

# Pharmacology and Ethnopharmacology

May 02-04, 2016 Chicago, USA

## The antibacterial activities of some plant derived triterpenes

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The increase in the prevalence of multi-drug resistant bacteria has necessitated the search for new antimicrobials from alternative sources such as traditional medicinal plants. The agar well diffusion method was employed to determine the susceptibilities of four plant derived triterpenes namely, 3 $\beta$ -hydroxyolanosta-9, 24-dien-21-oic acid (RA5), and methyl-3 $\beta$ -hydroxyolanosta-9, 24-dien-21oate (RA3), a mixture of oleanolic acid and betulinic acid (SF1) and a mixture of 3 $\beta$ -acetyloleanolic acid and 3 $\beta$ -acetylbetulinic acid (SF2), against seven *Escherichia coli*, one *Bacillus cereus*, five *Enterococcus* and nine *Vibrio bacteria*. The minimum inhibitory concentration (MIC) and minimum bactericidal concentration (MBC) were determined through the micro-broth dilution assay. The checkerboard method was used to determine the antibiotic-triterpene interactions while the cytosolic lactate dehydrogenase test was used to determine the membrane damaging potentials of the triterpenes. RA3, RA5, SF1 and SF2 had activities against 86.4%, 54.6%, 22.7% and 9.09% of the test bacteria respectively. SF1 had the lowest MIC values ranging 0.625-10 mg/ml with lower MIC values being noted against Gram negative bacteria in comparison to Gram positive bacteria; this trend was also noted among the activities of RA3 and RA5. MBC studies proved the triterpenes to be mostly bacteriostatic, while interactions with ciprofloxacin were ranging between indifference and antagonism. RA3 alone showed minimal membrane damaging potential with the levels of cytosolic lactate dehydrogenase released ranging from 1-36% against *E.coli* (DSM-8695) and *V. Vulnificus* (AL 042). The results hereby show the potential that the test triterpenes have as antibacterial agents, especially against the Gram negative bacteria namely *E.coli* and *Vibrio* bacteria.

### Biography

Penduka D completed her PhD from the University of Fort Hare, South Africa and she is currently a Postdoctoral research fellow at the University of Zululand, South Africa. She has published 9 papers in peer reviewed reputable journals, and currently has two papers accepted for publication in this year 2015.

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