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PHYTOCHEMICAL INVESTIGATION AND BIOLOGICAL ACTIVITIES OF GMELINA ARBOREA

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ABSTRACT

To initiate the work 5 medicinal plants were identified and screened for antimicrobial activities against test organisms and antioxidant potential. Out of these plants Gmelina arbor Traditional knowledge of medicinal plants has always guided the search for new cures. simple medicinal preparations often mediate beneficial responses due to their active chemical constituents ea showed potential antimicrobial as well as antioxidant potential. Fungal pathogen namely Rhizoctonia solani causing black scurf of potato and Escherichia coli (MTCC Number: 68) procured from Institute of Microbial Technology, Chandigarh were taken for present study. G. arborea was selected for fractionation, isolation and purification of bioactive compound(s). the investigations have been undertaken to standardize the procedure for macro-isolation of active principles from Gmelina arborea having antimicrobial and antioxidant activities. These investigations may be helpful in development of herbal formulations. . Isn present work some medicinal plant species namely Prunella vulgaris, Emblica officinalis, Withania somnifera, Berginia lingulata, collected from Northern India have been screened for their antimicrobial and antioxidant activity. Bark extract of Gmelina arborea shows potential antimicrobial activity against both the test organisms (Rhizoctonia solani and E. coli) taken for present study. All the extracts of Gmelina arborea showed potential antioxidant activity. Encouraged by these results and keeping in view the possibility of presence of already reported chemical substances[23], an attempt has been made for fractionation and isolation of the extract (extraction by hexane, chloroform and methanol) from bark of Gmelina arborea as well as for getting them separated into various components, purification of components and subjecting them for various methods of identification. The chemical constituents separated from the bark extract of Gmelina arborea are expected to possess potential antimicrobial and/or antioxidant activity.

Besides the reported chemical constituents other compounds are also expected to be present in these extracts. The isolation, purification and identification is important from the view point of developing herbal formulations for management of micro-organisms taken for the present study as well as developing antioxidant diet supplements. Therefore the separated compounds will be subjected to the studies related to their specific antimicrobial properties.