Analysis of Differentially Secretome of *Trichoderma reesei* Regulated by Gαi Protein Using Two-dimensional Differential Gel Electrophoresis

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The cellulases produced by *Trichoderma reesei* (*Hypocrea jecorina*) are important industrial biotechnological products, especially for second generation biofuels production from cellulosic wastes. Genetic engineering not only led to significant improvements in industrial processes but also the interesting discoveries about the biology of this fungus. Thus, the objective of this study was to compare the secretoma of QM9414 strain of the fungus *T. reesei* with two mutants strains Δgna1 (deletion of GNA1 Protein) and gna1QL (loss of GTPase activity), grown in medium containing 1% of cellulose as carbon source for 72 hours. After extraction, the proteins were separated by the technique of Two-Dimensional Differential Gel Electrophoresis (2D-DIGE). The comparative analysis between QM9414 and Δgna1 revealed 7 and 93 distinct spots, respectively, and 47 spots in common for the two strains. Comparing QM9414 and gna1QL revealed 8 and 93 distinct spots, respectively, and 48 spots in common. Thus, the two comparisons showed a variation between secretoma of Δgna1 and gna1QL mutants and the parental strain QM9414. The removal of these spots from gels are now undergoing and, the identity of proteins will be revealed by mass spectrometry.

**Keywords:** *Trichoderma reesei*, cellulases, heterotrimeric G-proteins, 2D-DIGE

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