CONCLUSION
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The present study creates an interest in the exploration of lichens for novel antimicrobials. The Indian floral vegetation and the fauna biodiversity are placed among the world’s top hotspots. The lichen vegetation is very rich within two regions of the country; the Western Ghats and the Eastern Himalayas covering almost half of the documented vegetation.

Lichens can be defined as composite organism consisting of two distinct and dissimilar components- the mycobiont and the phycobionts. This has given them the potential of producing some of the unique secondary metabolites such as depsides, depsidones, and polyketides, which have been explored for their biological activities in wide areas such as antimicrobials, antioxidant, lipid peroxidation inhibition, anti-diabetic, hepato-protectant etc. The non toxic nature of herbal medicines complements conventional treatment and excels over the synthetic drugs such as Streptomycin, Fluconazole etc. which are effective but come with considerable side-effects and have high disease reoccurrence rate.

The wide range of antimicrobial spectrum of tested lichens against the bacterial pathogens as well as fungal pathogens; strengthens the findings and present a pathway for its application in the pharmaceutical industries. **The antimicrobial potential of the lichens were in order:** \textit{Usnea longissima} Ach>\textit{Roccella montagnei} Bel >\textit{Cetrelia braunsiana} (Mull Arg) Culb. and Culb>\textit{Parmotrema reticulatum} (Taylor) M. Choisy>\textit{Cladonia rangiferina} (L) Weber against the bacterial pathogens whereas \textit{Roccella montagnei} Bel > \textit{Cetrelia braunsiana} (Mull Arg) Culb. and Culb>\textit{Parmotrema reticulatum} (Taylor) M. Choisy>\textit{Usnea longissima}>\textit{Cladonia rangiferina} (L) Weber against the fungal pathogens. These potential lichens were also tested for their antioxidant
potential so that value addition can be done if study leads towards the development of formulation. The lichen *Roccella montagnei* Bel was found with excellent antimicrobial potential and also the successful culture studies were performed. The lichen has erythrin and lecanoric acid as major lichen acid. Moreover, the study can be further progressed for production of novel secondary metabolites from the lichen culture and their phytochemical investigation can be performed. Another lichen *Cetrelia braunsiana* (Mull Arg) Culb. and Culb with profuse growth was found to exhibit excellent killing action against all the tested bacteria and fungus. Thus has enormous scope for development of herbal formulation after successful multicentral toxicological trials on cell lines. Besides, antimicrobial activity in fruticose and foliose lichens; *Usnea longissima, Roccella montagnei* Bel, *Cetrelia braunsiana* (Mull Arg) Culb. and Culb, *Cladonia rangiferina* (L) Weber and *Parmotrema reticulatum* (Taylor) M. Choisy will serve as a value addition. Ultimately, focused attention will be drawn towards production, isolation and characterization of novel compounds from the aposymbiotic and lichenized cultures of the lichens; which on one hand will be helpful in conservation of lichen biodiversity in nature and on the other hand make the product commercially viable. Five species of Lichen were studied morphologically and biochemically in present study. Secondary metabolites and extracts produced by the fungi associated with the lichen thalli are novel biological source of antimicrobial compounds and are of pharmaceu tical importance but in vitro culture studies of lichen forming fungi must be established before commercialization of lichen based products for the conservation of lichens in nature. Therefore, lichens bioprospection must be limited to the identification of active molecule(s) and gene responsible for their production.