

Technical Notification 0010

Drugs of Abuse LC-MS/MS Screening (2)

Column comparison: Dr. Maisch HPLC GmbH
Reprospher C8 1.8 µm, 50 mm x 2.0 mm
(P/N: rs118.8e.s0502)

vs.

Phenomenex
Kinetex C8 2.6 µm, 50 mm x 2.1 mm
(P/N: 00B-4497-AN)

In this application 2 similar modified Alkyl-phases (C8; neutral end-capping; core-shell PHE / fully-porous silica Dr. Maisch) were compared for the screening of different drugs and drugs of abuse in real urine samples (general unknown screening).

ID No.: 0010

Analytes:

- 1) Urine Sample 1 (internal standard)
- 2) Urine Sample 1
- 3) Urine Sample 2 (internal standard)
- 4) Urine Sample 2

Eluent A: H₂O + 0.1% Formic Acid

Eluent B: ACN + 0.1% Formic Acid

Elution Type: Gradient

Gradient Method:

Time program for gradient (binary high-pressure pumps):

Time [min]	Flow Rate [µl/min]	%B	Comments
0.00	350	2.5	Start MS and pumps
1.00	350	2.5	Start gradient
8.00	350	97.5	N/A
12.00	350	97.5	N/A
12.10	350	2.5	N/A
15.00	350	2.5	End of program

Flow Rate: 350 ml/min

Temperature: 30 °C

Injection: 2.5 µl

MS Parameters: AB SCIEX TripleTOF™ 5600 (Full Scan and MS/MS in Swath Mode)

Ionization: Positive Electrospray Ionization

Spray Voltage: 5000 V

Temperature: 650 °C

Gas 1: 50

Gas 2: 50

Curtain Gas: 50

Collision Gas: 12

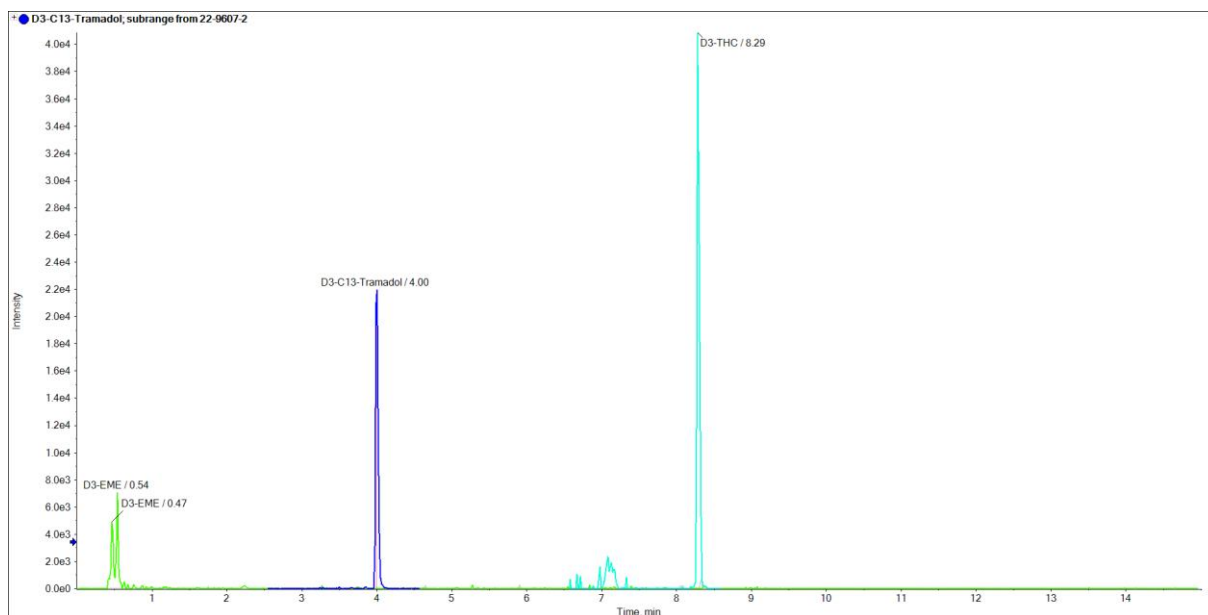
NOTE: MS/MS conditions tuned for each compound separately.

