

ANTIMICROBIAL EFFECT OF SECONDARY METABOLITES EXTRACTED FROM ENDOPHYTIC FUNGI OF *TAXUS BACCATA*

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Endophytes are a group of highly diverse microorganisms living in plant tissues without initiating diseases; moreover, they could be even beneficial for their host. Endophytes are reported to be producers of various secondary metabolites, among others those which could be effective against microbial pathogens. Potentially, these bioactive secondary metabolites could be used in medical treatment, for example in antimicrobial therapy.

In our study, *Taxus baccata* samples were collected from the Botanical Garden of University of Szeged from 13 individual plants. Altogether, 249 endophytic fungi were isolated and until now 90 isolates were taxonomically identified. The endophytic isolates were cultured in potato dextrose broth for 10 days at 25 °C to produce secondary metabolites. After the incubation, each ferment broths were extracted sequentially with hexane, chloroform and ethyl-acetate. In the next step, the bioactivity of each extract was tested on microtiter plate against 5 different bacteria including *Bacillus subtilis*, *Escherichia coli*, *Staphylococcus aureus*, *Micrococcus luteus* and *Pseudomonas aeruginosa*. Against *B. subtilis*, the extracts of a *Penicillium sp.* (H1-3a-RB), three *Trichoderma harzianum* (C3/2-1a-PDA, J3-1L-PDA and F2-5a-RB), a *T. citrinoviride* (H1-1a-RB), an *Alternaria sp.* (F2-2L-RB), a *Fusarium sp.* (I1-2a-PDA/1), and a *Sordaria sp.* (A3-2a-PDA) were the most effective. In the case of *E. coli*, remarkable inhibitions were observed with the extracts of a *Penicillium sp.* (H1-3a-RB), a *T. atroviride* (B2-2a-PDA) and a *Trichoderma sp.* (M1-1a-RB). Against *S. aureus*, *M. luteus* and *P. aeruginosa* the *Penicillium sp.* (H1-3a-RB) showed the strongest inhibitory effect, which was followed by a *Diplodia seriata* (C1-1a-PDA), a *Shaeropsis sapinea* (C2-3L-RB), a *T. harzianum* (H2-2a-RB) and a *Fusarium sp.* (E3-3a-RB) isolate.

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