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CONSORTIUM

Conference Abstract

CLONING AND EXPRESSION OF LIPASE GENE IN E. COLI

Zeeshan Nadeem, Muhammad Noman Ishaq, Muhammad Shoaib, Dr. Amin Athar

Institute of Biochemistry & Biotechnology, University of the Punjab, Lahore, Pakistan

Corresponding author:
Zeeshan Nadeem. Institute of Biochemistry & Biotechnology, University of the Punjab, Lahore, Pakistan
P: +92 334-9368330
E: xeshan99@gmail.com

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Abstract

After carbohydrates and proteases, based on total sales volumes, lipases are measured to be the third largest group. Lipases have particular significance in biotech industry because of numerous applications in the food industry, medicine industry, enzymatic production of lipophilic chemicals and in production of biological detergents. Lipases are mostly produced commercially by heterologous expression system. In this study, gene of extracellular lipase of *Pseudomonas aeruginosa* has been expressed in *E. coli*. The gene consists of 1700 bp. By designing gene specific primers, 1700 bp lipase gene was amplified from the genomic DNA of *P. aeruginosa*. The *Pseudomonas aeruginosa* lipase (PAL) gene was cloned in pTZ57R/T and transformed in *E. coli* DH5α. Positive clones carrying pTZ-PAL were initially screened by blue white screening and further confirmed by colony PCR, plasmid PCR and restriction analysis. For expression of recombinant protein, the restricted gene was subcloned in pET28a (+) expression vector and introduced in *E. coli* strain BL21. Upon IPTG induction, the expression of recombinant lipase was analysed by SDS-PAGE. Maximum expression was observed after 14 hours of 0.8mM IPTG induction at 37°C.

Keywords: *Escherichia coli (E. coli), Pseudomonas aeruginosa (P. aeruginosa*.), IPTG, SDS-PAGE