Chapter 6
Conclusion

“Discovery consists of looking at the same thing as everyone else and thinking something different”
• All the selected lichens were inhibiting growth of bacteria, but some lichens were showing comparatively better activity. On the basis of zone of inhibition and MIC values, it can be said that the present study provides data for supporting the use of *U. longissima*, *E. cirrhatum*, *C. braunsiana*, *P. nilgherrense*, *U. ghattensis* and *R. montagnei* extracts as natural antimicrobial agents.

• Different lichen substances moderately and in some cases significantly inhibited the tested microorganisms, these microorganisms are human pathogens. It can be useful in treatment of numerous diseases caused by these microorganisms. Since there is a huge problem in the treatment of the infectious diseases, because the microorganisms have developed the resistance to numerous antibiotics, so the use of the active lichen extracts and lichen components may have an important role in antimicrobial therapy.

• Further investigations on the antibacterial activity as well as economical and fast isolation of the metabolites from the lichens are needed. Consequently, the antibacterial effect of lichens tested can be explained with new studies by using different solvents for extraction and the effect on other bacteria also. Future research will search for new lichen metabolites, investigate in greater detail the action of lichen substances and synthesize new and possibly more active derivatives for their application as potential antimicrobial agents.
In this research, screening of few lichens on *Poliovirus* (*PVI*) was carried out and the tested lichens prevented CPE for 4 days, but the screening was only preliminary. In future, studies on *Poliovirus* as well as on other viruses can be done. Taken together, these studies demonstrate that lichens might represent a unique repertoire of novel antiviral phytomedicinal agents. However, an empirical conclusion to this effect can only be substantiated after further screening of these lichens against several other enveloped viruses and after detailed molecular elucidation studies. In the current search for novel antiviral agents against current and emerging viral diseases, it might indeed be worthwhile to conduct pilot screening studies of diverse lichen species that are scattered around the globe.

Lichen compounds have antibacterial properties and sound scientific research is needed in order to utilize their role as potential antibacterial, antiviral, antifungal, antioxidant, anticancer agents, so as to provide some legitimacy to a potential medical goldmine.