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## Nutraceutical evaluation of red wines from 'Campanha Gaúcha' by a Feasible HPLC-DAD method for bioactive polyphenols

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New viticulture regions, like 'Campanha Gaúcha' (CG) in Rio Grande do Sul, State of Brazil, need tools for elaboration of wines with high levels of nutraceutical compounds, like bioactive polyphenols (BP). HPLC-DAD has been used for BP determinations<sup>1</sup>. This work proposes a fast HPLC-DAD method, without exhaustive manipulation of sample, for the analysis of seven BP (*trans*-resveratrol, quercetin, viniferin, rutin, kaempferol, myricetin and cinnamic acid) in red wines from CG. Tests were conducted with red wines from experimental winemaking using 12 grape varieties (Arinamowa, Barbera, Cabernet Sauvignon, Francoria, Lambrusco, Malbec, Moscato de Hamburgo, Rebo, Sangiovese, Syrah, Teroldego and Tempranillo). Samples were passed through a 0.45 µm PVDF filter. The chromatographic separations were performed by a C8 column (150 x 4.6 mm, 5 µm), gradient elution (water and methanol, with formic acid), and flow rate of 1.0 mL.min<sup>-1</sup>. Each elution was carried out in 30 min. DAD was set accordingly to the UV/Vis maximum wavenumber for each analyte. Peaks of the sample analytes were comparable with standard profiles, considering purity (95%), retention time (±5%) and UV/Vis spectra. Standards were added to samples in order to check matrix effect and identities were confirmed. Linearity was determined by three calibration curves for each analyte (*r* 0.99). The range was from 1.0 or 5.0 mg.L<sup>-1</sup>, and depending on the analyte, to 40.0 mg.L<sup>-1</sup>. *Trans*-resveratrol, quercetin, myricetin and rutin were constituents of all evaluated samples, with highest values in Syrah, Malbec, Lambrusco and Cabernet Sauvignon. Kaempferol and viniferin were found in almost all samples, in special Syrah and Cabernet Sauvignon, respectively. Cinnamic acid was only present in Lambrusco. HPLC-DAD developed method is a potential tool to BP determinations, enabling nutraceutical evaluations in red wines. The method is able to analyze seven BP by direct injection of red wines from CG, contributing for wine elaborations from the referred region.

**Key Words:** Polyphenol, Nutraceutical, Wine, 'Campanha Gaúcha'

<sup>1</sup>Silva C.L. et al. 2011. *Talanta*, 86, 82-90.