

Abstract

Stephania venosa (*S. venosa*) is a Thai folk medicine. Its rhizome has been used for treatment of various disease including cancer. It is widely accepted that apoptosis is a new therapeutic target of cancer research. This study aims to investigate the effect of the water extract from *S. venosa* rhizome on cytotoxic and apoptotic activities in both normal human lymphocytes and lymphocytes from patients with cervical cancer.

Lymphocytes were collected and separated from peripheral blood of either healthy donors or patients with cervical cancer. The lymphocytes were cultured in RPMI medium and treated with *S. venosa* extract at the concentration of 0, 10, 30, 100, 300 and 1000 $\mu\text{g/ml}$. After 48 hour incubation, the cytotoxic effect of the extract was determined by trypan blue dye exclusion method. Apoptotic activity of the extract was studied using in situ terminal deoxynucleotidyl transferase assay. The 0.5 Gys. ^{60}Co gamma ray exposure was uses as the positive control groups.

In normal lymphocytes, the results revealed that the *S. venosa* extract possessed cytotoxic effect with the 50% inhibitory concentration (IC_{50}) at 340 $\mu\text{g/ml}$. At 300 $\mu\text{g/ml}$, the extract had apoptotic activity on cultured lymphocytes similar to radiation. The results also showed that the extract and radiation had an additive effect. Likely, the extract, at the concentration of 300 $\mu\text{g/ml}$, had apoptotic activity on lymphocytes from patients with cervical cancer similar to the radiation.

These data suggest that the water extract of *S. venosa* exhibited cytotoxic and apoptotic activity on lymphocytes. These results may encourage for future investigations on the effects of *S. venosa* as an anticancer agent.