telah dilakukan. Penelitian bertujuan untuk mengetahui pengaruh homogenisasi dengan glass beads dan penambahan nitrogen pada medium terhadap penghilangan selubung mucilage strain Cyanobacteria filamen lurus. Strain Cyanobacteria yang digunakan adalah SO-24, SO-115, dan SO-163. Masing-masing strain uji ditumbuhkan di medium Blue-Green 11 BG-11 dengan dan tanpa unsur nitrogen, kemudian dilakukan homogenisasi dengan glass beads, hidrolisis selubung, dan ekstraksi DNA. Efektivitas optimasi teknik hidrolisis dilihat berdasarkan hasil pengamatan mikroskopik dengan dan tanpa pengecatan negatif, serta berdasarkan hasil pengukuran konsentrasi dan kemurnian DNA. Hasil penelitian menunjukkan proses homogenisasi tidak memberikan pengaruh terhadap penghilangan selubung mucilage, sedangkan penambahan nitrogen pada medium memengaruhi penghilangan selubung mucilage pada ketiga strain uji. Teknik hidrolisis efektif untuk menghilangkan selubung mucilage strain SO-24 pada medium dengan dan tanpa unsur nitrogen. Sementara itu, strain SO-115 dan SO-163 hanya efektif pada medium dengan unsur nitrogen. Ketiga strain uji menghasilkan konsentrasi DNA yang rendah yaitu berkisar dari 1,58 mdash;4,52 ng/ L dengan kemurnian DNA di bawah 1,8.
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ABSTRACT
Research on the optimization of hydrolysis techniques to improved DNA concentration and purity of filamentous Cyanobacteria which were grown in medium with and without nitrogen content has been conducted. The research aims to know the effect of homogenization with glass beads and addition of nitrogen in medium on mucilage sheath removal of filamentous Cyanobacteria. Strains of Cyanobacteria was used is SO 24, SO 115, and SO 163. Each strain was grown in Blue Green 11 BG 11 medium with and without nitrogen content, and then homogenized with glass beads, hydrolyzed process, and DNA was extracted. The effectivity of hydrolysis techniques was achieved based on microscopic observation with and without negative staining, and based on measuring result of DNA concentration and purity. The result showed that homogenization process doesn rsquo t affect mucilage sheath removal, however addition of nitrogen affects mucilage sheath removal. The hydrolysis techniques effective on mucilage sheath removal from strain SO 24 which was grown in medium with and without nitrogen content. Meanwhile, for strain SO 115 and SO 163 were effective only in medium with nitrogen content. The result of DNA concentration showed that all of strains showed low DNA concentration with value range from 1,58 mdash 4,52 ng L with

DNA purity was below 1,8.