



Apoptotic effect of curcumin and oleanolic acid on human prostate cancer cell line (Du-145)

Simin Rajaeian Honjani, Houri Sepehri, Ladan Delphi

Department of Animal Physiology, School of Biology, College of Science, University of Tehran, Tehran, Iran

Introduction: Prostate cancer is the second most common cause of cancer-related mortality among men. Diet is a critical environmental risk factor in cancer development. curcumin, a yellow pigment derived from the rhizome of herb *Curcuma longa* (turmeric), have numerous therapeutic effects such as anticancer activity. oleanolic acid is a pentacyclic triterpenoid compound with a wide-spread occurrence throughout the plant kingdom and have anti-inflammatory and anticancer activity.

Methods: Androgen-independent human prostate cancer cell line (DU-145) was cultured in RPMI 1640 medium. MTT assay was used to measure cells growth after treatment the cells with curcumin and oleanolic acid for 24h. To investigate apoptosis and identify the cells percent that were arrested in sub-G1 phase, cell cycle distribution was analysed by Flowcytometry.

Results: Our results showed that cells growth were inhibited by curcumin and oleanolic acid. Increasing the number of cells in sub-G1 phase indicated that these cells start to enter to apoptosis. Treatment with the combination of curcumin and oleanolic acid, inhibited cells growth and arrested cells in sub-G1 phase more, compare to curcumin and/ or oleanolic acid alone.

Conclusion: combination of curcumin and oleanolic acid which synergistically induce apoptosis, could inhibit prostate cancer cells growth and could be a good substitution for chemical drugs.

Keywords: Prostate cancer; Curcumin; Oleanolic acid; Apoptosis