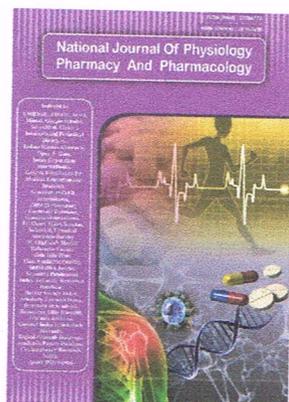


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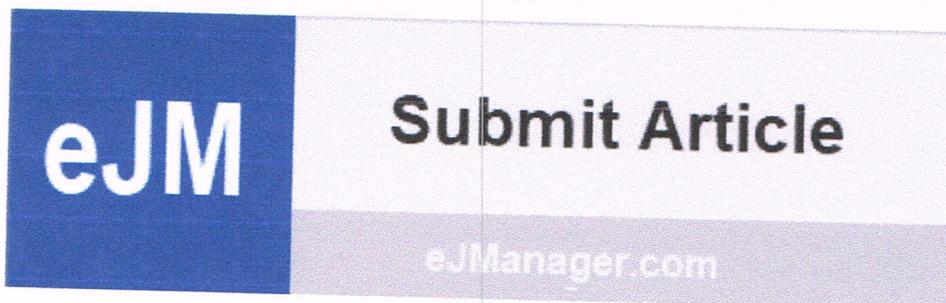
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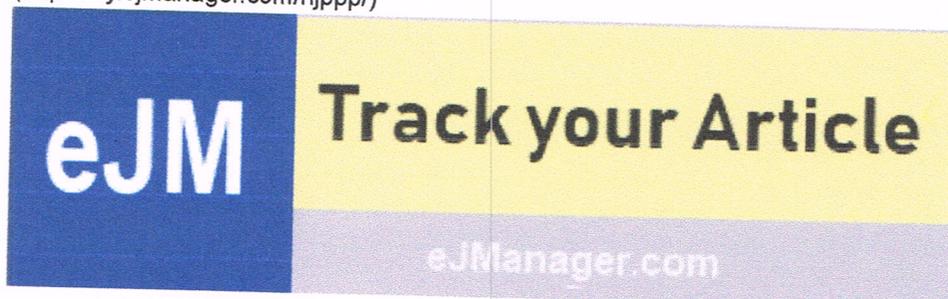
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RESEARCH ARTICLE

Anticaries activity of ethanolic extract from ant-nest plant (*Myrmecodia Pendens* Merr. & L.M Perry) against hyaluronic acid resistant *Streptococcus mutans*

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Received: January 02, 2018; Accepted: January 26, 2018

ABSTRACT

Background: *Streptococcus mutans* is known as primary microorganism in the formation of dental plaque and tooth decay. **Aims and Objectives:** To determine the antibacterial activity of ant-nest plant ethanol extract to inhibit *S. mutans* clinical isolates growth *in vitro*. **Materials and Methods:** The ethanol extracts obtained from the ant-nest plant were studied for antibacterial activity against cariogenic *S. mutans* obtained from patients with clinically identified carious lesions, using the agar diffusion method. Chlorhexidine gluconate was using as a comparative drug. The simplisia of ant-nest plant was extracted using a maceration method. The phytochemical screening was taken using standard methods. The minimum inhibitory concentration (MIC) test was performed by a macrodilution method and following by subculturing the overnight result onto the surface of agar media. **Results:** Phytochemical screening of ant-nest plant ethanol extract revealed the presence of polyphenols, flavonoids, tannins, and saponins. The extract showed intensive activity and totally inhibited the growth of *S. mutans* clinical isolates at 1.25% w/v. In comparison, the chlorhexidine gluconate, essential oil of plants and povidone-iodine in a ranged tested concentration also had given inhibition effect to all hyaluronic acid resistant *S. mutans* isolates. **Conclusion:** It can be reasoned that the ethanolic extract of ant-nest plant gave potent and direct antibacterial effect on *S. mutans*.

KEY WORDS: Ant Nest; Antibacterial; *Streptococcus mutans*; Caries; Hyaluronic Acid

INTRODUCTION

Biofilms can be defined as oral microbial-plaque communities and attached to a surface.^[1,2] The microorganisms undergo transition from planktonic form two cells that attached to the host surface.^[2] These bacteria communicate through physical interactions called segregation and coadhesion, as comfortably as other physiological and metabolic

interactions.^[3] Oral streptococci are present in great numbers in dental plaque, and several types interact with the enamel salivary pellicle to form a biofilm on tooth surfaces.^[1,3,4]

Streptococcus mutans is the primary bacteria of oral streptococci that plays a significant part in the formation of dental plaque and caries.^[3,5] Dental caries affects 60–90% of children in industrialized countries and approximately 10–15% of adults are affected by the severe periodontal disease. These plaques-mediated diseases lead to premature dental exfoliation and have a significant impact on the quality of life.^[6-8] Periodontal disease has been also implicated with systemic chronic diseases such as cardiovascular disease.^[9] An important element in both caries and periodontal disease is the oral microflora. As the primary etiological agent of

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