# In Vitro Cytotoxicity of Some Medicinal Plants Used in Traditional Medicine in Tanzania

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**Abstract**
Plants used in traditional medicine in Tanzania were screened for their cytotoxicity using the brine shrimp and CellTiter-BlueTM cell viability assays. Dichloromethane extracts of Capparis erythrocarpos, Cussonia arborea, Dracaena steudneri, Lannea schimperi, Pseudospondias microcarpa, Rauvolfia vomitoria, Sapium ellipticum and Zehneria scabra exhibited various cytotoxic activities against brine shrimp larvae. Only semi-purified fractions of C. erythrocarpos, C. arborea, D. steudneri, Lannea schimperi and S. ellipticum and one pure compound Lup-20(29)-en-3-one (1) from S.ellipticum were tested against K562 Leukaemia cell line using the CellTiter-BlueTM cell viability assay method. In the brine shrimp lethality assay, P. microcarpa was the most toxic plant with an LC50 value of 1.9 µg/ml (95%CI, 1.6-2.2 µg/ml) , while Z. scabra was the least toxic plant with LC50 value of 179.4 µg/ml (95%CI, 156.1-213.9 µg/ml). In the CellTiter-BlueTM cell viability assay, the mean % cell vitality growth for the fractions of each of the five plant species C. arborea, C. erythrocarpos, D. steudneri, L. schimperi and S. ellipticum were 43.1%, 67.2%, 82.1%, 52.3% and 87.6% respectively, with $P<0.0001$ and 95% confidence intervals (CI) of 54.746-81.082 µg/ml. The IC50 concentration for compound Lup-20(29)-en-3-one (1) was 1.747x10-6 µM with 95% confidence intervals (CI) of 3.019x10-7 to 1.011x10-4 µM. Results indicate that most of the extracts tested were relatively non-toxic hence supporting the inherent use of these plants in traditional medicine.