

THE QUANTITATIVE PHYTOCHEMICALS CONTENT OF THE ROOT BARK OF GREWIA MOLLIS, THE ANTIOXIDANT AND CYTOTOXICITY ACTIVITIES OF ITS EXTRACTS

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ABSTRACT

Grewia mollis plant is medicinally important plant from North Eastern part of Nigeria. The quantitative phytochemical content of the root bark of the plant were determined with the antioxidant and cytotoxic activities of its extracts obtained by serial extraction with solvents of increasing polarity using soxhlet apparatus. The quantitative phytochemical analysis showed that flavonoid was the phytochemical with the highest concentration while alkaloid had the lowest concentration in the root bark. The cytotoxicity activity determined by the brine shrimp lethality test showed that the water extract was the most active with LC_{50} of 3.50 $\mu\text{g/ml}$, followed by the methanol extract with LC_{50} value of 11.61 $\mu\text{g/ml}$, while the remaining extracts had moderate activity with LC_{50} values of acetone (120.77 $\mu\text{g/ml}$), ethyl acetate (426.20 $\mu\text{g/ml}$) and hexane the least with (730.76 $\mu\text{g/ml}$). The root bark extracts showed good antioxidant activity with three extracts while two of the extracts were not active. The standard ascorbic acid showed IC_{50} value of 50.00 $\mu\text{g/ml}$, while the active extracts has the IC_{50} values for water 108.00 $\mu\text{g/ml}$, ethyl acetate 112.00 $\mu\text{g/ml}$, and acetone 127.00 $\mu\text{g/ml}$. The non active extracts were the hexane extract with LC_{50} value of 1350.00 $\mu\text{g/ml}$ and methanol 1957.00 $\mu\text{g/ml}$.

Key words: *Grewia mollis*, quantitative phytochemical, cytotoxicity and antioxidant activity.