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## Isolation, identification and evaluation of highly cellulases producing *trichoderma* isolates from Egypt

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The objectives of this study were: (1) To characterize some *Trichoderma* isolates morphologically and molecularly, (2) To evaluate the best isolates for producing cellulases enzymes. 20 *Trichoderma* isolates were isolated from soil samples collected from six Egyptian governorates, in addition to seven provided isolates. According to morphological and molecular identification methods they were divided into seven aggregate groups. Selected isolates that showed high ability to degrade cellulase were further evaluated. The result of submerged fermentation technique indicated that three isolates T44, T43 and T24 showed the highest activity for cellulases enzymes FPase, CMCase and  $\beta$ -galactosidase respectively. Also, the isolate T31 showed the highest production of free sugar, while the isolates T14, T19 and T44 demonstrated highest total protein concentrations. As for specific enzyme activity, isolates T17 and T24 were the highest for FPase enzyme, T17 was the highest for CMase enzyme and T24 was the best for  $\beta$ -galactosidase. Furthermore, the result of solid state fermentation technique indicated that isolates T14 was the best for producing FPase and  $\beta$ -galactosidase and T20 was the highest for CMCase enzyme. Also, T20 was the best for producing free sugars while five isolates T1, T17, T20, T31 and T44 were the highest in producing protein. In addition, T17 showed the best hydrolysis percentage for rice straw. Moreover, extracellular proteins were analyzed by electrophoresis SDS-PAGE method. Most of highly producing cellulases isolates showed heavy band at around 65 KDa. Finally, it was concluded T14, T17, T19, T24, T31 and T44 isolates could be recommended for biotechnological applications.

### Biography

Fahmi A I received his Ph.D degree in molecular genetics from Texas A&M University in May 1992. He worked as assistant and associate professor in genetics department, Faculty of Agriculture, Menoufia University. Currently, He is working as a Professor in the same department. He is teaching genetic courses for undergraduate and graduate students. Also, he has supervised many graduate students who has worked for their master and doctorate degrees he is running research programs in the areas of molecular genetics and genetic mapping. Recently, he started a research project about using of *Trichoderma* sp. in hydrolyzing of organic wastes to produce compost for agriculture use. The first phase of this research program needs to isolate some *Trichoderma* highly producing of cellulases enzymes. Therefore, the topic of my abstract is Isolation, identification and evaluation of highly cellulases producing *Trichoderma* isolates from Egypt.

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