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ANTIPROLIFERATIVE EFFECT OF GELAM HONEY ON LIVER CANCER CELL LINE

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Background:

Gelam honey is a local monofloral honey produced by *Apis mellifera* from *Melaluca spp.* Its content is high in polyphenols and nonphenol antioxidant. Both possess antioxidant activity and free radical scavenging properties that play a role in preventing cancer and chronic disease. The purpose of this study was to determine the effect of Gelam honey on the proliferation of HepG2 cancer cell line.

Materials and Methods:

MTS assay was carried out to obtain IC_{50} value of Gelam honey towards HepG2 and WRL-68 by treatment with different concentration of Gelam honey from 1 to 70%. The antiproliferative activity of Gelam honey was determined by BrdU assay. Morphological analysis for apoptosis detection was done using fluorescent microscope under 400X magnification by propidium iodide staining.

Results:

The IC_{50} values of Gelam honey towards HepG2 and WRL-68 was 25% and 70% respectively. BrdU assay showed that Gelam honey reduces the proliferation of HepG2 cell line. Morphological observation showed that Gelam honey has the ability to induce apoptosis in HepG2 cell line and WRL-68 by producing typical apoptotic characteristic.

Conclusion:

The antiproliferative effect of Gelam honey seems to be more selective on cancer cells and its therapeutic potential against liver cancer cell might be through apoptosis induction.

Keywords:

antiproliferative, honey, liver cancer