

**PHYTOCHEMICAL ANALYSIS AND SCREENING OF THE
FUNGUS *CALOSTOMA* SP. FOUND IN TAWAU FOR
BIOACTIVE AND PHARMACOLOGICALLY ACTIVE
COMPOUNDS**

**FINAL REPORT
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RESEARCH ABSTRACT – Not More Than 200 Words (Abstract Penyelidikan – Tidak Melebihi 200 Patah perkataan)

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The purpose of this research is to analyze the potential of the polysaccharides extracted from *Calostoma* sp. mushroom, which is proven to have bioactive properties through bioassays. The morphology of the genus *Calostoma* was investigated by scanning electron microscope and light microscopy showed differences. The mushroom species was confirmed as *Calostoma insignis*. The antimicrobial tests of crude polysaccharide extracts of *C. insignis* on three bacterial pathogens were done by disk diffusion and agar overlay techniques. The sensitivity of test pathogens was in decreasing order: *P. aeruginosa* > *S. aureus* > *E. coli*. The antioxidant assays shows promising results in Ascorbic acid Equivalent Antioxidant Capacity assay ($IC_{50} = 184 \mu\text{g/mL}$). The Trolox Equivalent Antioxidant Capacity assay showed values of 1 mg/mL and 2 mg/mL and the Ferric Reducing Ability of Plasma assay showed values of 87 mmol/g and 297 mmol/g for ethanolic and aqueous extracts respectively. The aqueous extract had a higher potency antioxidant activity than ethanolic extract. The ethanolic extract inhibited the growth of some bacteria proves that *C. insignis* may be tantamount to treat strains of bacteria. These findings are of significance to use the fruit-bodies for antioxidant and antimicrobial activities to reduce the demands on endangered species.

Date:
Tarikh

Project Leader's Signature:
Tandatangan Ketua Projek

COMMENTS, IF ANY/ ENDORSEMENT BY RESEARCH MANAGEMENT CENTER (RMC)
(Komen, sekiranya ada/Pengesahan oleh Pusat Pengurusan Penyelidikan)

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Name:
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Date:
Tarikh:



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