

Extraction of Bioactive Compounds from the Liquid Culture of an Australian *Ganoderma* P. Karst. Species Using a Range of Polarity Solvents

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Certain *Ganoderma* Karst. species have been shown to possess bioactive compounds that have nutraceutical properties, in that they can induce antibacterial, antiviral, and cancer-treating behavior in animals. This mushroom has also been identified as possessing immune system enhancing properties.

Three Australian *Ganoderma* species of this wood-decomposing fungus, isolated from northern Queensland, are being studied to determine the extent of their bioactive properties. Extracts were prepared from the isolates and their antibacterial activity was measured.

Mycelia were grown in liquid shake cultures of malt extract broth over a 30-day period. The resulting mycelial biomass was then dried and ground. The biomass was then subjected to con-

secutive Soxhlet extraction using a suite of organic solvents increasing in polarity. These organic solvents included hexane, dichloromethane, ethyl acetate, diethyl ether, and methanol. The crude residues resulting from the organic extraction processes were screened *in vitro* for their antibacterial activity using the hole-plate diffusion method. The minimal inhibitory concentrations were determined for extracts that were found to exhibit antibacterial activity. This was performed using the serial broth dilution method.

Gram-positive bacteria were found to be more sensitive to the extracts than the Gram-negative strains. The bioactive compounds within the individual extracts are currently being characterized.