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In vivo anti-inflammatory activity and UPLC-MS/MS profiling of the peels and pulps of *Cucumis melo var. cantalupensis and Cucumis melo var. reticulatus*

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The family Cucurbitaceae includes pumpkins, squash, musk melon, watermelons and cucumbers which are known as vine crops. Netted muskmelon or cantaloupe is one of the most widely cultivated cucurbits. *Cucumis melo var. cantalupensis* and *Cucumis melo var. reticulatus* known in Egypt as *Baladi* and French cantaloupe, respectively are the most famous varieties in Egypt. Previous studies have shown that cantaloupe pulp extract possesses high antioxidant and anti-inflammatory properties but nothing was traced about its peels. The objective of the present study is to evaluate the *in vivo* anti-inflammatory activity of the peels and pulps of the two Egyptian varieties of cantaloupe, together with UPLC-MS/MS analysis of their constituents. Pretreatment of rats with the 95% ethanol extract of the pulps and peels of the two varieties at the two dose levels of 25 and 50 mg/kg, significantly inhibit the carrageenan-induced increase in the edema volume of rat paws after three hours, except the low dose levels of the French pulps. Injection of carrageenan into the rat hind paw induced a significant increase in the hind paw prostaglandins (PEG-2), tumour necrosis factor (TNF-α) and interleukins (IL-6 and IL-1β) concentration, three hours after injection, compared with those found after saline injection. Treatment of rats with the tested extracts at both dose levels caused a significant reduction of increased PEG-2, TNF-α IL-6 and IL-1β generation by carrageenan ($P<0.05$). UPLC-MS/MS allowed the identification of 46 phenolic compounds including phenolic acids and flavonoids. It is worthy to note that this is the first report for the chemical and biological study of the peels of *Cucumis melo var. cantalupensis* and *Cucumis melo var. reticulatus.*

Biography

Mai M Raslan has completed her PhD in Pharmacognosy, Faculty of Pharmaceutical Sciences, Cairo University, Egypt in 2011. Now, she works as a Lecturer at the Biotechnology and Life Sciences Department, Faculty of Postgraduate Studies for Advanced Sciences, Beni-Suef University, Egypt. Her research interests focus principally on discovery of natural products from new resources for various pharmaceutical purposes.

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