

عنوان مقاله:

Acute and Subchronic Toxicity and Cytotoxicity of Saffron Corm Extract

محل انتشار:

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خلاصه مقاله:

Saffron corm is produced annually in large quantities in Iran. It contains some bioactive components like phenolic and antioxidative compounds. We extracted saffron corm by ultrasound-assisted solvent extraction method. The extraction yield and antioxidant properties, free radical scavenging ability, FRAP, and total phenolic compounds (TPC), were determined. To evaluate acute and subchronic toxicity, the extract was administered at three different doses of 1, 10, and 100 mg/kg to BALB/c male mice. Then, the rate of mortality and biochemical parameters such as LDH, ALT, AST, ALP, TG, cholesterol and creatinine were measured after 24 hours and 60 days respectively. Effect of extract on healthy (HFF) and cancerous cells (MCF-7 & HT-29) was evaluated using MTT assay. Results showed that the 40 min ultrasound-assisted extraction method with the highest extraction yield (0.98%), free radical scavenging inhibition (64.37%), and highest FRAP (643.51 $\mu\text{mole/l}$) and TPC (82.23 mg/ml) could be selected as the most active saffron corm extract. According to our animal study after acute and subchronic administration of extract, no significant alteration of the levels of TG, cholesterol, ALP, ALT, AST and creatinine was observed, in mice. Cytotoxicity tests showed that saffron corm extract had no toxic effect on HFF cells, although it had toxic effects on MCF-7 & HT-29 cells. Conclusively, to our data, saffron corm extract had no significant acute and subchronic toxicity on BALB/c mice, and although it had toxic effects on cancer cells no cytotoxicity was seen on normal fibroblast cells.

کلمات کلیدی:

Saffron corm, ultrasound-assisted extraction, Acute toxicity, Subchronic Toxicity, Cytotoxicity

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