

HPLC- ESI-Q TRAP-MS/MS analysis of flavonoids and nonflavonoids in red wine

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In this study, a high performance liquid chromatography (HPLC) coupled to tandem mass spectroscopy (MS/MS) operated in electrospray ionization (ESI) and quadrupole linear ion trap (Q TRAP) negative mode was applied for simultaneous determination of nonflavonoids and flavonoids in Kratošija red wine. A total of 27 phenolic compounds, including 13 nonflavonoids (10 phenolic acids, 2 stilbenes and 1 stilbenoid) and 14 flavonoids (6 flavan-3-ols, 4 flavonols, 2 flavones, 1 flavanone and 1 flavanoneol) were identified within 55 minutes by using a Phenomenex Luna C18(2) column (3 μm , 100 \AA , 100 x 2 mm), with flow rate at 0.2 mL/min, column temperature at 30°C and a gradient elution system of 8 mM formic acid in water (eluent A) at pH 2.8 and acetonitrile (eluent B). The relative amounts of phenolic compounds were calculated as areas of the ion extracted peaks of the individual compounds in wine. Gallic acid was the dominant phenolic acid, followed by *p*-coumaric and syringic acids. Resveratrol-3-glucoside (piceid) was present in highest amount compared to resveratrol and viniferin. From the group of flavonols, myricetin was the dominant component and from flavan-3-ols, procyanidins B1 and B3 dominated in wine. Flavones chrysin and luteolin, flavanone naringenin and flavanoneol taxifolin were reported for the first time in Macedonian red wine.

Key words: flavonoids, nonflavonoids, HPLC- ESI-MS/MS, Kratošija red wine.

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