عنوان مقاله:

Moraea sisyrinchium inhibits proliferation, cell cycle, and migration of cancerous cells, and decreases angiogenesis in chick chorioallantoic membrane

محل انتشار:

مجله علوم پایه پزشکی ایران, دوره 27, شماره 1 (سال: 1403)

تعداد صفحات اصل مقاله: 9

نویسندگان:

Roghayeh Rashidi - *Department of Pharmacology, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran*

Ala Montazeri - *Department of Pharmacology, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran*

Mohammad Soukhtanloo - *Department of Clinical Biochemistry, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran*

Shirin Ghasemian - *Department of Pharmacognosy, School of Pharmacy, Mashhad University of Medical Sciences, Mashhad, Iran*

Mohammad Sadegh Amiri - *Department of Biology, Payame Noor University, Tehran, Iran*

Maede Hasanpour - *Biotechnology Research Center, Pharmaceutical Technology Institute, Mashhad University of Medical Sciences, Mashhad, Iran*

Elham Einafshar - *Department of Pharmacology, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran*

Ahmad Ghorbani - *Department of Pharmacology, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran*

خلاصه مقاله:

Objective(s): Experimental studies reported that some plants in the genus of Moraea (Iridaceae family) show anticancer potential. This study aimed to evaluate the effects of Moraea sisyrinchium on U۸۷ glioblastoma multiforme and HepG۲ liver cancer cells.Materials and Methods: The cells were incubated for ۲۴ hr with hydroalcoholic extract of the stem, flower, and bulb of M. sisyrinchium. Then, the cell proliferation (MTT) assay, cell cycle analysis (propidium iodide staining), cell migration test (scratch), Western blotting (Bax and Bcl-۲ expression), and gelatin zymography (for matrix metalloproteinases, MMPs) were performed. Oxidative stress was evaluated by determining the levels of reactive oxygen species and lipid peroxidation. Angiogenesis was evaluated on chick embryo chorioallantoic membrane.Results: The extracts of the flower, stem, and bulb significantly decreased the proliferation of HepG۲ and U۸۷ cells. This effect was more for U۸۷ than HepG۲ and for the bulb and stem than the flower. In U۸۷ cells, the bulb extract increased oxidative stress, cell cycle arrest, and the Bax/Bcl-۲ ratio. Also, this extract suppressed the migration

ability of HepG۲ and U۸۷ cells, which was associated with the inhibition of MMP۲ activity. In addition, it significantly reduced the number and diameter of vessels in the chorioallantoic membrane. Liquid chromatography-mass spectrometry revealed the presence of xanthones (bellidifolin and mangiferin), flavonoids (quercetin and luteolin), isoflavones (iridin and tectorigenin), and phytosterols (e.g., stigmasterol) in the bulb.Conclusion: M. sisyrinchium bulb decreased the proliferation and survival of cancer cells by inducing oxidative stress. It also reduced the migration ability of the cells and inhibited angiogenesis.

کلمات کلیدی:

Glioblastoma, Hepatocellular carcinoma, HepG۲, Iridaceae, U۸۷

لینک ثابت مقاله در پایگاه سیویلیکا: