

**CLONING AND EXPRESSION OF *gelE* GENE  
ENCODE GELATINASE OF *Enterococcus faecalis* MD4  
STRAIN IN *Escherichia coli***

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**Summary**

Gelatinase is an extracellular enzyme commonly found in bacteria such as *Bacillus*, *Enterococcus*, *Pseudomonas*, which are capable of hydrolysing gelatin, collagen, elastin, etc., into amino acids, peptides. In this study, the gelatinase gene encoding *Enterococcus faecalis* MD4 was amplified by specific pairing, splitting and sequencing. Sequencing results showed that the *gelE* gene contained 1475 nucleotides, which was highly similar (99%) to that of the corresponding genes on the GenBank and encoded protein have 427 amino acid. GelE is registered on GenBank under accession number MH720045. Analysis of inferred protein sequences showed that gelatinase had a molar mass of 46 kDa. GelE was attached to expression vector pET-22 (b +) and transformed into *Escherichia coli* and screened for 100 µg / ml ampicillin supplementation. *E. coli* BL21 (DE3) [pET-22b (+) – *gelE*] recombinant strain has a high GEL activity, reaching 2.45 U / ml in LB medium after 5.5 hours induced by IPTG. Results of protein analysis on the SDS-PAGE gel show that recombinant gelatinase are secreted into a culture medium with a molecular weight of about 46 kDa.

**Keywords:** *Enterococcus faecalis*, enzyme expression, recombinant gelatinase, *Escherichia coli*.