

EXTRACELLULAR HYDROLASE ACTIVITIES OF ENDOPHYTIC FUNGI ISOLATED FROM *TAXUS BACCATA*

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Fungal endophytes are a very important and diverse group of microorganisms. They can be found in different part of plants such as bark, leaves and root. Healthy plant tissues are colonized by endophytic fungi without causing any overt symptoms in or apparent injury to the host. In many cases, this relationship could be beneficial to the host as well. Several representatives of endophytic fungi are known as good producers of bioactive substances, including medicinal products, which can be useful in treatment of various diseases and microbial infections. Furthermore, the fungal endophytes produce plant degrading exoenzymes, e.g., cellulases, pectinases, amylases and xylanases, that help them to invade and colonize the host plant tissue and to obtain nutrients from their environment. From industrial point of view, these enzyme activities can be utilized in various biotechnological applications, such as in the food, pharmaceutical and biofuel production industries. Although there are many reports on the production of industrial enzymes from different microbial sources, less attention has been paid on the fungal endophytes in this regard.

In the frame of a previous work numerous endophytic fungal strains were isolated from different *Taxus baccata* samples, and majority of them were taxonomically identified. Here, we aimed to analyze the extracellular hydrolase, i.e., beta-galactosidase, amylase, cellulase, lipase and xylanase, activities of some isolates selected from these endophytes. A total of fifteen isolates from the genera *Neofusicoccum* (1), *Mucor* (5), *Aspergillus* (1), *Sordaria* (1), *Fusarium* (2), *Phoma* (1), *Penicillium* (2) and *Trichoderma* (2) were subjected to conventional plate screening assays. Exoenzyme activity of the tested strains showed high variability. Most of them exhibited considerable amylase and cellulase activities, and some isolates proved to be promising producers of the beta-galactosidase enzyme as well. The best producers with a wide range of enzyme activities were *Sordaria sp.*, *Trichoderma harzianum*, *Mucor sp.* and *Aspergillus sp.* isolates.

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