



VIII Edizione del Meeting

"Nuove Prospettive in Chimica Farmaceutica"

Parma, 9 - 11 Giugno 2014
Starhotel Du Parc

Book degli Abstracts

ANTI-INFLAMMATORY POTENTIAL AND FAST UHPLC-DAD-IT-TOF PROFILING OF POLYPHENOLIC COMPOUNDS EXTRACTED FROM GREEN LETTUCE (*LACTUCA SATIVA* L.; VAR. MARAVILLA DE VERANO)

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Fresh cut vegetables represent a widely consumed food worldwide. Among these, lettuce (*Lactuca sativa* L.) is one of the most popular and accessible on the market. The growing interest for this "healthy" food is related to the content of bioactive compounds, especially polyphenols, that show many beneficial effects. In this study, we report the anti-inflammatory and antioxidant potential of polyphenols extracted from green lettuce (var. Maravilla de Verano), in J774A.1 macrophages stimulated with *Escherichia coli* lipopolysaccharide (LPS) [1]. Lettuce extract significantly decreased reactive oxygen species and nitric oxide release and inducible nitric oxide synthase and cyclooxygenase-2 expression. Moreover lettuce treatment also enhanced the cytoprotective heme-oxygenase-1 enzyme expression thus contributing to its beneficial effect during inflammation. Furthermore, a detailed quali/quantitative profiling of the polyphenolic content was carried out through a fast and accurate ultra high performance liquid chromatography-ion-trap-time of flight mass spectrometer (UHPLC-IT-TOF) platform [2]. In the extracts, hydroxycinnamic acid derivatives and flavon-3-ols were the most abundant compounds. The method showed fast separation (10 min), together with satisfactory retention time and peak area repeatability, with maximum RSD % values of 0.80 and 8.68, respectively, as well as good linearity ($R^2 \geq 0.999$) and mass accuracy (≤ 5 ppm).

References

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