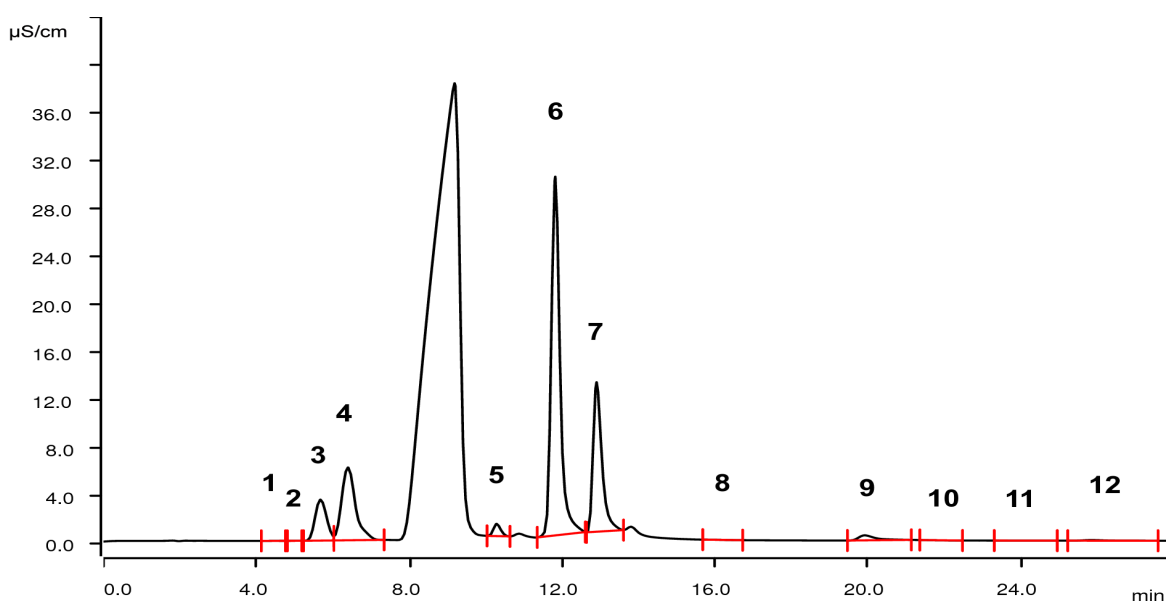


Biogenic amines besides other cations in red wine applying a high-pressure gradient



Biogenic amines are released during the winemaking process. In wine, they are present as odorless salts. However, in the mouth their flavor is partially liberated, influencing the appearance for the wine taste. Besides this, biogenic amines have been related to lack of hygiene or poor manufacturing practices. The biogenic amines are determined applying suppressed cation chromatography.

Results

Cation	Conc. [mg/L]	RSD [%, n=3]	Cation	Conc. [mg/L]	RSD [%, n=3]
1 Lithium	n.q.	-	7 Calcium	106.3	3.3
2 Sodium	n.q.	-	8 PEA*	n.d.	-
3 Ammonium	25.7	3.0	9 Putrescine	24.4	2.6
4 MMA*	106.1	3.0	10 Cadaverine	n.d.	-
5 TEA*	46.7	2.8	11 Histamine	n.d.	-
6 Magnesium	153.1	3.1	12 Serotonin	5.1	4.4

* MMA = monomethylamine; TEA = trimethylamine; PEA = 2-phenylethylamine; n.d. = not detected; n.q. = not quantified

Sample

Red wine

Sample preparation

Dilution 12.5 : 1 with ultrapure water.

Columns

Metrosep C Supp 1 - 150/4.0	6.1052.420
Metrosep C Supp 1 Guard/4.0	6.1052.500

Solutions

Eluent A	2.5 mmol/L nitric acid 100 µg/L rubidium
Eluent B	25 mmol/L nitric acid 100 µg/L rubidium
<u>Suppressor regenerant</u>	70 mmol/L sodium carbonate 70 mmol/L sodium hydrogen carbonate
Rinsing solution	STREAM

Parameters

Flow rate	1.0 mL/min
Injection volume	100 µL
P _{max}	15 MPa
Recording time	28 min
Column temperature	40 °C

Instrumentation

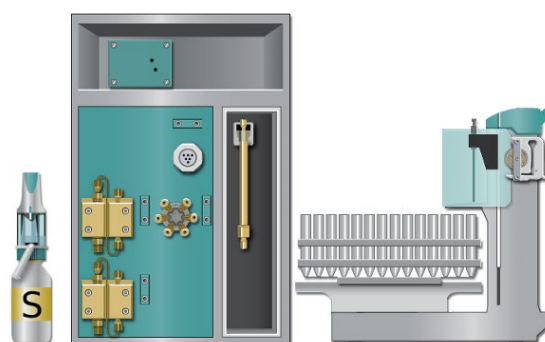
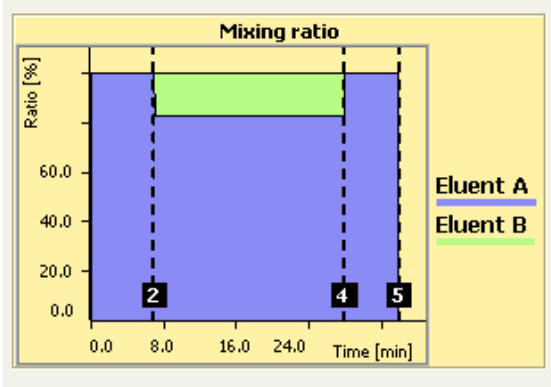
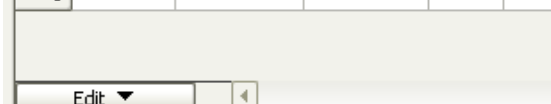
940 Professional IC Vario ONE/SeS/HPG	2.940.1440
IC Conductivity Detector	2.850.9010
919 IC Autosampler plus	2.919.0020
800 Dosino (Dosino regeneration)	2.800.0010
MSM-HC Rotor C	6.2842.200
IC equipment: Dosino regeneration	6.5330.190

Analysis

Conductivity detection after sequential suppression

Gradient

	Time [min]	Eluent A [%]	Eluent B [%]	Curve	Flow
▶ 1	Start	100	0		1.0
2	7.0	83	17	Step	1.0
3	27.9	83	17	Linear	1.0
4	28.0	100	0	Step	1.0
5	34.0	100	0	Linear	1.0
6					



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