



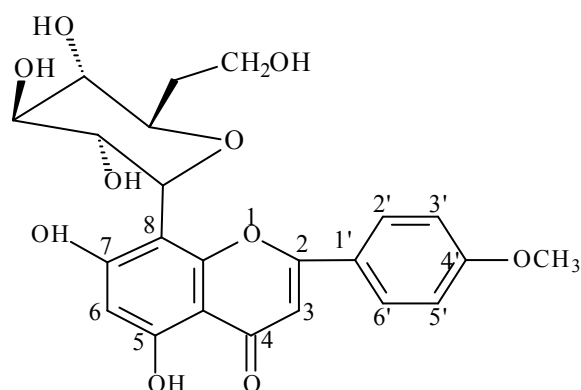
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Antimicrobial screening of 124 Egyptian plants and isolation of active C-glycoside flavones from *Lagerstroemia indica* leaves



Chemical structural of the antimicrobial compound isolated from *L. indica* leaves (5,7-dihydroxy-4-methoxy flavone-8-C- β -D-Glucopyranoside; cytisoside)

Abstract

Leaves of one hundred and twenty four plants grown in Egypt were screened for their antimicrobial activity against four pathogenic bacteria (*Staphylococcus aureus* ATCC 8095, *Salmonella enteritides* ATCC 13076, *Escherichia coli* ATCC 25922 and *Listeria monocytogenes* ATCC 15313) and a yeast *Candida albicans* ATCC 10231 using the disk diffusion method. Out of chloroform and methanol plant extracts, fourteen methanol extracts exhibited antimicrobial activity against two or more of the five tested microorganisms. These extracts were evaluated for their antimicrobial activity quantitatively using broth microdilution method. Only methanolic extract of *Lagerstroemia indica* leaves exhibited antimicrobial activity against all tested pathogenic bacteria and *C. albicans* yeast. Antimicrobial assay-guided isolation of the methanolic extract of *L. indica* leaves offered one active pure compound. The chemical structure of the isolated active compound was characterized by detailed



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spectroscopic analysis of its NMR and MS data to be 5,7-dihydroxy-'4-methoxy flavone -8-C- β -D-glucoopyranoside; cytoside. The isolated compound exhibited potent antimicrobial activity against all tested microbial strains with MLC (minimum lethal concentration) values of 32 $\mu\text{g.mL}^{-1}$ for *C. Albicans* and 16 $\mu\text{g.mL}^{-1}$ for the four tested pathogenic bacteria. The present study was concluded that the methanolic extract of *L. indica* leaves holds much promise as a potential source of beneficial antimicrobial components for different applications.