

Phytochemical screening, thin-layer chromatography and antimicrobial activity study of *Parquetina nigrescens* leaf extracts

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Abstract. *Parquetina nigrescens* leaves have been used in traditional medicine as an important and highly efficacious herbal remedy and have been recommended as a potential source of antimicrobial agent. Three extracts of the plant obtained using *n*-hexane, methanol and water were used as solvents. Phytochemical analysis of the plant extracts showed important bioactive compounds such as flavonoids, saponins, tannins, terpenes, steroids, phenols and glycosides, but alkaloids were absent in all the three extracts. Agar disk diffusion method was used to study the antimicrobial activity of the extracts at different concentrations which showed activity against three gram negative bacteria *Escherichia coli*, *Klebsiella pneumoniae* and *Proteus spp.*, one gram positive bacteria *Staphylococcus aureus*, and two fungus *Aspergillus flavus* and *Candida albicans* with zone of inhibition ranging from 5-15 mm for *n*-hexane extract, 6-16 mm for methanol extract and 1-11 mm for aqueous extract compared to zone of inhibition for the standard antibacterial drug, 0.5 mg/mL Streptomycin that ranges from 13 – 37 mm and the zone of inhibition for the standard antifungal drug 5 mg/mL fluconazole that ranges from 24 – 25 mm. *Klebsiella pneumoniae* was the most inhibited while *E. coli* was the least inhibited by the extract, and *Candida albicans* was found to be resistant to the extracts in all the concentrations. TLC finger-printing of the extracts using the solvent system – butanol : acetic acid : ethanol : distilled water in the ratio 50:10:10:30 showed spots with peaks different retention times ranging from 0.24 - 0.74 cm. The results provide justification for the use of the plants in folk medicine to treat various infectious diseases.

Keywords: TLC finger-print; antimicrobial agent; phytochemicals; *Parquetina nigrescens* extracts.

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