Antibacterial Activity of *Anthocliesta vogelii* (planch) and *Tinospora cordifolia* on *Esherichia coli* and *Pseudomonas aeruginosa*

Adeyemi, S. B*[1]., [2]Afonja, A. I., [3]Odebisi-Omokanye, M. B., [1]Okor, T. P. and A. A. [1]Lateef.

[1]Department of Plant Biology, Faculty of Life Sciences, University of Ilorin, Ilorin. [2]Department of Naturopathic Medicine, Federal College of Complementary and Alternative Medicine, Abuja, Nigeria. [3]Department of Microbiology, Faculty of Life Sciences, University of Ilorin, Ilorin.

Abstract

An ethnobotanical investigation has revealed that the roots of Anthocliesta vogelii and stem bark of Tinospora cordifolia are used by indigenous people in the treatment of pile. This present study evaluated the antibacterial activity of the root and stem bark of Anthocliesta vogelii and Tinospora cordifolia respectively against the human pathogenic gram-negative bacteria Pseudomonas aeruginosa and Escherichia coli. The phytochemical composition of these two plants was also assayed. Graded concentrations of 25mg/ml, 50mg/ml, 100mg/ml and 200mg/ml of the respective crude extract were applied against the test organisms. The percentage yield of the ethanolic extract of T. cordifolia stem and A. vogelii root were 40.978% and 21.872% respectively with their phytochemical analysis revealing the presence of saponins, alkaloids, tannins, flavonoids, and glycosides, with steroids present in A. vogelii but absent in T. cordifolia. The antimicrobial effect of the ethanolic extracts of both plants on the two test bacteria was significant ($P<0.05$). However, the ethanolic root extract of A. vogelii showed higher inhibition against P. aeruginosa and E. coli than the ethanolic stem extract of T. cordifolia at concentrations of 50mg/ml, 100mg/ml and 200mg/ml, while both extracts did not have any inhibition on the test organisms at a concentration of 25mg/ml. The Minimum Inhibitory Concentrations (MICs) of the ethanolic extract of A. vogelii root on P. aeruginosa and E. coli were 50mg/ml and 100mg/ml respectively, while the MICs for the ethanolic extract of T. cordifolia stem on P. aeruginosa and E. coli was 50mg/ml respectively. Both plant extracts could not kill the test bacteria; hence, they are only bacteriostatic and not bactericidal against the test bacteria.

Keywords: *Anthocleista vogelii, Tinospora cordifolia,* Bacterial, Bacteriostatic, Bactericidal

Email: adeyemi.sb@unilorin.edu.ng; +2348052248230.

Received: 2016/11/29
Accepted: 2020/02/29
DOI: https://dx.doi.org/10.4314/njtr.v15i3.7