

ANTIMICROBIAL ACTIVITY OF ENDOPHYTIC FUNGI ISOLATED FROM *SOPHORA FLAVESCENS*

ADIYADOLGOR TURBAT¹, ENKH-AMGALAN JIGJID², LÁSZLÓ MANCZINGER¹,
CSABA VÁGVÖLGYI¹, ANDRÁS SZEKERES¹

¹Department of Microbiology, Faculty of Science and Informatics, University of Szeged,

H-6726, Közép fasor 52., Szeged, Hungary

²Laboratory of Microbiology, Institute of General and Experimental Biology, Mongolian Academy of Science. Ulaanbaatar, Mongolia
adiyadolgor_turbat@yahoo.com (A. T.)

Medicinal plants have been used for centuries as remedies for human diseases due to their components with remarkable therapeutic value. Recently, the endophytic microbes of the medicinal plants have been come to the fore of the microbiological research because of their excellent secondary metabolite secretion abilities. These metabolites are often highly bioactive, involving also in certain cases antimicrobial potentials. Screening for these antimicrobial effects within the endophytic isolates novel lead molecules could be found for the pharmaceutical industry and for future practical applications.

The aim of this study was to investigate the antimicrobial activity of extracts from endophytic fungi isolated from medicinal plant, *Sophora flavescens* occurring on the territory of Dornod province, Mongolia. Totally, 15 endophytic fungi were isolated after a surface sterilization procedure on PDA plates. The strains were characterised taxonomically based on molecular techniques with the PCR amplification and sequencing of ITS region of the genomic DNA. For antimicrobial assay, three organic solvents with different polarities (hexane, chloroform, ethyl-acetate) were applied for the extraction of both mycelia and ferment broth of isolates, which were tested against bacterial strains including *Escherichia coli*, *Pseudomonas aeruginosa*, *Staphylococcus aureus*, *Streptomyces aureus*, *Bacillus subtilis*, *Micrococcus luteus* and *Staphylococcus albus* with micro dilution method based on the guideline of Clinical and Laboratory Standards Institute.

Our experiments revealed, that, generally, hexane extracts of both the ferment broths and the mycelia showed low inhibitory activity against the examined bacteria. When ethyl-acetate used as a solvent, the ferment broth extracts showed higher activity than the mycelial extracts, while with chloroform solvent, both the extracts of the ferment broths and the mycelia showed equally high activity against the examined bacteria.

Acknowledgements

This work was supported by the Hungarian Government and the European Union within the frames of the Széchenyi 2020 Programme through grant GINOP-2.3.2-15-2016-00012. AS was supported through the New National Excellence Program of the Ministry of Human Capacities (ÚNKP-16-4). The infrastructural background was established with the support of GINOP-2.3.3-15-2016-00006 grant (Széchenyi 2020 Programme).