Simultaneous determination of drugs and drugs of abuse:

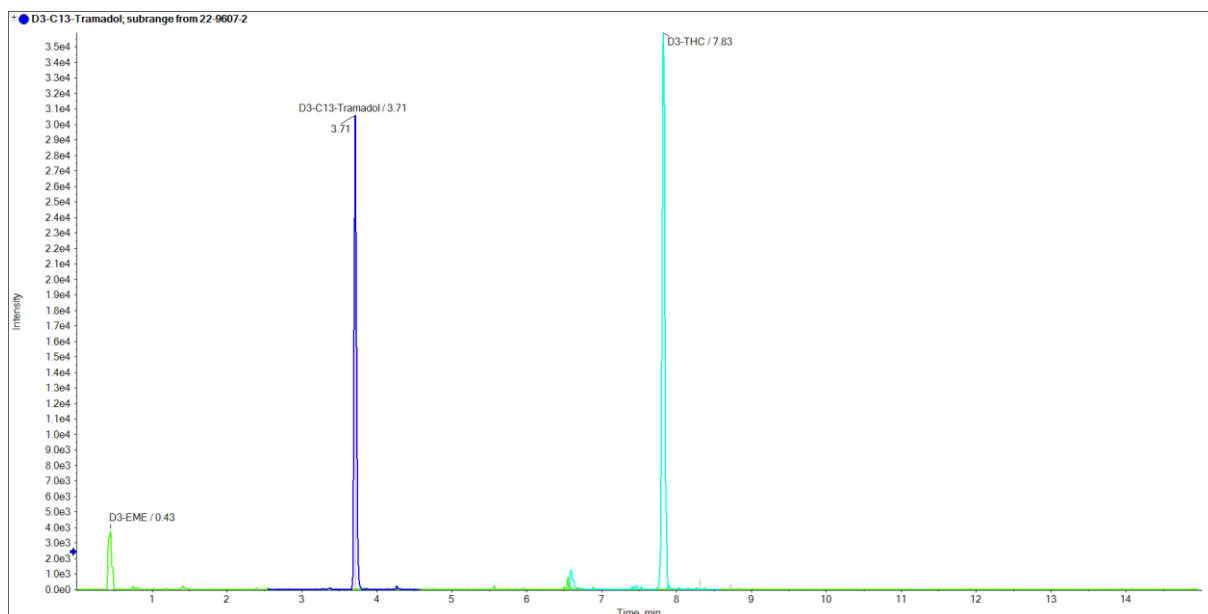
- D3-EME used as internal standard
- D3C13-Tramadol used as internal standard
- D3-THC used as internal standard
- During the screening the following compounds were identified:
- Urine Sample 1: diazepam and its metabolite nordiazepam, clonazepam and its metabolite 7-Aminoclonazepam and THC-COOH (metabolite of THC).
- Urine Sample 2: methadone its metabolite EEDP, trazodone, paroxetine and caffeine.

1) Urine Sample 1 (internal standard)

