

Growth-inhibitory effects of the red alga *Gelidium* *amansii* on cultured cells

**Yue-Hwa Chen, Ching-Jung Tu and Hsiao-Ting Wu
Chen YH;Tu C-J;Wu HT**

Abstract

The objective of this study was to investigate the effects of *Gelidium amansii*, an edible red agar cultivated off the northeast coast of Taiwan, on the growth of two lines of cancer cells, murine hepatoma (Hepa-1) and human leukemia (HL-60) cells, as well as a normal cell line, murine embryo fibroblast cells (NIH-3T3). The potential role of *G. amansii* on the induction of apoptosis was also examined. The results indicated that all extracts from *G. amansii*, including phosphate-buffered saline (PBS) and methanol extracts from dried algae as well as the dimethyl sulfoxide (DMSO) extract from freeze-dried *G. amansii* agar, inhibited the growth of Hepa-1 and NIH-3T3 cells, but not the growth of HL-60 cells. Annexin V-positive cells were observed in methanol and DMSO extract-treated, but not PBS extract-treated Hepa-1 and NIH-3T3 cells, suggesting that the lipid-soluble extracts of *G. amansii* induced apoptosis. In summary, extracts of *G. amansii* from various preparations exhibited antiproliferative effects on Hepa-1 and NIH-3T3 cells, and apoptosis may play a role in the methanol and DMSO extract-induced inhibitory effects. However, the antiproliferative effects of PBS extracts was not through apoptosis. Moreover, the growth-inhibitory effects of *G. amansii* were not specific to cancer cells.