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Cytotoxic and genotoxic potential of *Walidda antidysenterica* on human lymphocytes- A herb used in Sri Lankan traditional medicine

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Walidda antidysenterica (Apocynaceae) is widely used in traditional medicinal practices in Sri Lanka and in Asia as a remedy for respiratory disorders, hematuria, spermatorrhoea, chest affections, helminthic disorders, dressing the oozing wounds, jaundice, haemorrhoids, epilepsy, rheumatoid arthritis, osteoporosis, bacterial diseases and gut mobility disorders. Juice extracted from the bark is administrated to treat mouth sores. Flowers are used to treat snake bites, and leaves are used to treat skin disorders such as psoriasis, dermatitis etc. Despite of its medicinal value, it was reported that this plant contain pyrrolizidine alkaloids (a potent toxic compound). Therefore the current study investigated the *in vitro* toxicity of ethanol leaf, stem bark and flower extracts of *W. antidysenterica.* The cytotoxic and genotoxic activity of extracts were evaluated against human lymphocytes using trypan blue dye exclusion assay and alkaline comet assay. All extracts exhibited decrease in cell viability (< 70%) at concentrations above 50 µg/ml following 18 hour exposure, except flower extract which retained >80% cell viability even at 1000 µg/ml. Comet assay results indicated that the leaf extract induced DNA damages at the concentrations of 30, 40 and 50 µg/ml ($p<0.05$) and stem bark extract induced DNA damages at the concentrations of 40 and 50 µg/ml ($p<0.05$) compared to positive control (H_2O_2). Flower extract did not induce DNA damages even at 50 µg/ml ($p>0.05$). In conclusion, the results suggest that the flower extract was neither cytotoxic nor genotoxic whereas leaf extract showed significant cytotoxic and genotoxic activity compared to stem bark extract in a concentration dependent manner.

Biography

Baragamaarachchi R Y is a first year PhD student who graduated with a first class in BSc Genetics from University of Bangalore. She obtained MSc in Molecular Life Sciences in 2014 from University of Colombo, Sri Lanka. Her research interests lie in Molecular Biology, Immunology, Medicinal plants, Genetics and Microbiology. She has served as a resource person at workshops based on Immunological techniques and awarded at 2nd International Conference on Frontiers in Molecular Life Sciences held in Sri Lanka (2014), for outstanding poster presentation.

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