

Characterization of secondary metabolites from hexane and chloroform crude of four *Trametes* spp. isolated from Sarawak using analysis of GS-MS

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Abstract

The secondary metabolite from hexane and chloroform crude extract of fruiting body and culture mycelia of *Trametes cervina*, *T. ljubarski*, *T. velutina* and *T. orientalis* were investigated and characterized using gas chromatography-mass spectrometry (GC-MS). Forty peaks of compounds from a series of volatile hydrocarbons and hydrocarbon derivatives were detected on the GC-MS chromatogram of each isolates and about 30 compounds were identified based on the library database. In the hexane crude, 17 compounds were identified for *T. cervina*, 14 compounds for *T. ljubarski*, 13 compounds for *T. velutina* and 21 compounds for *T. orientalis*, while in the chloroform crude extract 12 compounds were identified for *T. cervina*, 17 compounds for *T. ljubarski*, 15 compounds from *T. velutina* and 12 compounds for *T. orientalis*. The most common compound detected in the extract of the *Trametes* spp. were cyclohexane, heptane, octane, nonane, decane, undecane, 1-Butenyl methyl ketone, 1-Ethyl-4-methylcyclohexane, 2-Hexyl-1-octanol, 3-Hydroxy-3-methylvaleric acid, 2-Chlorocyclohexanol, n-Nonadecanol, tetracontane, hexatriacontane, tetrapentacontane and hexatriacontane respectively based on the library database. Tetrapentacontane (TCC1) and hexatriacontane (TCC2) which represented 48.01% and 19.61% of the total area was the major compound in chloroform extract of *T. cervina*, whereas tetracontane (TLC1) which represented 34.48% of the total area and diethylene glycol dibenzoate (TVC1) represented 13.13% of the total area was the major compound in chloroform extract of *T. ljubarski* and *T. velutina* respectively. Among the identified compounds, hexatriacontane which identified from *T. cervina*, *T. ljubarski*, and *T. velutina* and hexadecanoic acid from *T. orientalis*, were previously reported to have antimicrobial activity. Thus the metabolite profiling of the *Trametes* spp. not only potential to be used for their identification but also allowed the exploration of potential biological active compound from the species.

Keywords: Secondary metabolites, hexane and chloroform crude, *Trametes* spp., Sarawak, GS-MS.

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