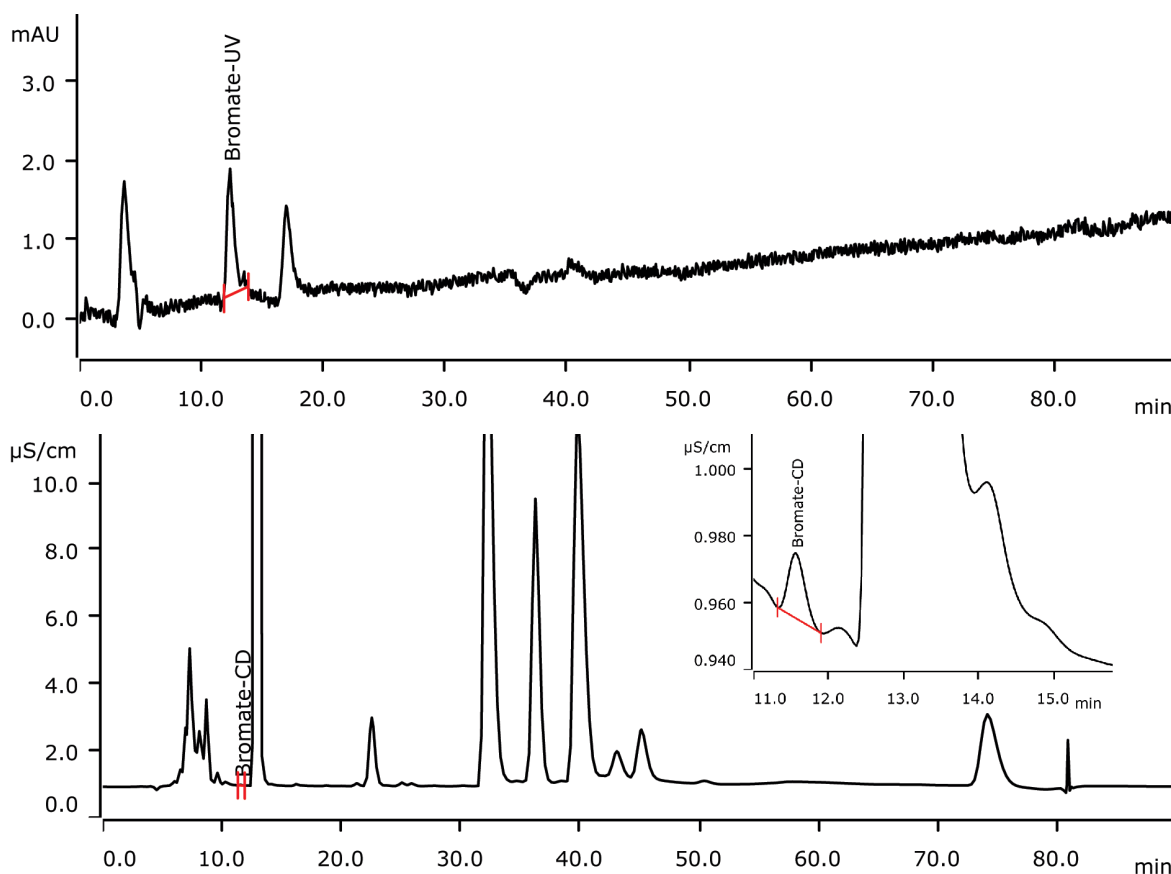


# Bromate in flour applying Inline Dialysis and conductivity as well as UV/VIS detection after PCR



Potassium bromate is used as a flour improver. The analysis of the carcinogen bromate in flour requires extraction and additional sample preparation. In this application, Inline Dialysis is used after sonication and centrifugation of the extraction mixture. Bromate is detected by suppressed conductivity and UV/VIS after post-column reaction.

