## 7<sup>th</sup> Euro-Global Summit on **TOXICOLOGY & Applied Pharmacology**

October 24-26, 2016 Rome, Italy

## Cytotoxicity of nanoparticles from extracts of Tetradenia riparia: A preliminary evaluation

## Nisha Singh

University of KwaZulu-Natal, South Africa

T etradenia riparia (Hochst.) Codd, Lamiaceae a traditionally used medicinal plant is indigenous to Southern Africa. Studies have shown anti-bacterial and anti-helminthic properties in extracts and compounds from this species. However, cytotoxic assessment of nanoparticles has not been reported. This study investigated the *in vitro* screening of the nanoparticles for potential cytotoxic activity against the human breast cancer (MCF7) cell line. Data generated were used to plot a dose-response curve of which the concentration of extract required to kill 50% of MCF7 cell population (IC<sub>50</sub>) was determined to be 5 and 375 µg ml<sup>-1</sup> for AgNPs and AuNPs, respectively, after 96 hrs. Gold and silver nanoparticles were also tested for anti-bacterial activity on five pathogenic bacteria. AgNPs were active and showed MIC against *E. coli* (1.56 µl ml<sup>-1</sup>), *E. faecalis* (1.56 µl ml<sup>-1</sup>), *K. pneumonia* (1.56 µl ml<sup>-1</sup>), *P. aeruginosa* (12.5 µl ml<sup>-1</sup>) and *S. aureus* (50 µl ml<sup>-1</sup>). MIC using AuNPs was as follows: *K. pneumonia* (1.56 µl ml<sup>-1</sup>), *E. faecalis* (1.56 µl ml<sup>-1</sup>), *E. coli* (6.25 µl ml<sup>-1</sup>), *P. aeruginosa* (12.5 µl ml<sup>-1</sup>) and *S. aureus* (50 µl ml<sup>-1</sup>). In order to fully extrapolate and reveal the full potential that may be attributed to these nanoparticles, further and more intensive studies must be undertaken.

Singhni@ukzn.ac.za

Notes: