PHYTOCHEMISTRY, ANTIBACTERIAL AND ANTIVIRAL EFFECTS OF THE FRACTIONS
OF Asplenium nidus

LEAVES AQUEOUS EXTRACT

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ABSTRACT
In this study the phytochemical content, antibacterial and antiviral potentials of Asplenium nidus leaves aqueous extract fractions was described. Leaves aqueous extract was fractionated using chloroform, hexane and ethyl acetate. Phytochemical screening revealed the presence of alkaloid, flavonoids and terpenoids in all fractions with anthraquinones available only in the ethyl acetate fraction. Safety of the fractions on Vero cells was determined from CC50 value i.e. the concentration that reduces 50% of cell viability. The fractions are not cytotoxic with CC50 value ranged from 0.78 to 32 mg/mL. The antibacterial activities of the fractions were evaluated against fifteen pathogenic bacteria by determining the minimum inhibition concentration (MIC) and minimum bactericidal concentration (MBC). The MIC and MBC values for the ethyl acetate fraction showed highest bactericidal activity against fourteen bacteria. The antibacterial selectivity indices (SI = CC50/MIC) for the fractions ranged between none to 40.94. The fractions have antiviral potential against Herpes Simplex Virus Type I (HSV-1) with effective concentration that reduces 50% of plaque formation (EC50) were between 0.056 to 0.54 mg/mL and selective index (SI = CC50/EC50) of the fractions ranged between 14 to 59. As a conclusion, fractions from the aqueous extract of A. nidus have potential as antibacterial and antiviral agents that may be attributed by the anthraquinones content.

**Key words:** Asplenium nidus, phytochemical content, cytotoxicity, bactericidal activity, anti HSV-1 activity