Reprospher C8 1.8 μ m, 50 mm x 2.0 mm - Dr. Maisch HPLC GmbH

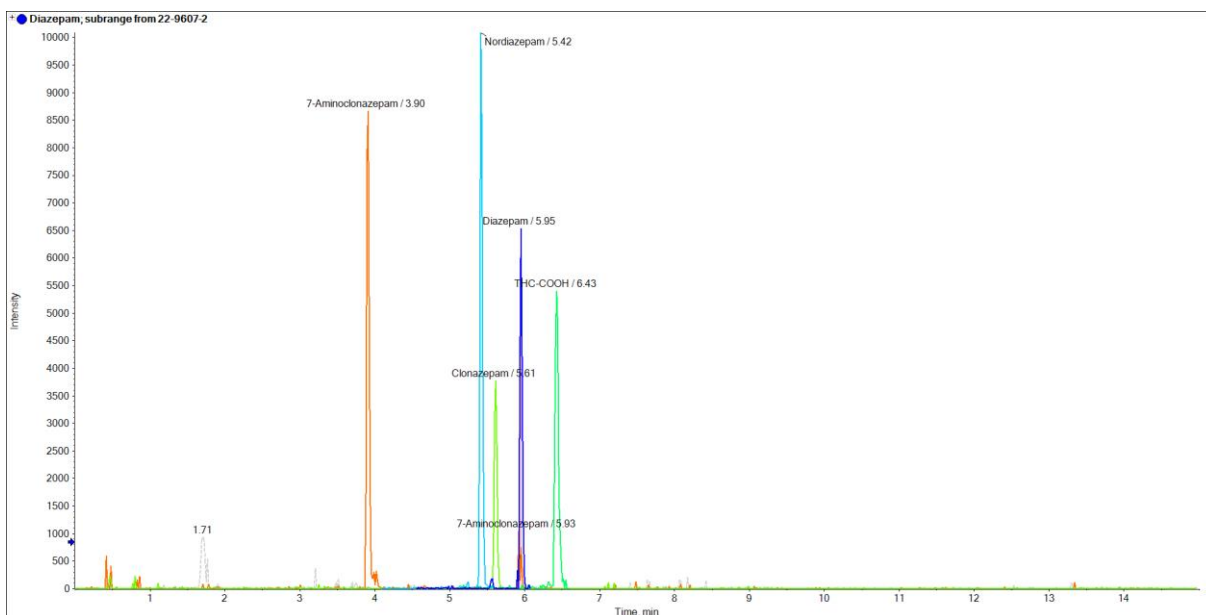


Kinetex C8 2.6 μ m, 50 mm x 2.1 mm - Phenomenex

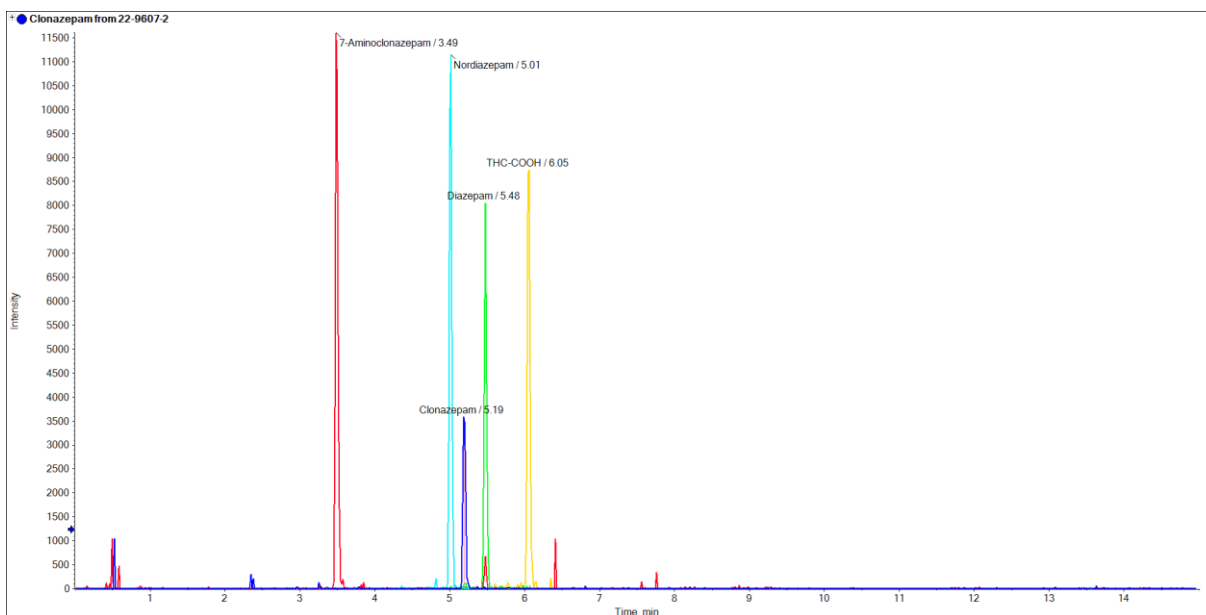


2) Urine Sample 1

