

## Development of herbal based bioprotective agents against microorganisms of biological importance

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Drug resistance has mushroomed up after advent of every major class of antimicrobial drugs, varying in time from as short as 1 year (penicillin) to >10 years. Organisms associated with nosocomial and community acquired infections are also becoming drug resistant due to the over utilization of antibiotics, consequently leading to high morbidity, mortality and increased health costs. Omnipresence of emerging antibiotic resistant bacteria is a new tool for encompassing the emerging threat of bioterrorism. Beta lactam antibiotics are considered to be one of the most important therapeutic aids, but natural selection and mutation have induced the bacteria to produce beta lactamase enzymes so as to inactivate the beta lactam antibiotics. One such example of a beta lactamase producing bacteria is New Delhi Metallo beta lactamase (NDM-1) producing *Escherichia coli* and *Klebsiella pneumoniae*, which has recently originated in 2009. A conservative estimate of the number of flowering plants occurring on the planet is about 2,50,000. Of these, only about 15,000 have been screened for biological activity and a reported 37,500 have been evaluated phytochemically. Consistent findings should be carried out to discover a probable abundance of medicinal extracts in these plants. The present study aims to utilize *in silico* herbal bioprospection modeling, literature based parameter selection, priority indexing using random search model, scoring and decision matrix based analysis followed by optimization and validation. 55 plants were identified based on ethno-medicinal survey, out of which 5 potential candidates were screened using *in silico* herbal bioprospection approach, now available for *in vitro* validation.

### Biography

Pallavi Thakur has completed her master's in Biotechnology from Guru Jambheshwar University of Science and Technology, Hisar, Haryana and currently pursuing Ph.D. in Life Sciences from Institute of Nuclear Medicine and Allied Sciences, Defence Research and Development Organisation. She has qualified CSIR JRF, DBT JRF, ICMR JRF and GATE (XL). She has been working in the field of Microbiology since 2003 and now working towards demystifying multi-drug resistance using herbal based therapeutics. She is an active member of the Indian Science Congress Association and also serving as a member of repute in the Association of Microbiologists in India.

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