



Phytochemical Screening of *Parmotrema planatilobatum* (Hale) Hale. for Its Dye Yielding Potential

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Received: 14 Mar 2023

Revised: 20 May 2023

Accepted: 04 July 2023

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ABSTRACT

Lichens are symbionts that produce distinct, secondary chemicals with significant pharmacological potential. Many phytochemicals are revealed to be species-specific, and the chemical nature of lichen species differs. The present study investigated the major bioactive constituents of the lichen *Parmotrema planatilobatum* in five different solvents by increasing polarity (hexane, chloroform, ethyl acetate, acetone, and methanol). The qualitative phytochemical screening of crude extracts revealed the presence of alkaloids, phenols, proteins, amino acids, reducing sugars, tannins, steroids, terpenoids, flavonoids, and quinones. Lichens are the source of colorant due to their distinct metabolic components. Moreover, the dye yielding potential of *P. planatilobatum* was assessed using three methods; they are ammonia fermentation method (AFM), the cow urine method (CUM), and the DMSO extraction method (DEM). The different colors derived using the mentioned approaches were documented. The dye extraction results were buffy brown in the AFM method, isabella in the CUM method, and ivory yellow in the DEM method. These compounds have the ability to produce dyes as well as having exceptionally intense pharmacological effects.

Keywords: *Parmotrema*, phytochemical and dye extraction.

INTRODUCTION

Lichens are epiphytic, intelligent living form that develop from the symbiotic union of a specialised fungal partner and an algal partner (green algae or cyanobacteria) [1]. The lichens are classified by three distinct types, such as crustose, foliose and fruticose. Moreover, they thrive in a wide variety of habitats including tree trunks, bark, wood, leaves, rocks, moss and soil. Also, it can survive in harsh climatic conditions around the world such as adverse temperatures, drought, salinity, pollution, and unstable nitrified conditions [2].

