

## Umbelliprenin induced cytotoxic effects on MT-2 leukemia/lymphoma cells

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Adult T-cell leukemia/lymphoma (ATLL) is a rare mature CD4<sup>+</sup> T-cell neoplasm caused by human T-lymphotrophic virus type 1 (HTLV-1). Currently, almost 20 million individuals have been diagnosed with HTLV-1 infection around the world, while most reports are from endemic areas for this virus including our country Iran. Although several therapeutic approaches are used for ATLL treatment, the survival rate of patients with acute and lymphomatous is still very low. In this regard, introducing novel anticancer agents in vitro could help clinicians to design more effective therapeutic regimes for ATLL. Umbelliprenin (UMB) is a natural coumarin extracted from dried roots of *Ferula szwitsiana* with broad-spectrum anticancer effects. In present attempt, we aimed to investigate cytotoxic effects of UMB on an ATLL cell line, MT-2. In this regard, white crystals of UMB were dissolved in dimethyl sulfoxide (DMSO), and then MT-2 cells were treated with different concentrations of UMB for 24, 48 and 72 hours. To assess cytotoxicity of UMB, WST-1 kit, which is based on the cleavage of the tetrazolium salt to formazan by cellular mitochondrial dehydrogenases, was used. Results of present study indicated that 12.5 and 25 µg/ml UMB had no significant toxic ctivity on MT-2 cells after 24 and 48 hours. On the other hand, 40 µg/ml UMB induced noticeable cytotoxic effects after 72 hours, in comparison with relevant control treatment (0.4% DMSO). According to current observations, and also previous studies that reported cytotoxic effects of UMB on other human cancer cell lines, UMB could be considered as a potent anticancer coumarin for future in vivo investigations.

**Key words:** Umbelliprenin, Adult T-cell leukemia/lymphoma, cytotoxicity