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# Anti-fungal and anti-bacterial activities of ethanol extracts of selected traditional Chinese medicinal herbs.

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## Abstract

OBJECTIVE: To evaluate in vitro antimicrobial activities of selected 58 ethno-medicinal plant extracts with a view to assess their therapeutic potential.

METHODS: A total of 58 traditional Chinese medicinal plants were carefully selected based on the literature review and their traditional use. The antimicrobial activities of ethanol extracts of these medicinal plants were tested against fungi (Aspergillus fumigatus), yeast (Candida albicans), gram-negative (Acinetobacter baumannii and Pseudomonas aeruginosa) and gram-positive bacteria (Staphylococcus aureus). The activities were tested at three different concentrations of 1.00, 0.10 and 0.01 mg/mL. The data was analysed using Gene data Screener program.

RESULTS: The measured antimicrobial activities indicated that out of the 58 plant extracts, 15 extracts showed anti-fungal activity and 23 extracts exhibited anti-bacterial activity. Eight plant extracts have exhibited both anti-bacterial and anti-fungal activities. For instance, Eucommia ulmoides, Polygonum cuspidatum, Poria cocos and Uncaria rhyncophylla showed activity against both bacterial and fungal strains, indicating their broad spectrum of activity.

CONCLUSIONS: The results revealed that the ethanol extracts of 30 plants out of the selected 58 possess significant antimicrobial activities. It is interesting to note that the findings from the current study are consistent with the traditional use. A clear correlation has also been found between the antimicrobial activity and the flavonoid content of the plant extracts which is in agreement with the literature. Hence, the results presented here can be used to guide the selection of potential plant species for the isolation and structure elucidation of novel antimicrobial compounds in order to establish the structure-activity relationship. This in turn is expected to lead the way to the discovery of novel antimicrobial agents for therapeutic use.



KEYWORDS: Anti-bacterial activity; Anti-fungal activity; Chinese medicinal herb; Ethanol extract

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