

Screening of Some Tropical Mushrooms for the Production of Antimicrobial Substances

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Mushrooms have been valued throughout the world as both food and medicine for thousands of years. There are 38,000 species of mushrooms. Southeast Asian countries are known to be rich sources of mushroom species in characteristic tropical rain forest. However, the investigation in Indonesian mushrooms is not much reported while the deforestation gives the impact on the distribution and the biodiversity of mushrooms. Some species are potential for therapeutic properties and they have not been thoroughly studied yet as the source of antimicrobial compounds. For this reason, *Lentinus* and *Ganoderma* were selected to be screened.

Fourth fruiting bodies of *Lentinus* spp. and seventh of *Ganoderma* spp. occurring on stumps and living trees have been collected and isolated from several locations in Indonesia. All isolates of *Lentinus* were grown on malt extract pepton liquid medium at 35°C for 30 days of incubation. The antimicrobial compounds were extracted with methanol from the culture filtrates and mycelia of *Lentinus* and from fruiting bodies of *Ganoderma*.

The culture filtrates of all isolates of *Lentinus* inhibited growth of *Rigidoporus lignosus*, reaching 53-81 % of inhibition and also the mycelial extracts of all *Lentinus* were active against *Bacillus subtilis* but the activity depended on the mode of culture, static or agitated condition. One isolate of *Lentinus* had no activity of mycelial extract which was obtained from agitated culture. The methanolic extract of all fruiting bodies of *Ganoderma* inhibited growth of *B. subtilis*. The bioautographic detection on silicagel thin-layer chromatograms exhibited several active substances in crude extract of filtrates or mycelia of *Lentinus* and also in fruiting bodies'extracts of *Ganoderma*.

On the basis of experimental evidence in this investigation, it appears that *Lentinus* and *Ganoderma* are a useful source for exploiting the antimicrobial compounds. Partial purification of these substances is in progress.