

## Anticariogenic properties of *Solanum ferox* L. ethanol extract

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*Solanum ferox* L. is a plant species which belongs to the Solanaceae family and the genus Solanum. The Solanum genus was found to exhibit anticariogenic activity and was traditionally used to treat oral diseases. However there are no scientific studies done specifically for *Solanum ferox* L. Hence the aim of the study is to determine the anticariogenic properties of flesh and leaf of ethanol extract of *Solanum ferox* L. Alkaloids, flavonoids and tannins were detected in the leaf ethanol extract via preliminary phytochemical screening. The presence of these phytochemicals may contribute to the anticariogenic activity. Treatment with different concentrations of flesh and leaf of ethanol extract were used against *Streptococcus pyogenes* and *Staphylococcus aureus* via the

method of agar well diffusion to indicate zones of inhibition. The antibiofilm activity of the flesh and leaf ethanol extracts was tested. The flesh and leaf ethanol extracts possess significant ( $p < 0.05$ ) dose-dependent on antimicrobial activity and positive antibiofilm activity against respective pathogens. Flesh ethanol extract has stronger anticariogenic activity compared to leaf ethanol extract against *Staphylococcus aureus*. *Streptococcus pyogenes* exhibited higher susceptibility as compared to *Staphylococcus aureus*. In conclusion, it has been shown that the ethanol extract of *Solanum ferox* L. exhibit anticariogenic properties against *Streptococcus pyogenes* and *Staphylococcus aureus*.

## Therapeutic role of honey in oral health and its anti cancer activity

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For centuries, honey has been widely used to treat many types of ailments due to its medicinal and health promoting properties. It contains several types of phytochemicals that contribute to its many therapeutic properties such as; antimicrobial agent, natural booster of the immune system and its capability to avoid cancer development. The aim of this study was to evaluate the chemo preventive activity of the Malaysian jungle Tualang Honey (TH) following oral carcinogenesis in an animal model induced by 4-nitroquinoline-1-oxide (4NQO). A total of 28 male Sprague-Dawley (SD) rats were randomized into four groups (n=7 per group) as follows: Group 1 (non-treated group), Group 2 received 4NQO during 8 weeks in drinking water (control), Group 3 and 4 received 4NQO for 8 weeks in drinking water and treated

with TH 1000 mg/kg and 2000 mg/kg by oral gavage for 10 weeks. All rats from all experiments were sacrificed after 22<sup>nd</sup> week, and the incidence of oral neoplasms and histopathological changes were microscopically evaluated. In the 4NQO (induced cancer) group, the incidence of OSCC (oral squamous cell carcinoma) was 85.7%, while in rats treated with TH at 1000 mg/kg and 2000 mg/kg, the incidence of OSCC was statistically decreased at 28.6% and 14.6% respectively. Results of the present study indicate that Tualang honey may be effective in the chemoprevention of human oral cancer and further studies would be required to further elucidate their mechanism of action in the prevention of cancer.