POTENTIAL EFFECT OF GELAM HONEY AND ITS SYNERGISTIC ACTION WITH GENTAMICIN AGAINST HUMAN PATHOGENIC BACTERIA

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In medical field, combination therapy is another alternative which commonly employed for lesser toxicity yet beneficial to patients especially to counteract antibiotic-resistant pathogens. In this study, a trial set was run with three test samples including 50% (v/v) honey, 4 μg/ml of gentamicin, and the combination of 50% (v/v) honey plus 4 μg/ml of gentamicin. Standard plate count and agar well-diffusion methods were utilized to assess the antibacterial activity. The outcomes revealed that the combination of Gelam honey and gentamicin showed enhancement in inhibition of both E. coli and S. aureus strains with superior killing rates and larger zones of inhibition as compared to antibiotic alone, suggesting the presence of synergistic antibacterial interaction.

INHIBITORY ACTIVITY OF BAKUCHIOL, HYDROXYCHAVICOL AND PSEUDOLARIC ACID B AGAINST CANDIDA SPECIES

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Candida species is an opportunistic fungal pathogen which maybe dimorphic and could display hyphae. This characteristic provides opportunity for the attachment and penetration of Candida into host tissues. Currently, there is increased effort in finding new compounds from natural resources for antifungal development. Bakuchiol, hydroxychavicol and pseudolaric acid B (PAB) are compounds of Pueraria corylifolia Linn., Piper betle Linn. and Pseudolarix kaempferi, respectively. Our study aimed to investigate the inhibitory activity of the compounds against C. albicans, C. dubliniensis, C. glabrata, C. krusei, C. lusitanea, C. parapsilosis and C. tropicalis. Analysis was carried out using broth microdilution and germ tube formation assay. It was found that all respective compounds have antifungal activity against the respective Candida species with minimal inhibitory concentrations to be 200–25 μg/ml (bakuchiol), 500-250 μg/ml (hydroxychavicol) and 200-6.25 μg/ml (PAB). The compounds exhibited varying degrees of strength in hyphal growth inhibition of C. albicans. Half maximal inhibitory concentration (IC50) was determined at 643 μg/ml (bakuchiol), 152 μg/ml (hydroxychavicol) and 503 μg/ml (PAB). Comparative ratio of MIC to IC50 has resulted in determination of relative potency of the compounds in growth inhibition. Hydroxychavicol was determined to have potency against hyphae but bakuchiol and PAB have potency against budding yeast. Thus, these compounds would be promising candidates for antifungal development and further studies on their biological properties are warranted.

ANTI-PROTEIN DENATURATION AND ANTIMICROBIAL STUDY OF MEDICINAL PLANT, EPIPRENUM PINNATUM (L) ENGL.

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In the community, plants are believed to be a remedy for diseases as plants’ decoction is often consumed by people. Instead of synthetic drugs, researchers have turn their attention in looking for bioactive compounds present in plants consumed by the public. In this study, the plant in interest was Epipremnum pinnatum (L) Engl. as it was widely consumed in the community due to its medicinal effects. This study aimed to evaluate the antimicrobial and anti-protein denaturation activity of the leaf extract of E. pinnatum. Sequential extraction (SSE)
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