## Results

| n = 5   | spiked   | Recovery (CD) | Recovery (UV) |
|---------|----------|---------------|---------------|
| Bromate | 50 µg/kg | 82%           | 110%          |

## Sample

Flour (25 g extracted in 250 mL ultrapure water)

## Sample preparation

Extraction suspension is sonicated, centrifuged and subsequently injected after Inline Dialysis

## Columns

|                               |            |
|-------------------------------|------------|
| Metrosep A Supp 7 - 250/4.0   | 6.1006.630 |
| Metrosep A Supp 4/5 Guard/4.0 | 6.1006.500 |

## Solutions

|                       |  |
|-----------------------|--|
| Eluent                | 3.6 mmol/L sodium carbonate  |
| Transfer solution     | Ultrapure water  |
| Post-column reagent 1 | 1 mol/L sulfuric acid<br>100 µmol/L ammonium heptamolybdate tetrahydrate |
| Post-column reagent 2 | 0.5 mol/L potassium iodide   |
| Suppressor regenerant | 100 mmol/L sulfuric acid   |
| Rinsing solution      | Ultrapure water  |

## Analysis

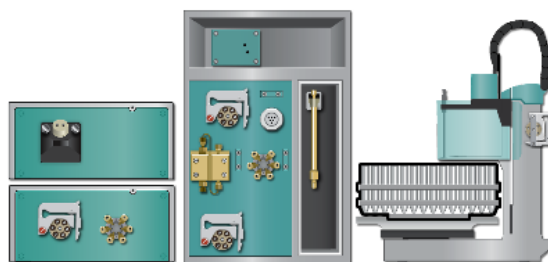
Conductivity detection after sequential suppression and UV/VIS detection after post-column reaction

## Instrumentation

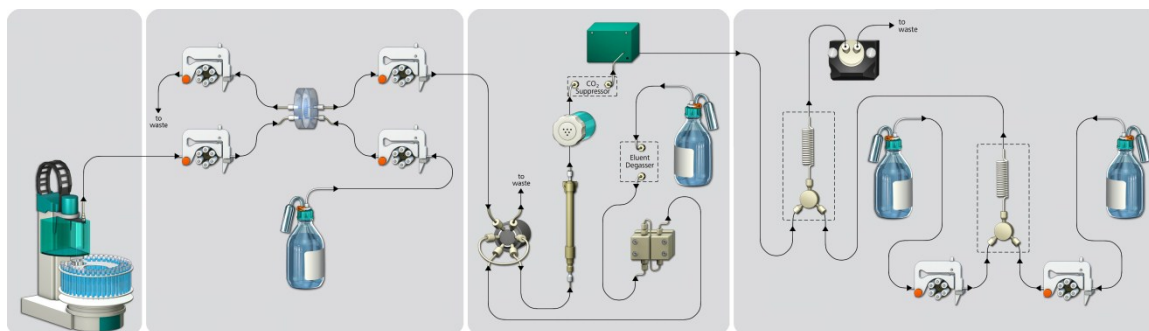
|   |            |
|---|------------|
| 940 Professional IC Vario ONE/SeS/PP/Prep 1 | 2.940.1510 |
| 944 Professional UV/VIS Detector Vario      | 2.944.0010 |
| 942 Extension Module Vario Prep 2           | 2.942.0020 |
| 858 Professional Sample Processor           | 2.858.0020 |
| Reactor complete                            | 6.2845.200 |
| MSM Rotor A                                 | 6.2832.000 |
| Adapter sleeve for Suppressor Vario         | 6.2842.020 |

## Parameters

|                    |             |
|--------------------|-------------|
| Flow rate          | 0.65 mL/min |
| Flow rate PCR 1    | 0.2 mL/min  |
| Flow rate PCR 2    | 0.2 mL/min  |
| Injection volume   | 100 µL      |
| P <sub>max</sub>   | 15 MPa      |
| Recording time     | 90 min      |
| Column temperature | 45 °C       |
| PCR temperature    | ambient     |
| Wavelength         | 352 nm      |



## System setup:



[www.metrohm.com](http://www.metrohm.com)

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