

Saffron byproducts as sources of bioactive extracts

Claudio Ferrante

Università degli Studi "Gabriele d'Annunzio", Italy

Abstract

Saffron (*Crocus sativus* L.) has been long described as a protective agent in experimental models of oxidative stress, inflammation and cancer. Multiple studies also revealed the potential application of high quality saffron byproducts as cheap sources of antioxidants. In this context, the aim of the present work was to characterize the phytochemical profile of the whole byproduct fraction, tepal and anther (CTA) water extracts. Additionally, we evaluated CTA effects on reactive oxygen species (ROS) levels and lactate dehydrogenase (LDH) activity on mouse myoblast (C2C12) and human colon cancer (HCT116) cells. The results of the toxicological evaluation indicated that anther extracts were well tolerated by the employed biological models. Particularly, water anther extract did not exert cytostatic, cytotoxic and genotoxic effects in Hs27 cells. Anther extract also revealed to be well tolerated by MCF7 and C2C12 cell lines, in the same concentration range, as showed by the results of viability (MTT) test. Additionally, we tested anther effects on basal and hydrogen peroxide-induced burden of oxidative stress, in both C2C12 and MCF7 cell lines, finding a significant blunting effect induced by the extract on ROS level. Anther extract revealed also effective in blunting LPS-induced levels of pro-oxidant biomarkers such as nitrites and malondialdehyde (MDA), suggesting protective effects in inflamed tissues. Taken together, the decreased tissue levels of nitrites and MDA induced by anther extracts suggest the valorization of saffron anthers, which are usually discarded, as potential protective agents against the increased burden of oxidative stress in inflammatory conditions.

Biography:



The pharmacological research activity of Dr. Claudio Ferrante is focused on the following main research fields: Role of endogenous peptides on food intake and energy expenditure control; Protective effects of medicinal plants and extracts, with particular regards to inflammatory and neurodegenerative diseases; Pharmacology of central monoaminergic system; Optimization of preclinical pharmacological models for the study of the mechanism of action of drugs.

Dr. C. Ferrante is co-author of 84 publications in peer-reviewed international journals. Currently, Dr. Ferrante is also scientific responsible of several projects focusing on the study of the pharmacognostic and pharmacological properties aimed to the valorization of high quality byproducts of *Crocus sativus* (Saffron) and *Cannabis sativa* (industrial hemp).

[25th International Conference on Food and Nutrition Science; Osaka, Japan - September 29-30, 2020](#)

Abstract Citation:

Claudio Ferrante, [Saffron byproducts as sources of bioactive extracts, 25th International Conference on Food and Nutrition Science; Osaka, Japan - September 29-30, 2020.](#)

