



Designing specific primer to replication partial sequence of the *PgaA* gene responsible for the synthesis of endo-polygalacturonase enzymes in *Aspergillus niger*

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Abstract: Pectin components are polysaccharides that are found in the middle lamella, plant cell wall and most groups of algae. Pectinases are one of the most important enzymes widely distributed in bacteria and fungi. its three major groups include polygalacturonase (PG), pectin esters (PE) and pectin lysates (PL) [1]. In the *Aspergillus niger* the *Pga* gene cluster is responsible for the synthesis of glycoside hydrolase family 28 which secrete polygalacturonase (EC 3.2.1.15) enzymes [2]. Designing and selecting efficient primers with high specificity is the first and most important step in genomic studies and qualitative quantitative assay of the transcription of protein-coding genes [3] In this study sequences related to the *PgaA* gene encoding end-polygalacturonase enzymes were obtained by using the National Center for Biotechnology Information database, from the species of *Aspergillus niger*. The Align of sequences and the selection of conserved sequences and eventually the appropriate primer design were performed using the MEGA6 [4], Oligo7 [5], BioEdit bioinformatics software and the 'Primer 3' web-based application. Foeward and revese primers with PegAF 5 'TGCCAAGCCTTTGTTCTG 3' and PgaAR 5 'TCCATCCCCTCCTCGTAC 3' sequence were designed. Their correct performance confirmed using polymerase chain reaction and electrophoresed product analysis on agarose gel.

Keywords: *Aspergillus niger*; Primer design; *PgaA* gene; Polygalacturonase; Sequence

References

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