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The effect of eurycoma longifolia jack (tongkat ali) root extract on salivary s. mutans, lactobacillus and candida albicans isolated from high-risk caries adult patients

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Abstract

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Abstract

Introduction: The roots of *E. longifolia* jack (E.L.) or Tongkat Ali have been used in traditional medicine as well as supplements and food additives. Many chemical compounds have been detected in extracts of its roots which are believed to be responsible for its medicinal properties. In this study, our objectives were to study the effects of EL root extracts on the growth of *Streptococcus Mutans*, *Lactobacillus* and *Candida Albicans* isolated from saliva of adult patients with high caries risk. Materials and Methods: The ethanolic extract of the root of this plant was tested against saliva isolated *Streptococcus Mutans*, *Lactobacillus* and *Candida Albicans* via disc diffusion assay at a concentration of 200mg/mL. The minimum inhibitory concentration was carried out by the standard broth microdilution method. Cell viability of test microorganisms against different concentration of the extract and inhibition zones were calculated. Results: Disk diffusion assay showed positive zones of inhibition for all test microorganisms with *S. mutans*, *Lactobacillus* and *C. albicans* exhibiting zones of inhibition of 8.3 ± 0.7 mm, 12.4 ± 2.4 mm and 21.4 ± 2.7 mm respectively. For minimum inhibitory concentration, the test microorganisms were tested at concentration of 250mg/ mL, 125mg/mL, 62.5mg/mL, 31.3mg/mL and 0mg/mL. The minimum inhibitory concentration showed that MIC of *S. mutans* was at 62.5mg/mL, *Lactobacillus* at 125mg/mL and *C. albicans* at 31.3mg/mL. Lastly, the cell viability results supported the MIC determined prior. Conclusion: Ethanol-based *E. longifolia* Jack root extract has an antimicrobial effect on the following microorganisms isolated from the saliva of

high-risk caries adult patients: *S. mutans*, *Lactobacillus* and *C. albicans*. © 2021 EManuscript Technologies. All

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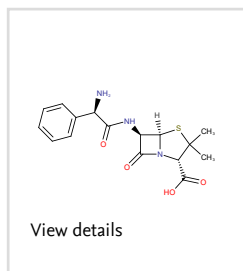
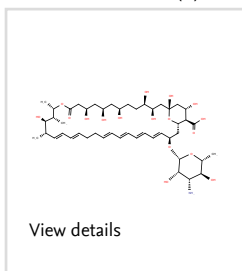
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