Reprospher C8 1.8 µm, 50 mm x 2.0 mm - Dr. Maisch HPLC GmbH

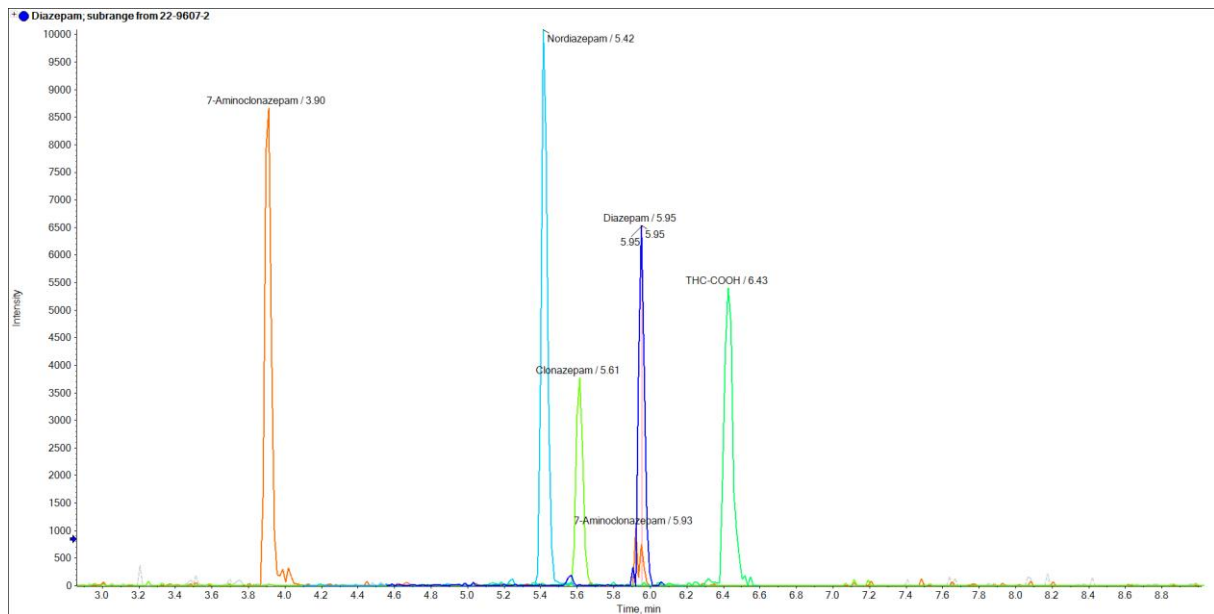


Kinetex C8 2.6 µm, 50 mm x 2.1 mm - Phenomenex

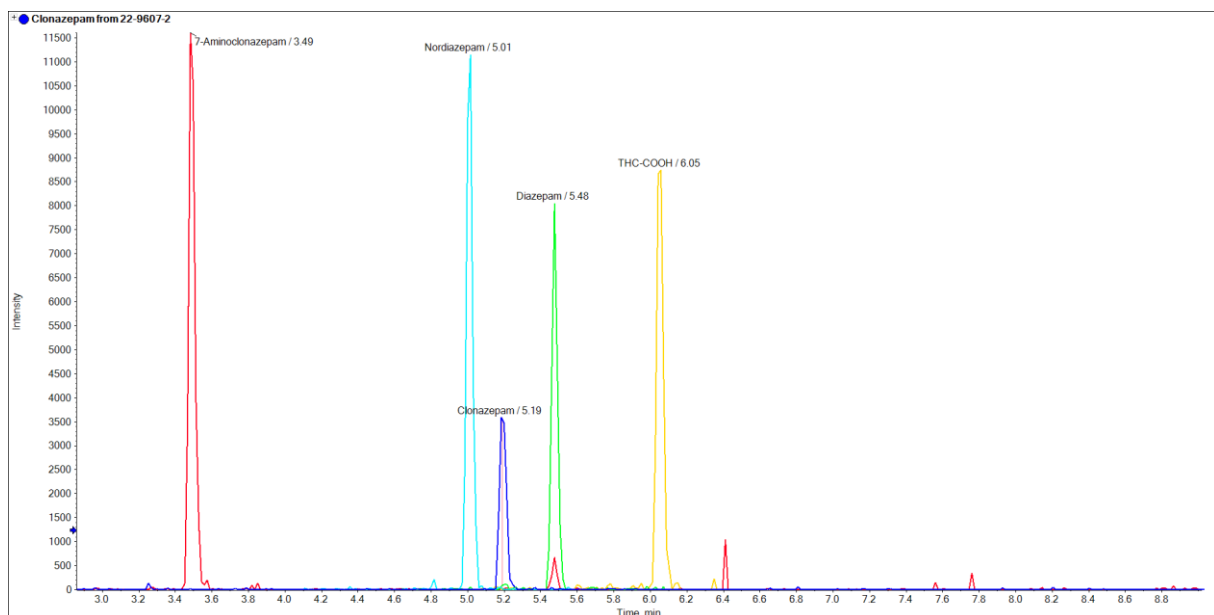


3) Urine Sample 1 (Zoom)

