(4I-P10) Submission ID: IAL0114-00002

ANTIMICROBIAL ACTIVITY OF LICHEN-FORMING FUNGI FROM GENUS *TRYPETHELIUM*

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The genus *Trypethelium* is a widely distributed crustose lichen in tropical areas especially in dry dipterocarp forest. Some metabolites produced from this lichen genus exhibited biological activity. Ascospore discharge technique was performed for isolation of lichen mycobionts from lichen thalli which were collected from various locations in Thailand. Thirty-eight of the selected mycobiont cultures were grown on Malt-Yeast-Extract medium at room temperature for 12 weeks. The restriction fragment length polymorphism (RFLP) analysis based on internal transcribed spacer (ITS) region technique was used to select 18 mycobionts as representative for further studies of secondary metabolite production. Cells of these mycobionts were harvested and extracted for substances by methanol and concentrated by rotary evaporator subsequently. Primary chemical analysis was detected by Thin Layer Chromatography with CH_2Cl_2: MeOH (10 : 0.2) as solvent system. The substances from mycobiont isolate number KY 418 exhibited 13 spots which represented a higher number than others. Furthermore, the potent antimicrobial activities from this isolate were evaluated against represented microorganisms; bacteria *Escherichia coli* and *Staphylococcus aureus*, yeast (*Candida albicans*) and a filamentous fungus (*Aspergillus niger*) by bioautography. Inhibition against *E. coli* was exhibited from spots at Rf value 0.12 and 0.56 respectively. In case of *S. aureus* the result showed that the compound from spot Rf value 0.12 inhibited the test microorganism. A clear zone from antifungal activity against *C. albicans* was recorded from spot Rf value 0.09 but the inhibition of *A. niger* spore germination occurred from compounds with long range Rf values. To compare chemical substances produced by this mycobiont with lichen substances from thalli of *Trypethelium eluteriae*, another TLC with solvent system A; toluene : dioxane : acetic acid (180 : 45 : 5) was tested for comparison of Rf value. The substances produced by the mycobiont displayed 11 spots whilst 10 spots were found from lichen thalli. The same Rf value from both were 0.14 which may be siphulin or cryptostitic acid. Rf values of 0.44 and 0.55 from the mycobiont should be evaluated for secalonic acid and emodin respectively.