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Anticancer and apoptotic effects of crocin of saffron and cisplatin on cervical cancer cells

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Cervical cancer is one of the most common cancers among women worldwide. Nowadays, there are tendency to use natural products as alternative therapeutic agents. Anti-tumor effects of crocin as main of saffron carotenoids have been studied in several cancers but its molecular mechanisms of action are not fully understood. In this study, we investigate anti-proliferative and apoptotic activities of crocin combined with cisplatin on cervical cancer cells. To this aim, cell viability and apoptosis assays were monitored by MTT and Hoechst 33258 staining respectively. The mRNA levels of cell cycle (CyclinD1, P21 and P53) and apoptosis (Bax, Bcl-2) related genes were measured by qRT-PCR. Also, we assayed the expression of a microRNA (miR-365) as an upstream regulator of apoptotic genes. Our results showed that crocin in combination with cisplatin significantly ($P<0.05$) inhibited proliferation of cancer cells, induced apoptosis in cells at a dose- and time-dependent manner and decreased the effective dose of cisplatin. Furthermore, in treated cells Bax/Bcl-2 ratio and the mRNA level of P53 and P21 markedly increased ($P<0.05$), whereas expression of CyclinD1 and miR-365 decreased ($P<0.05$). Hence, it is suggested that crocin combined with cisplatin could be potentially used as an effective chemotherapeutic strategy.

Biography

Reyhane Hoshyar is working at the Birjand University of Medical Sciences, Iran. She is also the Member of Executive councilor committee for Food science Research Journal-an international Refereed Research Journal and Member of Executive councilor committee for Asian Journal of Home Science-an international Refereed Research Journal.

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