

Amphetamines

Limit of Detection* : 10 ng/ml

Application note Ref : AN 068

Routine analysis of common designer drugs is a major concern in doping control, surveillance of drug substitution, clinical toxicology, as well as forensic science. Method sensitivity is often an issue since many drugs possess a high volume of distribution, resulting in low concentration levels. Capillary electrophoresis (CE) hyphenated with laser-induced fluorescence (LIF) can be a useful tool for determining such substances, especially when small sample are available. Analysis of ten amphetamine derivatives was performed by CE-LIF at 410 nm and very low limits of detection were obtained.

Limit of Detection* : 10 ng/mL, i.e., 48-74 nM depending on the considered molecule

* Estimated for a S/N of 3

	CE-LIF	CZE-DAD 200nm
LOD	10 ng/ml	200 ng/ml

Instruments :

Capillary electrophoresis : Agilent CE

Detector : Picometrics ZETALIF detector
 Laser : Diode laser, 410 nm, 15 mW or He-Cd laser, 442 nm, 40 mW

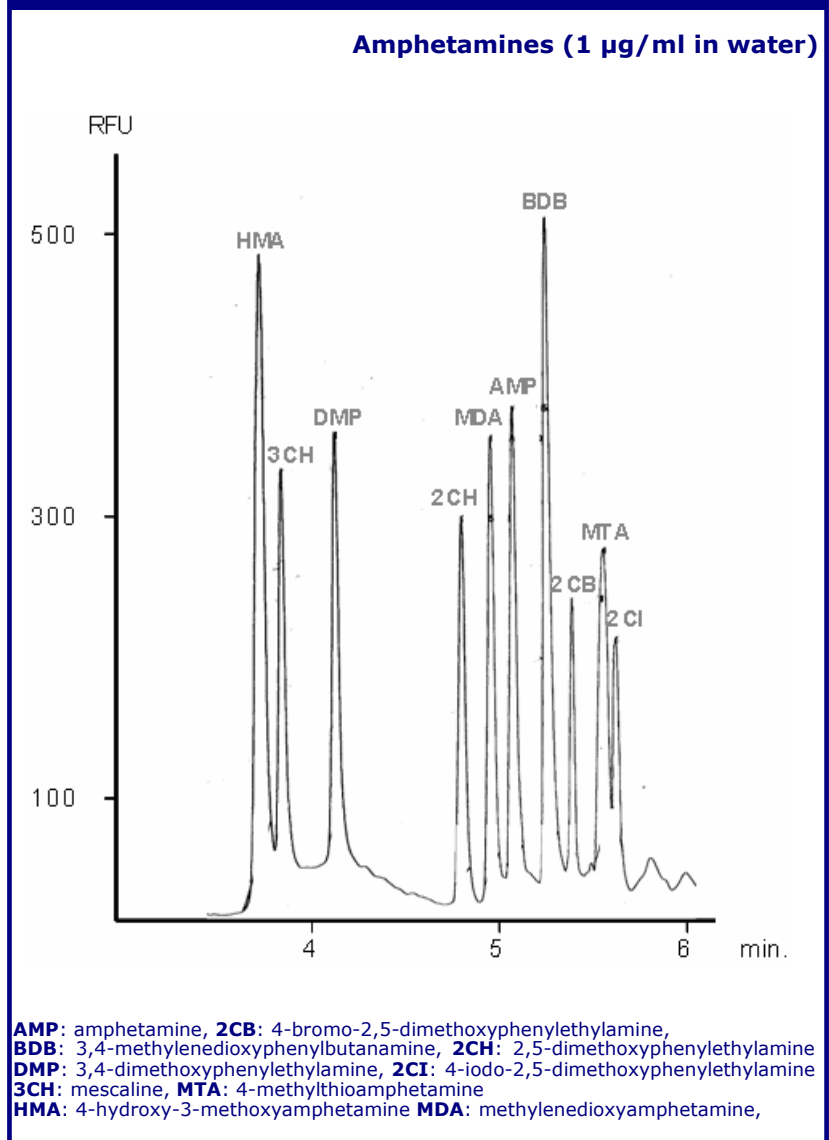
Sample : Standard solution of amphetamines derivatives in water

Reagents : Derivatization agent : Naphthalene Dicarboxaldehyde (NDA)

Methods :
Capillary : 50 µm ID, 43 cm effective length
Buffer : borate 10 mM (pH 9.5), SDS 30 mM, ACN 10 %
Injection : 40 mbar, 7 s (estimated injected volume = 9 nL)
Voltage : 30 kV
Rise time : 0.5 s
PMT : 650 V

For complete experimental details, please contact Picometrics

CE-LIF 410nm electropherogram of 10 amphetamine derivatives



Source and acknowledgment:

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