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Extraction, gas chromatography-mass spectrometry analysis and screening of fruits of Terminalia chebula Retz. for its antimicrobial potential

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ABSTRACT

Background Terminalia chebula is called the "king of medicines" in Tibet and is always listed first in the Ayurvedic meteria medica because of its extraordinary powers of healing. Objective Identification, isolation and screening of pyrogallol which are responsible for antimicrobial property of fruits of Terminalia chebula. Materials and Methods Ethyl acetate fraction of fruits of Terminalia chebula was subjected to Gas chromatography-mass spectrometry (GC-MS) for the components present in the extract. Results Sixty four constituents were identified out of which kaempferol-3-O-rutinoside flavonoid and Vitamin E has been detected for the first time in fruits of this plant. Pyrogallol (46.26%) which was the major component of the extract in GC-MS analysis was isolated and screened for antimicrobial activity against selected test pathogens by Disc Diffusion Assay. Crude ethyl acetate fraction of the fruits was showing the same activity potential as was observed for pure pyrogallol which was the major component as per GC-MS analysis. The most sensitive species among the bacteria was Enterobacter aerogenes with highest inhibition zone (IZ = 31 mm; AI = 1.409 +/- 0.046) even at minimum inhibitory concentration (0.039 mg/ml). Conclusion Hence activity shown by crude ethyl acetate fraction might be due to pyrogallol present in the extract. On the basis of results it can be advocate that achieved crude ethyl acetate fraction can be explored for preparing antimicrobial drugs in future for the infectious caused by the pathogens tested in the study.

KEYWORDS

Disc diffusion assay . Enterobacter aerogenes . GC-MS . kaempferol-3-O-rutinoside . pyrogallol . Terminalia chebula

REFERENCES

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