Reprospher C8 1.8 μ m, 50 mm x 2.0 mm - Dr. Maisch HPLC GmbH

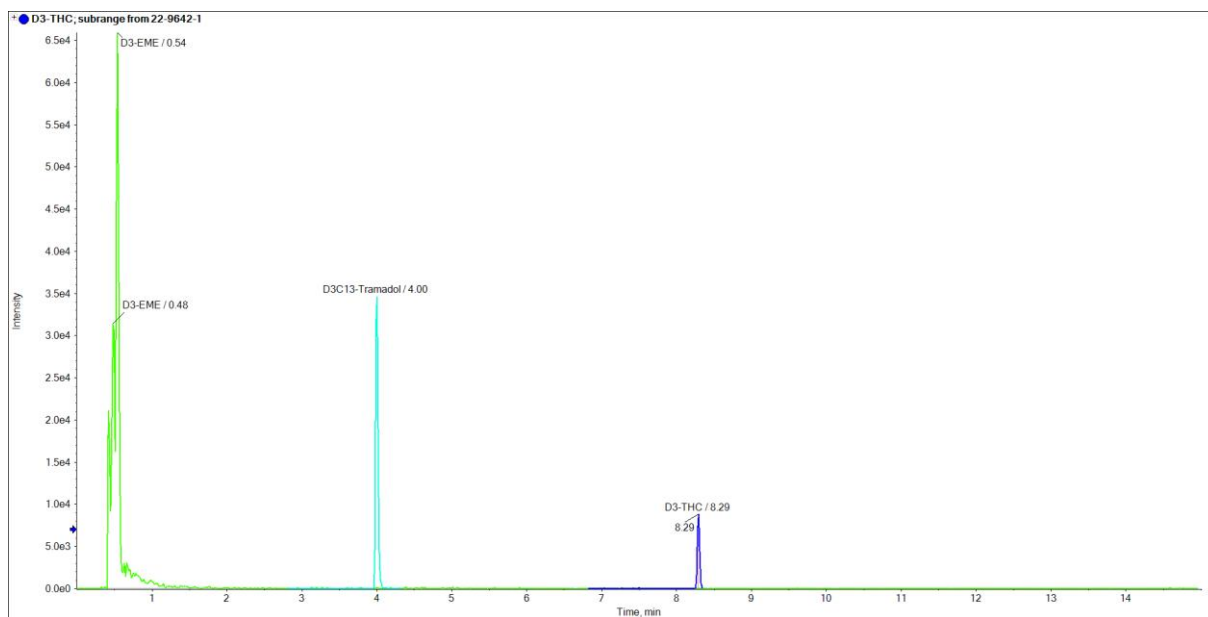


Kinetex C8 2.6 μ m, 50 mm x 2.1 mm - Phenomenex

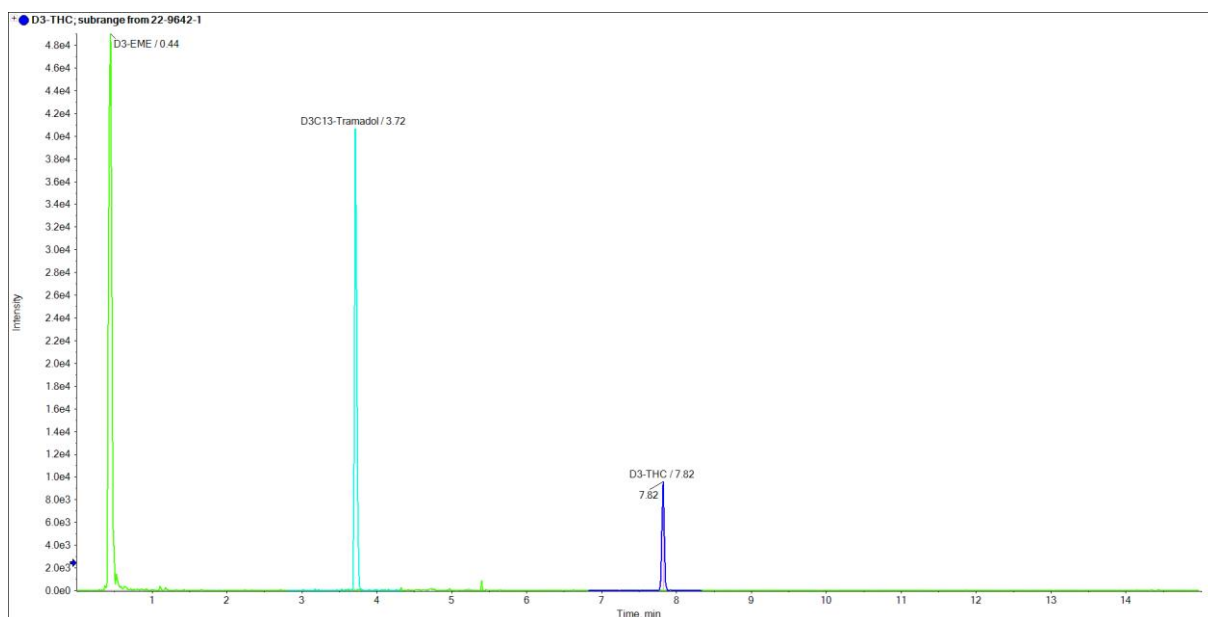


