

RED GRAPE SKIN EXTRACTS: CHARACTERIZATION AND ANTI-INFLAMMATORY EFFECT

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Polyphenols are abundant micronutrients in human diet. Among other effects these compounds are important for their antioxidant and anti-inflammatory properties and these beneficial health effects in humans have been reviewed. The amount of compounds in foods and beverages, the quantities consumed regularly and the bioavailability of compounds are the main factors responsible for health effects.

The aim of the present work was to characterize compounds in red grape skin extracts and to study their anti-inflammatory properties.

Methanolic extracts were analysed by LC and a mass spectrometry system with an LCQ ion trap mass spectrometer equipped with an atmospheric pressure chemical ionization (APCI) source was used in conditions previously optimized [1,2]. Separations were performed at 35°C with a C18 column with a flow rate of 700 μLmin^{-1} and the mobile phase consisted of a gradient mixture of formic acid 0.5% and formic acid:acetonitrile:water.

In figure are shown chromatograms obtained when an extract was analysed by LC- DAD and MS. Some compounds in figure were identified comparing

results with spectra obtained in the analysis of standard solutions or data from literature.

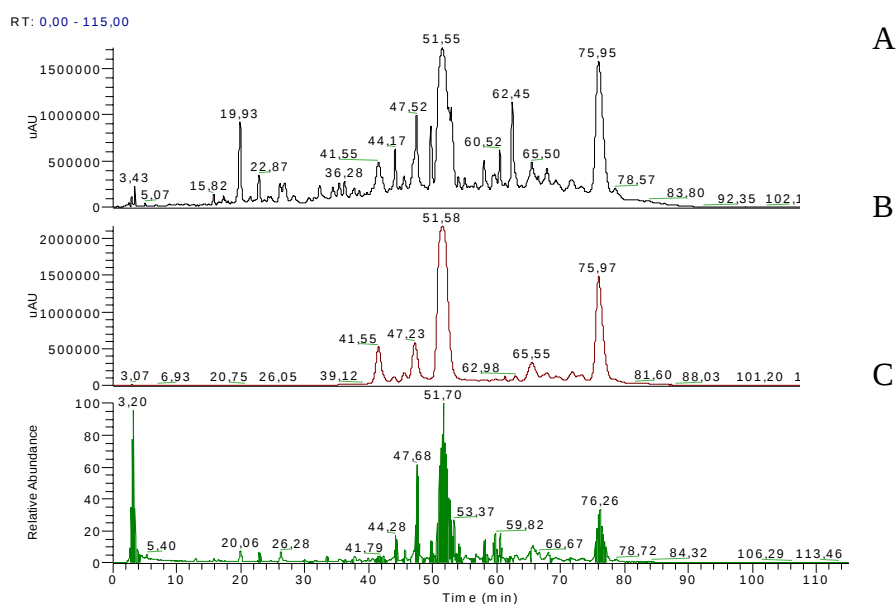


Figure. Chromatograms of red grape skin extract: A) Absorbance at 280nm; B) Absorbance at 520nm; C) TIC MS

In order to verify the effect of the product on the inflammatory process, we used an experimental model of inflammation *in vivo*: the paw edema induced by carrageenan. Wistar male rats drank, during 20 days, water supplemented with grape skins extracts (150mg/day/rat). The effect of the extract on the edema formation was assessed by peltysmography.

Results presented as mean $\pm$ SEM of the percentage of the increase observed in paw volume were compared by one-way ANOVA followed by Bonferroni's post-test. Differences were considered statistically significant when $p < 0.05$. Comparison of control group ($n=7$) and treated group ($n=5$) did not reveal significant decrease in paw volume (60 ± 5.2 vs 55.96 ± 4.37).

References

- [1] Sandra Silva *et al.*, *Ciência T c. Vitiv.* 20 (1), 17-33, 2005.
- [2] M.N. Bravo *et al.*, accepted for publication, *Analytica Chimica Acta*, 2005.