

Title: **Characterization of the overall polyphenolic content and the antioxidant capacity of sparkling wines by spectrophotometry and liquid chromatography.**

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This project enrolled different analytical techniques in order to characterize sparkling wines or "cavas" by its antioxidant capacity, chemical property mainly attributed to its polyphenolic content.

Chronic diseases increase its prevalence day by day in our society and many of these are caused by oxidative stress, an accumulation of oxygen free radicals which deteriorate cells and biological systems. These free radicals can be counteracted by molecules with antioxidant capacity, as polyphenols.

Polyphenols are natural antioxidants presents in plants, fruits, vegetables and cereals. They have become one of the most interesting phytochemical by scientific community, due to its antioxidant capacity. Reliable and simple methods to determine this content are important.

Different methodologies are investigated in this project, including those for measuring the total antioxidant capacity such as FRAP (Ferric-Reducing Antioxidant Power) and Folin-Ciocalteu assays, which are spectrophotometric methods that measure a product obtained by a redox reaction. Besides the total polyphenolic content of cava are analysed by HPLC.

Results obtained by different methods were compared. Only cava tendencies could be drawn but no correlation was shown in any case due to their polyphenolic content was not enough different to observe a linear dispersion of results.

Keywords: Cava, polyphenols, antioxidant, FRAP, Folin-Ciocalteu, HPLC.