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RESEARCH ARTICLE

Antibacterial action of *Pedilanthus tithymaloides* leaves extract and FTIR Phytochemical Finger printing

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ABSTRACT:

Medicinal plants are used to produce new antimicrobial drugs due to increased bacterial resistance of antibiotics. The plant *Pedilanthus tithymaloides* said to possesses the wide range of medicinal properties which were confirmed through previous studies. The present study was to determine its antimicrobial activity using its leaves extract and also analysing whether their phytochemical constituents are responsible for its anti-microbial activities. *Pedilanthus tithymaloides* leaves extract was obtained and tested for antimicrobial activities and analysed for the presence of chemical constituents by preliminary phytochemical analysis and by FTIR analysis. The antimicrobial susceptibility studies were conducted against gram (-) bacteria such as *Escherichia coli*, *Pseudomonas aeruginosa* and gram (+) bacteria such as *Staphylococcus aureus*. The current result supports the medicinal use of the leaf which acts as an antimicrobial agent. However further studies are needed to isolate the active compound from the leaf and to study the antimicrobial activity of that active compound.

KEYWORDS: Anti-bacterial activity, FTIR, Infectious diseases, Phytochemicals, *Pedilanthus tithymaloides.*

INTRODUCTION:

Nature gifted plants and herbs are used in traditional medicine to cure many serious diseases even from the ancient period. Around the world, those herbs and plants are still used to get relief from dangerous illness as the herbs are safe and natural source of drug[1]. Based on the phytochemical constituents, vast number of herbs are proved to be effective. These plant natural products are now exclusively used in drug developmental process of pharmaceuticals. The use of herbal medicines is steadily growing with approximately 40 per cent of population reporting use of herb to treat medical illnesses within the past year. Public, academic and government interest in traditional medicines is growing exponentially due to the increased incidence of the adverse drug reactions and economic burden of the modern system of medicine[2].

Plants in its natural form of medicine help people to stay healthy in the face of chronic stress and pollution, and to treat illness with medicines that work in count with the body's own defence. The different parts of plants contain components with various pharmacological properties and some are nutritive in function[3].

Infectious diseases are one of the major high proportions of health problems all around the world. Symptoms associated with bacterial infections includes fever, chills, headache, nausea, vomiting and even organ failures that affects the patient's life severely. Pathogenic bacteria invading the body through various routes emit toxins which damage cells and tissues that consequently results in the such symptoms of bacterial disease[4]. Microbial resistance against antibiotics has created immense clinical problem in the treatment of infectious diseases. As a result, the use of antibiotics in treating the diseases may also produce adverse toxicity in humans. One way to prevent antibiotic resistance is to utilize new compounds that are not based on existing synthetic antimicrobial agents[5]. In addition to problem of resistance, environmental degradation and pollution associated with irrational use of orthodox medicines are

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