

पेटेंट कार्यालय  
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पेटेंट कार्यालय का एक प्रकाशन  
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(54) Title of the invention : ANTI-MICROBIAL PROPERTIES OF LEAF OF LEUCAENA LEUCOCEPHALA

(51) International classification	:A61P0031040000, A61K0009000000, B09B0003000000, A61K0036000000, A61P0031000000	(71)Name of Applicant : <b>1)Dr. Asheesh Kumar Gupta</b> Address of Applicant :Professor, School of Pharmaceutical Sciences, IFTM University, Moradabad, Uttar Pradesh, India 244102 Uttar Pradesh India <b>2)Dr. Prem Prakash Saini</b> <b>3)Mr Dinesh Kumar</b>
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## (57) Abstract :

ABSTRACT The present invention relates to a pharmaceutical composition comprising ethanolic extract of *Leucaena leucocephala* leaves demonstrating potent antibacterial properties against both Gram-positive and Gram-negative pathogenic bacteria. The invention encompasses a systematic method for extracting bioactive phytochemical compounds from *Leucaena leucocephala* leaves using sequential solvent extraction techniques that preserve natural antimicrobial constituents including phenolic compounds and flavonoids. The ethanolic extract exhibits superior capacity to inhibit growth of clinically relevant bacterial pathogens including *Staphylococcus aureus*, *Streptococcus pneumoniae*, *Salmonella typhi*, and *Escherichia coli* through multiple mechanisms of action. The preparation involves collecting fresh *Leucaena leucocephala* leaves, shade drying, pulverizing into coarse powder, and sequential extraction using petroleum ether for defatting followed by chloroform, ethyl acetate, and ethanol extraction through Soxhlet apparatus. The resultant ethanolic extract demonstrates remarkable antibacterial activity with zones of inhibition ranging from 11.23 to 18.54 millimeters against tested organisms, superior to chloroform and ethyl acetate extracts. The ethanolic extract contains highest total phenolic content of 189.34 micrograms gallic acid equivalents per milligram and total flavonoid content of 46.50 micrograms quercetin equivalents per milligram, correlating directly with observed antimicrobial efficacy. This natural antibacterial formulation has applications in pharmaceutical compositions for treating bacterial infections and topical preparations for wound healing.

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