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ANTICANCER EFFECTS OF AURAPTENE ON HUMAN LEUKEMIA/LYMPHOMA CELLS

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Auraptene is a natural prenyloxycoumarin mainly synthesized by *Citrus* plants. It possessed a wide range of pharmacological properties including antioxidantive, anti-inflammatory, antimicrobial and anticancer effects. Adult T cell leukemia/lymphoma (ATL) is an aggressive malignancy of mature activated T cells caused by HTLV-1. ATL is endemic in several regions of the world where HTLV-1 is prevalent in particular southwestern Japan, the Caribbean basin, part of central Africa and north eastern of Iran. In spite of improvement in therapy and management of ATLL, the average survival rate of this malignancy is low. Due to the urgent need for new and effective anticancer drugs against ATL, our goal was to determine the anticancer effects of auraptene against ATL cells. To do so, MT-2 cells were treated with increasing concentrations of auraptene for 24, 48 and 72 hours, and then viability of cells was evaluated using WST-1 reagent. Result of our study indicated that 10 and 20 µg/ml auraptene had no significant toxic effects on MT-2 cells after 24, 48 and 72 hours, while the IC_{50} of auraptene was determined as 40 µg/ml after 72 hour. To note, cells treated with 0.4% dimethyl sulfoxide (DMSO) were considered as control treatment, as auraptene crystals were dissolved in DMSO. Since anticancer and synergic activity of auraptene has been reported in several studies, this coumarin could be used as a suitable agent in future *in vitro* and *in vivo* studies.