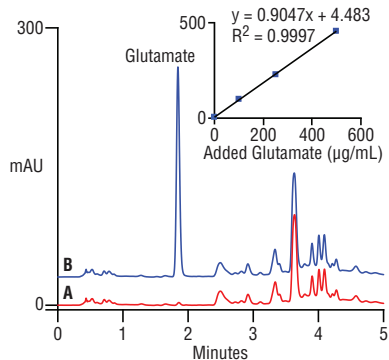


Glutamate in Beer by Automated Precolumn OPA Derivatization



Column: Thermo Scientific™ Acclaim™ PA C16, 5 µm, 4.6 × 50 mm
Pump: Thermo Scientific™ Dionex™ Summit P680A
Mobile Phases: (A) Methanol
(B) 20 mM phosphate, pH 7.0
Gradient Times: 0.0 2.0 3.0 5.0 5.1 6.5
%A: 10 30 75 75 10 10
%B: 90 70 25 25 90 90
Flow: 1.5 mL/min
Temperature: TCC100 thermostat at 30 °C
Injection: ASI-100 autosampler; 20 µL
Detector: UVD 340U; UV at 330 nm and spectra 200–400 nm
Samples: (A) Beer
(B) Beer + 250 µg/mL glutamic acid
Derivatizing Conditions
Reagents: (A) 2 mg/mL *o*-phthalaldehyde in 0.5M borate buffer, pH 10.4
(B) 6 mg/mL (CH₃)₂NCH₂CH₂SH HCl in water
Program: 75 µL reagent A + 75 µL reagent B + 15 µL sample, mixed in round-bottom glass vial
Reaction Time: 5 min at room temperature

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Glutamate is naturally present in low concentrations in beer, and is also a legal flavor additive in some jurisdictions. This assay is quick, selective and automates all the sample preparation. The Acclaim PolarAdvantage (PA) column provides high resolution even in a complex sample.