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(54) Title of the invention : FREE RADICAL SCAVENGING PROPERTIES OF LEAF OF LEUCAENA LEUCOCEPHALA

(51) International classification	:A23L0033105000, A61K0036185000, A61K0031050000, A61P0009120000, A61K0031352000	(71)Name of Applicant : 1)Dr. Asheesh Kumar Gupta Address of Applicant :Professor, School of Pharmaceutical Sciences, IFTM University, Moradabad, Uttar Pradesh, India 244102 Uttar Pradesh India 2)Dr. Prem Prakash Saini 3)Mr Dinesh Kumar
(31) Priority Document No	:NA	(72)Name of Inventor : 1)Dr. Asheesh Kumar Gupta 2)Dr. Prem Prakash Saini 3)Mr Dinesh Kumar
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(57) Abstract :

ABSTRACT The present invention relates to a pharmaceutical composition comprising ethanolic extract of *Leucaena leucocephala* leaves demonstrating exceptional free radical scavenging and antioxidant properties. The invention encompasses a systematic method for extracting bioactive phytochemical compounds from *Leucaena leucocephala* leaves using sequential solvent extraction techniques that preserve natural antioxidant constituents including phenolic compounds and flavonoids. The ethanolic extract exhibits superior capacity to neutralize reactive oxygen species including DPPH radicals, hydrogen peroxide, and nitric oxide in biological systems. 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 antioxidant activity with IC50 values of 75.68 micrograms per milliliter for DPPH, 55.59 micrograms per milliliter for hydrogen peroxide, and 67.53 micrograms per milliliter for nitric oxide scavenging, superior to chloroform and ethyl acetate extracts. The ethanolic extract contains highest total phenolic content of 189.34 plus or minus 0.982 micrograms gallic acid equivalents per milligram and total flavonoid content of 46.50 plus or minus 0.078 micrograms quercetin equivalents per milligram. This natural antioxidant formulation has applications in pharmaceutical compositions for preventing oxidative stress-related diseases and nutraceutical supplements for health promotion.

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