عنوان مقاله:

Citrus aurantium L. peel extract mitigates hexavalent chromium-induced oxidative stress and cardiotoxicity in adult rats

محل انتشار:

مجله تحقیقات دارویی و بیومدیک, دوره 3, شماره 2 (سال: 1396)

تعداد صفحات اصل مقاله: 11

نویسندگان:

Mariem Chaabane - *Animal Physiology Laboratory, Department of Life Sciences, Sciences Faculty of Sfax, University of Sfax, BP ۱۱۷۱, ۳۰۰۰ Sfax, T unisia*

Awatef Elwej - *Animal Physiology Laboratory, Department of Life Sciences, Sciences Faculty of Sfax, University of Sfax, BP ۱۱۷۱, ۳۰۰۰ Sfax, T unisia*

Imen Ghorbel - *Animal Physiology Laboratory, Department of Life Sciences, Sciences Faculty of Sfax, University of Sfax, BP ۱۱۷۱, ۳۰۰۰ Sfax, T unisia*

Tahia Boudawara - *Hist opathology Laboratory, University of Sfax, CHU Habib Bourguiba, ۳۰۲۹ Sfax, Tunisia*

Najiba Zeghal - *Animal Physiology Laboratory, Department of Life Sciences, Sciences Faculty of Sfax, University of Sfax, BP ۱۱۷۱, ۳۰۰۰ Sfax, T unisia*

Nejla Soudani - *Unit of P hysiology and Aquat ic Environment, T unis Facult y of Science, University of T unis El Manar, ۲۰۹۲, T unis, Tunisia*

خلاصه مقاله:

In the present study, we aimed to examine the potential protective effect of C. aurantinum L. peel extract against oxidative damage induced by hexavalent chromium in the heart of adult rats. Rats were divided into six groups. Group I served as controls and received standard diet. Group II received via drinking water potassium dichromate ($K_2Cr_2O_7$) alone (۷۰۰ ppm) during ۳ weeks. Groups III and IV were pre-treated for ۱۰ days by gavage with the ethanolic extract of C. aurantium peels at doses of ۱۰۰ and ۳۰۰ mg/kg body weight/day, respectively, and then $K_2Cr_2O_7$ was administrated during ۳ weeks. Groups V and VI received by gavage only C. aurantium peel ethanolic extract at doses of ۱۰۰ and ۳۰۰ mg/kg body weight/day, respectively, during ۱۰ days. $K_2Cr_2O_7$ treatment increased the cardiac levels of malondialdehyde (MDA), protein carbonyls (PCO), advanced oxidation protein products (AOPP), non-protein thiols, glutathione and vitamin C, as well as the activities of catalase, superoxide dismutase and glutathione peroxidase. Cardiac histological alterations, manifested by hemorrhage and cytoplasmic vacuolization, were also observed. Pre-treatment with C. aurantium peel extract (۳۰۰ mg/kg) attenuated significantly the biochemical and histopathological changes observed following $K_2Cr_2O_7$ exposure in rat's heart. Our findings indicated that C. aurantium peel extract was able to hamper $K_2Cr_2O_7$-induced myocardial injury, which could be attributed to its antioxidant activity.

کلمات کلیدی:

Chromium, rats, heart, oxidative stress, c. aurantium peel