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Apoptosis and cell cycle arrest in column fractions of *Aerva lanata L*

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Objective: Isolation, characterization and *in vitro* anticancer activity of purified *Aerva lanata L* chloroform fractions.

Methods: The dried aerial part of plant *Aerva lanata L.* was extracted with ethanol and after *lyophilizion,* the dried ethanol extract was further fractioned with chloroform to get *Aerva lanata L.* chloroform fraction (ALCF). Qualitative phytochemical screening showed that ALCF contains alkaloids, steroid, carbohydrates and tannins content. After that ALCF fraction was further purified using column chromatography taking silica gel G (60-120 mesh) as adsorbent to get pure compounds.

Result: Starting from pure chloroform we shifted the polarity towards pure methanol. Different ratio of chloroform: methanol: tri ethyl amine has been used in between. Total 100 fractions were collected by pooling only 6 fractions taken for the study. The first few fraction of pure chloroform were containing high quantity of stigmasterol and most polar fractions were containing an alkaloid aervolanine. The isolated compounds were characterized by spectroscopic techniques (IR, NMR, and Mass Spectroscopy).

Conclusion: The fractions show significant activity against *in vitro* anticancer cell line and shows apoptosis and cell cycle arrest.

Keywords: Column chromatography, Silica gel G, ALCF, *Aerva lanata L.*

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