

Bioactivity-guided isolation of anticancer agents from *Bauhinia kockiana* Korth

ABSTRACT

Background: Flowers of *Bauhinia kockiana* were investigated for their anticancer properties. **Methods:** Gallic acid (1), and methyl gallate (2), were isolated via bioassay-directed isolation, and they exhibited anticancer properties towards several cancer cell lines, examined using MTT cell viability assay. Pyrogallol (3) was examined against the same cancer cell lines to deduce the bioactive functional group of the phenolic compounds. **Results:** The results showed that the phenolic compounds could exhibit moderate to weak cytotoxicity towards certain cell lines (GI₅₀ 30 - 86 μ M), but were inactive towards DU145 prostate cancer cell (GI₅₀ > 100 μ M). **Conclusion:** It was observed that pyrogallol moiety was one of the essential functional structures of the phenolic compounds in exhibiting anticancer activity. Also, the carboxyl group of compound 1 was also important in anticancer activity. Examination of the PC-3 cells treated with compound 1 using fluorescence microscopy showed that PC-3 cells were killed by apoptosis.

Keyword: Gallic acid; *Bauhinia kockiana*; Pyrogallol; Anticancer; Apoptosis