

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202511092871 A

(19) INDIA

(22) Date of filing of Application :27/09/2025

(43) Publication Date : 07/11/2025

(54) Title of the invention : ANTIMICROBIAL COMPOSITIONS FROM TERMINALIA SPECIES AND METHOD FOR COMBATING MULTIDRUG RESISTANT CELLULOSIMICROBIUM CELLULANS

(51) International classification	:A61K0036185000, A61P0031040000, C12N0001200000, C12Q0001180000, A61K0038140000	(71) <b>Name of Applicant :</b> <b>1)Career Point University Hamirpur, Himachal Pradesh</b> Address of Applicant :MDR 35, Kharwarian, Tikker, Bhoranj, Hamirpur, Himachal Pradesh 176041, India Hamirpur Himachal Pradesh India
(31) Priority Document No	:NA	(72) <b>Name of Inventor :</b>
(32) Priority Date	:NA	<b>1)Dr. Shikha kumari</b>
(33) Name of priority country	:NA	<b>2)Jyoti Kumari</b>
(86) International Application No	:	<b>3)Niharika Sharma</b>
Filing Date	:01/01/1900	<b>4)Anju Bala</b>
(87) International Publication No	: NA	<b>5)Isha sharma</b>
(61) Patent of Addition to Application Number	:NA	
Filing Date	:NA	
(62) Divisional to Application Number	:NA	
Filing Date	:NA	

(57) Abstract :

The present invention relates to novel antimicrobial compositions derived from Terminalia species for combating multidrug-resistant bacteria, particularly Cellulosimicrobium cellulans. The invention provides a method for isolating MDR bacteria from hospital soil samples using serial dilution agar plate technique followed by antibiotic susceptibility testing and molecular identification through 16S rDNA sequencing. The isolated Cellulosimicrobium cellulans strain demonstrated resistance to multiple antibiotics including Amoxyclave, Ampicillin, Oxacillin, Tetracycline, and Vancomycin. Ethanolic leafextracts of Terminalia bellerica and Terminalia chebula were evaluated against the MDR isolate using agar well diffusion method. Terminalia bellerica extract exhibited maximum antimicrobial activity with zone of inhibition of  $22.83 \pm 0.706$  mm, while Terminalia chebula showed  $18.5 \pm 0.462$  mm. The plant extracts offer promising natural alternatives to conventional antibiotics for treating nosocomial infections caused by MDR bacteria, addressing the critical global challenge of antibiotic resistance through sustainable, eco-friendly therapeutic solutions.

No. of Pages : 14 No. of Claims : 10