

A new class of anthocyanin-procyanidin condensation products detected in red wine by electrospray ionization multi-stage mass spectrometry analysis

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ABSTRACT

In our previous work, we have identified, in a model wine solution containing malvidin 3-glucoside, epicatechin and acetaldehyde, a new condensation product - hydroxyethyl-malvidin-3-glucoside-ethyl-epicatechin. The objective of this work was to verify the presence of such new condensation products in red wine. For this purpose, red wine was fractionated into various fractions by column chromatography on LiChroprep RP 18 and on Toyopearl 40 (F). The phenolic composition of each fraction was verified by HPLC-DAD and direct-infusion ESI-MSⁿ analysis. In addition to the well-known anthocyanins and their acetyl and coumaroyl derivatives, and several direct and indirect anthocyanin-(epi)catechin condensation products, a new class of pigmented products, namely hydroxyethyl-anthocyanin-ethyl-flavanol compounds, have been detected in red wine. The new class of pigmented products would be expected to be the major pigments responsible for the color of aged red wine. Copyright © 2010 John Wiley & Sons, Ltd.

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