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Growth inhibition effect of plants extract (*Mussaenda pubescens* and *Curcuma zedoaria*) on tumour cell lines *in vitro*

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ABSTRACT

A growth inhibition effect study of *Mussaenda pubescens* and *Curcuma zedoaria* extracts was conducted using two tumour derived cell lines in order to evaluate their activity on cell proliferation. The plants were extracted using ethanol and ether solution. Lethal concentration-50 (LC_{50}) of the extracts were determined using Brine Shrimp Lethality Test. The growth inhibition activity of the extracts was performed using a Trypan Blue staining methods and the cells were counted with a haemocytometer. The extract of both plants were significantly inhibited the proliferation of myeloma and carcinoma derived cell lines in vitro ($P<0.05$).

The LC_{50} for ether extract of *Curcuma zedoaria* was 21 ppm, and the dose tested for this extract were 10, 20 and 30 ppm. The highest growth inhibition effect of *Curcuma zedoaria* ethanol extract on each cell lines were 86.57% for myeloma cell, while for carcinoma cell was 78.43%, this activity was occurred on the dose of 30 ppm. For the ethanol extract of *Curcuma zedoaria*, the LC_{50} level was 69 ppm. The tested doses were 30, 60 and 90 ppm and the highest activity on both cell lines were occurred on the dose of 90 ppm, they were 83.7% for myeloma cell and 80.8% for carcinoma cell. On the ethanol extract of *Mussaenda pubescens*, LC_{50} was achieved at 32.45 ppm, while the highest growth inhibition activity was exhibited at the concentration of 50 ppm with the percentage of 86.80 for myeloma cell and 87.66 for the carcinoma cells.

From this study we concluded that *Curcuma zedoaria* and *Mussaenda pubescens* contained substances that can inhibit the growth of some tumour cell *in vitro*, therefore we suggest that both plants have a possibility and could be used as a source of anti-tumour substances. Isolation and identification of the bioactive compounds of both plants are in progress.

Key words: Growth inhibition, in vitro, tumour cells, *Curcuma zedoaria*, *Mussaenda pubescens*