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Evaluation of Antibacterial Properties of Flavonoids in stem bark extract of *Antiaris africana* (Engl)

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ABSTRACT

Objective: To investigate the antibacterial properties of flavonoids in stem bark extract of *Antiaris africana,* a plant that is used ethnobotanically in Nigeria to relieve rheumatic, respiratory and stomachic pains.

Methodology and results: The stem bark of *Antiaris africana* and clinical isolates of *Bacillus subtilis*, *Streptococcus pyogenes* and *Escherichia coli* were used in this study. The extract from *A. africana* was screened for phytochemical properties using standard methods. The flavonoid fraction in the extracts was assayed using the agar diffusion method to determine the minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC). The MIC of the flavonoid fraction of *A. africana* against *B. subtilis*, *S. pyogenes* and *E.coli* were 0.04, 0.050 and 0.050mg/ml, respectively. The lowest MBC of 0.045mg/ml was recorded against *B. subtilis*

while a higher MBC of 0.050mg/ml was recorded against *S. pyogenes* and *E.coli*.

Conclusions and application of findings: The phytochemical screening of the stem bark extract of *Antiaris africana* was found to contain flavonoids. The large size of inhibition zones against the test organisms is indicative of the potency of the flavonoid fraction from *A. africana*. The results of this study show that the flavonoid fraction from *A. africana* has antibacterial activity, though organisms vary in the degree of susceptibility to the antibacterial agents. The findings justify the continued ethnobotanical use of stem bark extract of *Antiaris africana* to relieve respiratory and stomach pains. The flavonoid fraction from *A. africana* stem bark should be explored further as a potential source of antibacterial agents.

Key words: *Antiaris africana,* antibacterial properties, flavonoids, inhibition, ethnobotanical use