



Phytochemical Study and Antimicrobial Analysis of *Euphorbia milii* Extract

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Abstract: Antimicrobial activity of *Euphorbia milii* extract and its subfraction against Gram-Negative, Gram –Positive bacteria and unicellular Yeast were evaluated with the help of Agar disc diffusion technique. Gram-Positive organism *Staphylococcus aureus*, Gram negative organism *Escherichia coli* (*E.coli*) were grown on Hexane, ethyl acetate, acetone, Methanol and water extract of *Euphorbia milii* (*Euphorbiaceae*). Hexane, Acetone and Methanol extract in the concentration of 5 µg/mL shows considerable inhibition zone on *Staphylococcus aureus* as compared to other extracts. The Hexane, Acetone and Methanol extract in the concentration of 5µg/mL shows considerable inhibition zone on *Escherichia coli* (*E. coli*) as compared to Ethyl Acetate and

water extract which was compared with the inhibition zone produced by standard Amikacin Sulphate 1µg/mL.

Phytochemical investigation of *Euphorbia milii* revealed the existence of sub-ordinate metabolites like Alkaloids, Phenols, Glycosides, Saponins, Terpenoids, Tannins and Steroids. It contributes to its antimicrobial properties these compounds make the plant a potential source of natural antimicrobial agent that could be used in the development of new treatments for infections.

Keywords: *Euphorbia milii*, *Euphorbiaceae*, Antimicrobial activity, Flavanoid and Phenol.

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Introduction:

The family *Euphorbiaceae* consist of 2000 species (Davis et.al.1988). The genus *Euphorbia* is the largest genus of medicinal plants and widely cultivated in several parts of India China and Pakistan. People uses *Euphorbia milii* for the ornamental purposes. However in Nepal the latex is used to treat sprains (arsule et.al., 2017). Various species of *Euphorbia* are traditionally being used as a folk medicine for the treatment of different diseases due to its high therapeutic potential such as warts, eradication of intestinal parasites and eczema (Bani et al., 2007). With no harmful side effects it's phytochemicals show protection and healing deeds to the body.

Most challenging factor during the treatment of fungal and bacterial infection is there antimicrobial resistance potential due to which it led to the upsurge of novel