

BIOLOGICAL ACTIVITY OF ETHYL ACETATE EXTRACTS FROM SOIL FILAMENTOUS FUNGI

Enamorado MF, Tapia A, Gouiric S, Feresin GE
Instituto de Biotecnología, Universidad Nacional de San Juan (IBT-UNSJ),
San Juan, Argentina
E-mail: gferesin@unsj.edu.ar

Soil samples were collected on August 2003 in 25 de Mayo district, San Juan Province (Argentina) to perform a screening for filamentous fungi able to produce bioactive extracts. Fungi were isolated by standard microbiological methods and were identified by Dra. S. N. Chulze, UNRC. Ten fungi strains were selected for preparative scale fermentation in different suitable media. A standard two-stage fermentation protocol was employed for scale-up. Fermented culture medium was successively extracted (three times each) with ethyl acetate. After filtration, combined extracts were evaporated to dryness, in order to obtain ethyl acetate extracts. Assays: Antibacterial activity was evaluated by agar dilution method using Müeller-Hinton agar medium for Gram (+) and Gram (-) bacteria. Free radical scavenging effect of fungi extracts was measured by decoloration of 1,1-diphenyl-2-picrylhydrazyl radical (DPPH). Inhibition of germination assay was carried out using *Lactuca sativa* L. and *Phalaris canariensis* L. seeds. Results: *Aspergillus japonicus*, *Fusarium moniliforme*, *Penicillium minioluteum* and *P. purpurogenum* extracts showed a DPPH decoloration > 60% at 100 µg/mL. *F. moniliforme*, *F. oxysporum* and *Aspergillus awamori* extracts showed a 100% germination inhibition of *L. sativa* seeds at 500 µg/mL. *P. chrysogenum* showed higher antibacterial activity against methicillin resistant-*Staphylococcus aureus* at 500 µg/mL. The bioactive extracts will be studied further to isolate the active metabolites.