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STUDYING ANTICANCER EFFECTS OF PARTHENOLIDE ON HUMAN LEUKEMIA/LYMPHOMA CELLS *IN VITRO*

Hamideh Koohpaykar[1], Mohammad Hadi Sadeghian[1,*], Houshang Rafatpanah[2*], Fatemeh Rassouli[3] Mehrdad Iranshahi[4]

[1]*Department of Hematology and Blood Bank, Faculty of Medicine, Mashhad University of Medical Sciences, Iran*
[2]*Inflammation and Inflammatory Diseases Research Center, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran*
[3]*Cell and Molecular Biotechnology Research Group, Institute of Biotechnology, Ferdowsi University of Mashhad, Mashhad, Iran*
[4]*Department of Pharmacognosy and Biotechnology, Biotechnology Research Center, Faculty of Pharmacy Mashhad University of Medical Sciences, Mashhad, Iran*
E-mail: SadeghianMH@mums.ac.ir

Parthenolide is a sesquiterpene lactone isolated from feverfew plant (*Tanacetum parthenium*) with broad-spectrum anticancer and antiprolifrative activities.Adult T-cell leukemia/lymphoma (ATLL) is a peripheral T-cell lymphoma caused by human T-cell leukemia/lymphoma virus type1 (HTLV-1). HTLV-1 infects approximately 5–10 million people worldwide, and Iran especially Khorasan province are known as endemic regions for this virus. Despite advances in therapy and management of ATLL, the average survival rate of this malignancy is low. Since identification of new and more effective anticancer agents in necessary for ATLL treatment, we aimed to investigate cytotoxic effects of parthenolideon ATLL cells in the present study. To do so, MT-2 cellswere treated with increasing concentrations of parthenolide for 24, 48 and 72 hours. Then, viability of cells was evaluated using WST-1 detection kit, according to the manufacturers instruction.Results of current study revealed that 2.5and 5 µg/mlparthenolidehad no significant toxiceffects on MT-2cells after24 and 48 hours. Nevertheless, 10 µg/mlparthenolideinduced considerable toxic effects after 72 hours, as more than 50% of the cells were dead comparing with relevant control treatment (0.8% DMSO).Since antiproliferative effects of parthenolidewere observed in present study, and also its anticancer activities have been reported in a wide range of human cancer cells, it seems that this natural terpenoid derivative could be used, alone or in combination with drugs prescribed for ATLL, in future *in vitro*and *in vivo*studies.