Antiproliferative activity of 2',4'-dihydroxy-6-methoxy-3,5dimethylchalcone isolated from Eugenia aquea Burm f. leaves in Jurkat Cells

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Abstract

Indonesia is one of the biggest biodiversity countries with many empiric traditional herbal medicines. Nevertheless, the herbal medicines have not been fully investigated for its therapeutic effects, including cancer with its major health problem and high demand of new anticancer agents. Our previous study on 2',4'-dihydroxy-6-methoxy-3,5dimethylchalcone, an active compound isolated from leaves of Indonesian medicinal plants Eugenia aquea Burm f., had anticancer activity in MCF-7 human breast cancer cells through induction of apoptosis. In present study, we investigated the antiproliferative activity of 2',4'-dihvdroxy-6-methoxy-3,5-dimethylchalcone in Jurkat cells. Leaves of E. aquea were extracted, fractionated, and isolated for its active compound. Jurkat T cells were treated with 2',4'-dihydroxy-6-methoxy-3,5dimethylchalcone for 12 and 24 h then cell viability assay and real time-Reverse Transcriptase Polymerase Chain Reaction (rt-RT PCR) for IL-2 mRNA measurement were performed. The result showed that 2',4'-dihydroxy-6-methoxy-3,5-dimethylchalcone inhibited Jurkat T cell proliferation. Expression of IL-2 mRNA was slightly induced after treatment. Our study showed an antiproliferative activity of 2',4'-dihvdroxy-6methoxy-3,5-dimethylchalcone and slight induction of immunological microenvironment of T cells.