EVALUATION OF ANTIBACTERIAL EFFICACY OF DIGERA MURICATA PLANT USING MICROBROTH DILUTION AND AUTOBIOGRAPHY ASSAYS

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ABSTRACT

INTRODUCTION

Bacterial infections treatment always remained as a challenge due to development of resistance in bacterial species.

OBJECTIVE

Medicinal plants contain a wide range of diverse molecules that provide a platform to search novel antibacterial agents.

MATERIAL & METHODS

Digera Muricata plant material was sequentially extracted with five different solvents. Plant extracts were screened against gram +ve and gram –ve bacteria for their antibacterial activity using micro-broth dilution and thin layer chromatography (TLC) based bioassay.

RESULTS

Plant extracts of D. muricatas showed minimum inhibitory concentration (MIC) in a range of 0.156-5.0 mg/ml. A decreased MIC was observed along with the increased polarity of extraction solvents. TLC guided bio-assay of active plant extracts against different bacteria developed in different solvent systems. TLC of D. muricata chloroform extracts was developed in T:Ea:M::7:2:1 solvent system. Bio-autography of D. muricata chloroform extract showed two zones of bacterial inhibition.

CONCLUSION

Plant extract exhibiting significant MIC does not necessarily show the zone of bacterial inhibition in TLC based bioassays. Moreover, different extracts showed selective activity toward selective bacterial strains that can be used to identify the specific pathways in the bacteria or against specific types of infections.

KEYWORDS: Micro-Broth Dilution Assay, TLC, Bio-Autography, Anti-Bacterial Compounds & MIC