

Cytotoxic effects of aqueous haruan fish extract on SK-N-SH cells

ABSTRACT

Haruan fish is a fresh water carnivorous fish popularly known in tropical countries like Malaysia, Thailand and Indonesia. The aqueous extract of the fish contains omega-3 fatty acids, namely, eicosapentaenoic acids (EPA) and deicosahexaenoic acids (HA). These fatty acids possess cytotoxic effects. Here we study the cytotoxic effects of the extract on neuroblastoma cancer cell line, SK-N-SH cells, MTT assay, phase contrast microscopy and flow cytometry were the methods used to determine the cytotoxic effects of the extract. For MTT assay, the cells were treated with different concentrations of the extract range from 3.125 $\mu\text{g/ml}$ to 100 $\mu\text{g/ml}$. For the phase contrast microscopy and flow cytometry, 100 $\mu\text{g/ml}$ of the extract was adopted as the concentration used for the treatment of the cells prior to observation and recording of results. From MTT assay, cell visibility of 68.8% were recorded, indicating lack of cytotoxic effect. The result for phase contrast microscopy showed no clear different between treated and control group, supporting the MTT result. However, flow cytometry results indicates significant ($P < 0.05$) apoptosis when control cells were compared with treated ones. Aqueous haruan fish extract possess mild cytotoxic effects on SK-N-SH cells.

Keyword: Omega-3 fatty acids; Fish extract; Cancer; Neuroblastoma; Haruan fish