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Cytotoxic activity of *Alpinia calcarata* Rosc. against human lung cancer cell line (NCI-H460)

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Alpinia calcarata Rosc. (Zingiberaceae) is extensively used in Ayurvedic formulations against anti-inflammatory diseases. Two bis-labdanic diterpenoids (calcaratarin D and E) isolated from the rhizome of *A. calcarata* grown in China have been reported to possess cytotoxic activity against human KB cells *in vitro*. This plant is also grown in Sri Lanka and the 70% ethanol and the aqueous extracts as well as the oils derived from rhizome and its leaves were evaluated for their cytotoxic potential against human lung cancer cell line (NCI-H460). *A.calcarata* rhizome and leaves were subjected to Soxhlet extraction using 70% ethanol and hydro distillation (to collect the oil) using the Clevenger apparatus separately and the dried crude extracts were sequentially partitioned with hexane, dichloromethane, ethyl acetate and butanol. The dried fractions obtained were used for the Sulforhodamine-B cytotoxicity assay. Extracts (250 µg/mL) of both rhizome and leaves of *A.calcarata* and the fractions (100 µg/mL) inhibited cell growth and these were further evaluated at various concentrations (extracts: 15.62, 31.25, 62.5, 125 and 250 µg/mL; fractions: 6.25, 12.5, 25, 50 and 100 µg/mL). Hexane, dichloromethane, ethyl acetate, butanol and aqueous fractions of *A. calcarata* rhizome and leaf ethanolic and water extracts as well as the oils demonstrated varying levels of growth inhibition (% NG) of lung cancer cell line NCI-H460 ranging from 4 to 94 %. The growth inhibition potency order appeared to be rhizome water extract (NG: 107.7 %) < rhizome ethanolic extract (NG: 68.2 %) < leaf ethanolic extract (NG: -25.1 %) < leaf water extract (NG: -72.3 %) < rhizome oil (NG: -93.0 %) < leaf oil (NG: -94.3 %). Among all the fractions tested, the dichloromethane fraction of leaf ethanolic extract (NG: -33.8 %; Cytotoxicity (GI_{50}): 30.6) was the most promising. Considering the cytotoxic properties of *A. calcarata* further exploration of the activity to identify pure compounds is required.

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