
A laboratory-based pilot study on anticancer property of *Alpinia calcarata* (“Araththa”) and *Solanum surattense* (“Ela Batu”) in immunosuppressed mice, rats and human cell lines

Kithmini K.K.A.¹, Chandana E.P.S.^{2*}, De Silva P.M.C.S.¹, Hettiihewa M.³

¹Department of Zoology, Faculty of Science, University of Ruhuna, Wellamadama, Matara, Sri Lanka.

²Department of Biosystems Technology, Faculty of Technology, University of Ruhuna, Matara, Sri Lanka.

³Faculty of Health Sciences, CINEC CAMPUS, Malabe, Sri Lanka.

Present study was undertaken to validate anti-cancer property of *Alpinia calcarata* and *Solanum surattense* in immunosuppressed mice, rats and human cell lines. Rat xenograft model of HeLa cells (human) was established. Rats were orally fed with both plant extracts at doses of 50 mg/kg and 100 mg/kg for three weeks. On the 21st day, two hours after treatment, Cyclophosphamide was orally given at a dose of 50 mg/kg to all rats. Right armpit of immunosuppressed rats was subcutaneously inoculated with 0.2 ml HeLa single-cell suspension. Growth of xenograft tumor was observed every day. After 20 days, maximum width, length and weight of each tumor were measured. Tumor volume and tumor inhibition rate were calculated. Statistically significant, low tumor mass [(2.73 ± 0.19) and (1.76 ± 0.15)] and tumor volume [(499.16 ± 184.77) and (177.33 ± 48.28)] were observed in *A. calcarata* treated rats, indicating its potential to suppress tumor growth. When comparing mean values of the size of armpit tumors among all treatment groups, higher mean values [(3.55 ± 0.36) and (3.42 ± 0.34)] can be identified in the groups of rats treated with *S. surattense* extracts. According to the results, *A. calcarata* extractions might be useful in cancer treatments. According to statistical analysis between treatment groups for size of tumors, it was evident that *A. calcarata* treated groups might slow down tumor growth significantly (P<0.05). Therefore, dose of plant extraction of *A. calcarata* may cause significant influence for size of armpit tumor. However, there was no significant difference (P>0.05) of tumor growth in rats treated with *S. surattense*. According to the results of this study *A. calcarata* extractions might be useful in cancer treatments.

Keywords: *A. calcarata*, Anti-cancer, Cyclophosphamide, *S. surattense*, Xenograft

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*Corresponding author: epschandana@gmail.com