

Isolation of bioactive secondary metabolites from the endolichenic fungi, *Neosartorya* sp. inhabiting the lichen *Parmotrema* sp. in Sri Lanka

M.A.T.P. Manthirathna^{1,2}, R.Kandiah¹, D.S. Gunasekara³, P.A.Paranagama

Natural products are a potential source of novel pharmaceutical agents. Therefore, isolation and identification of bioactive compounds from organisms adapted to various biotopes and unraveling their bioactivities in search for new pharmacophores has a mounting interest. Fungi are known to be prominent producers of useful metabolites. Endolichenic fungi (ELF) that occur asymptotically within the lichen thalli are one of the ecological groups of fungi. ELF in Sri Lanka remain almost unexplored as a source of useful bioactive compounds. The objective of this study is to isolate bioactive secondary metabolites from ELF *Neosartorya* sp. isolated from *Parmotrema* sp. that occur in Hakgala Botanical Garden. ELF *Neosartorya* sp. was cultivated on 48 PDA plates and incubated at room temperature. Secondary metabolites were extracted into ethyl acetate from 9 days old cultures. Antibacterial activity of the crude extract was evaluated against *Bacillus subtilis* (BS) and *Staphylococcus aureus* (SA) using agar well diffusion method. Standard antibiotic Azithromycin was used as the positive control and Dimethyl sulfoxide as the negative control. Since the crude extract showed antibacterial activity against both BS and SA, it was partitioned with hexane, chloroform (CHCl₃) and aqueous methanol. All three fractions showed activity against SA, with the CHCl₃ fraction having higher activity compared to the other two fractions. Chloroform and methanol fractions showed significant activity against BS, while CHCl₃ fraction showed activity comparable with Azithromycin. Chloroform fraction of *Neosartorya* sp. was further fractionated using bio-assay guided fractionation (silica gel column chromatography). Pure compounds were isolated using preparative TLC. One major pure compound was isolated from CHCl₃ fraction and the characterization still in progress.

Key words: antibacterial activity, endolichenic fungi, Neosartorya sp., bioactivity

1College of Chemical Sciences, Institute of Chemistry Ceylon.

2Department of Chemistry, University of Kelaniya, Sri Lanka. priyani@kln.ac.lk

3Sri Lanka Institute of NanoTechnology.