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Evaluasi Potensi Osmotic Downshock sebagai Metode Disrupsi Sel pada Planococcus sp. JS01
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INTISARI

Recombinant proteins produced intracellularly by host cells require cell disruption to obtain the target product. Conventional methods such as sonication and the French press have several limitations, necessitating a simpler alternative. This study aims to evaluate the potential of osmotic downshock as a cell disruption method for *Planococcus* sp. JS01. *Planococcus* sp. JS01 was grown in Luria-Bertani (LB) medium supplemented with 15% NaCl, followed by osmotic downshock treatment via incubation in sterile distilled water for 30 minutes. The viability of the cells subjected to osmotic downshock was analyzed. The resulting supernatant yielded genomic DNA. The obtained genomes were analyzed via 16S rRNA gene PCR, sequencing, comparison with the BLAST database, and phylogenetic analysis. The results showed that 82.6% of the cells were lysed due to osmotic downshock. A 10-kbp genome was successfully isolated from the supernatant and exhibited 99.86% sequence similarity to *Planococcus* sp. JS01.

Kata kunci: DNA genom, ektoin, *osmotic downshock*, *Planococcus*.

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ABSTRACT

Recombinant proteins produced intracellularly by host cells require cell disruption to obtain the target product. Conventional methods such as sonication and the French press have several limitations, making a simpler alternative necessary. This study aims to evaluate the potential of osmotic downshock as a cell disruption method for *Planococcus* sp. JS01. *Planococcus* sp. JS01 was grown in Luria-Bertani (LB) medium supplemented with 15% NaCl, followed by osmotic downshock through incubation in sterile distilled water for 30 minutes. The resulting supernatant was analyzed using FTIR, while the isolated genome was analyzed via 16S rRNA gene PCR, sequencing, comparison with the BLAST database, and phylogenetic analysis. The results showed that 82.6% of the cells were lysed due to the osmotic downshock. A 10-kbp genome was successfully isolated from the supernatant and exhibited 99.86% sequence similarity to *Planococcus* sp. JS01.

Keywords: Ectoine, genomic DNA, osmotic downshock, *Planococcus*.