

# Kloning gen penyandi lysophospholipase dari bacillus halodurans CM1 ke escherichia coli DH5= Cloning gene encoding lysophospholipase from bacillus halodurans CM1 to escherichia coli DH5

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## Abstrak

Enzim merupakan biokatalisator yang banyak digunakan di bidang industri, terutama deterjen, farmasi, makanan bahkan pemurnian minyak. Salah satu enzim yang banyak digunakan untuk pemurnian minyak ialah lysophospholipase. Sebanyak 50 kebutuhan enzim industri diperoleh dari mikroorganisme. Akan tetapi umumnya produk aktivitas enzim oleh mikroba galur liar kurang memadai untuk aplikasi di industri, sehingga perlu dilakukan rekayasa genetik. Pengklonaan gen penyandi lysophospholipase pernah dilakukan di *Aspergillus niger* dan *Cryptococcus neoformans*, tetapi belum pernah dilakukan dari bakteri alkalotermofilik. *Bacillus halodurans* CM1 merupakan bakteri alkalotermofilik isolat BPPT. Penelitian terdahulu menunjukkan bahwa bakteri tersebut memiliki enzim lipase, tetapi belum diteliti lebih lanjut mengenai jenis dan lipase rekombinannya. Penelitian ini bertujuan untuk mengklona gen penyandi lysophospholipase dari *Bacillus halodurans* CM1 ke *Escherichia coli* DH5 $\alpha$  menggunakan vektor pGEM-T easy. Plasmid rekombinan tersebut disekuensing. Hasil penelitian diperoleh fragmen gen penyandi lysophospholipase yang berukuran 783 pasang basa serta tingkat homologi 100 dengan genom *Bacillus halodurans* C-125 yang menyandi gen lysophospholipase No akses GenBank: BA000004.3.

.....Enzyme is a biocatalyst widely used in industry, for example detergent, pharmaceutical, food or oil purification. One of the most widely used enzymes for oil purification is lysophospholipase. As much as 50 of industrial enzyme needs are obtained from microorganisms. However, enzyme productivity from wild type microbial strain is usually limited and not applicable in industry, so that genetic engineering is necessary. Cloning gene encoding for lysophospholipase was once performed in *Aspergillus niger* and *Cryptococcus neoformans*, but has never been done from alkalothermophilic bacteria, such as *Bacillus halodurans*. *Bacillus halodurans* CM1 is an isolate of BPPT. Previous research has shown that this bacteria have lipase enzymes, but the study about their properties have not been conducted. This study aims to clone the gene of lysophospholipase from *Bacillus halodurans* CM1 to *Escherichia coli* DH5 using the pGEM T easy vector. The recombinant plasmid is sequenced. The results is gene fragment encoding lysophospholipase obtained with size 783 base pairs and 100 similarity with gene encoding lysophospholipase from *Bacillus halodurans* C 125 No access GenBank BA000004.3.