

Annual Biotechnology Congress

July 23-24, 2018 | Vancouver, Canada

The anti-cancer properties of crocin and epirubicin on chemosensitive cervical cancer cells

Reyhane Hoshyar, Arash Ghorbani and Homa Mollaei
University of Medical Sciences, Iran

Cervical cancer is still one of the leading causes of death amongst women in the developing countries. Although there are many adopted strategies for declining its symptoms such as surgery, radiotherapy, chemotherapy and their combination following tumor resection, tumor recurrence is usually occurring due to cancer cell resistance to chemotherapy. Also, damaged normal cells are another drawback of these therapies. Hence, today many studies have been accomplished to investigate anticancer characteristics of natural agents such as medicinal plants. Among them, the tumoral properties of crocin on different kinds of cancerous cell lines are interested in many scholars. In this study, the sensitive human cervical cancer cell line (OV2008) was exposed to crocin and epirubicin to investigate the molecular mechanism of this combination. A 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide (MTT) assay revealed that proliferation of sensitive cells (OV2008) was declined by crocin and epirubicin combination at a time- and dose-dependent manner (0-24-48 h). Hoechst staining assay also proved these results and showed that antiproliferative effect of crocin and epirubicin might be due to the induction of apoptosis. Furthermore, up-regulating of Bax and down-regulating of Bcl2 expression lead to achieving the genetic mechanism of crocin-epirubicin apoptosis induction in this cell line. Escalating LDH releases announced that crocin combined with epirubicin had an apoptotic effect on this cancerous cell. Regarding these results, the combination of crocin and epirubicin can play proliferative and apoptotic roles against sensitive cervical cancer cells which may be used as an adjuvant agent for cervical cancer treatment to increase the efficiency of therapy.

Biography

Reyhane Hoshyar is an Associate Professor at Department of Clinical Biochemistry, School of Medicine, Director of Cellular and Molecular Research Center, Director of Health Technology Office, Birjand University of Medical Sciences, Birjand, Iran since 2013. Her field of interest is in Molecular Biology of diseases especially cancer.

hooshyar@bums.ac.ir

Notes: