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BOOK OF ABSTRACTS

PB 8

PROTEIN-PHENOLIC INTERACTION AS A STRATEGY TO REDUCE THE PRECURSORS OF VOLATILE PHENOLS IN WINE

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In the present work, the interaction between phenolic acids (caffeic acid, *p*-coumaric acid and ferulic acid) and proteins was studied as a potential strategy to reduce the content of the precursors of volatile phenols in wine. These phenolics result from the contamination of the wine by *Brettanomyces bruxellensis* causing a wine defect often referred as the "*Brett character*" [1]. In this context, the aim of the present work is the development of a biological strategy, in which the precursors can be removed from the wine or otherwise be rendered unreactive and for that reason be unavailable for conversion into volatile phenols.

Due to their possible beneficial effects on human health, the interaction of proteins with plant-derived phenolic compounds has been an object of study [2]. This interaction can be studied using a fluorescence quenching approach [3], which has been widely employed to characterise the biochemical interactions between these types of molecules.

Bovine serum albumin (BSA) was used as a model protein and the fluorescence of the protein was measured in the absence and in the presence of the quencher - the phenolic acid. This protein-phenolic interaction can be affected by some environmental conditions, such as medium composition, pH, temperature, and protein concentration [2, 4]. The effect of the environmental conditions on the interaction between BSA and caffeic, coumaric and ferulic acids was evaluated by the determination of the binding parameters, Ka and n, where Ka is the binding constant and n is the number of binding sites per phenol/protein. Higher values were obtained for the interaction of caffeic acid with BSA.

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