4) Urine Sample 2 (internal standard)

Reprospher C8 1.8 μ m, 50 mm x 2.0 mm - Dr. Maisch HPLC GmbH

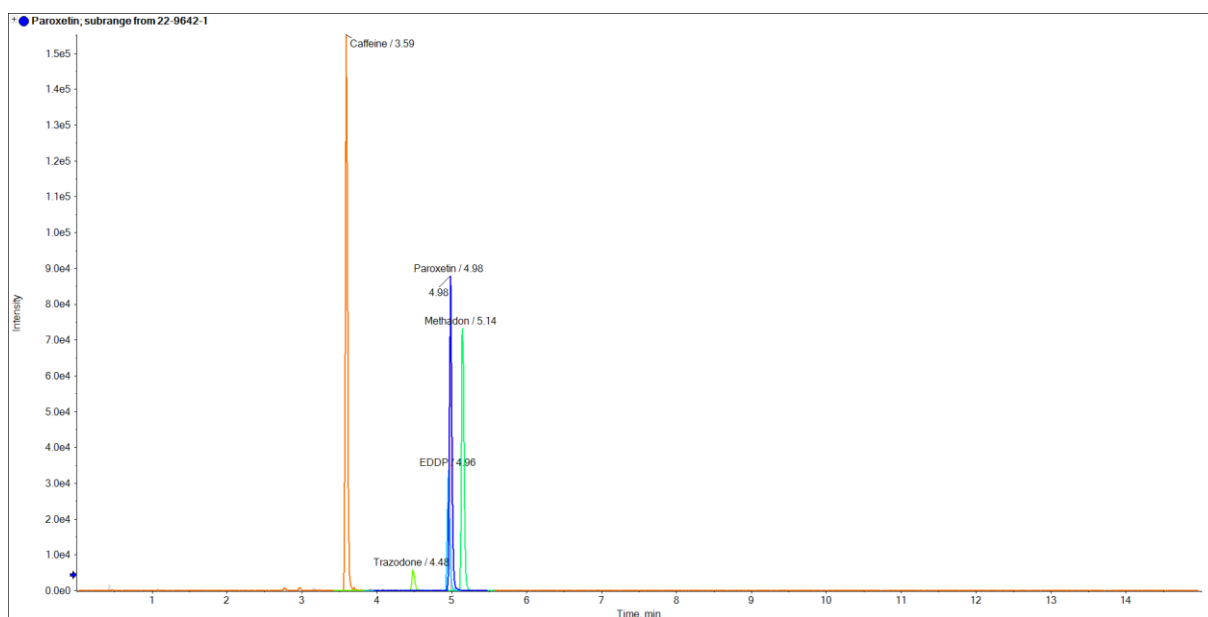


Kinetex C8 2.6 μ m, 50 mm x 2.1 mm - Phenomenex

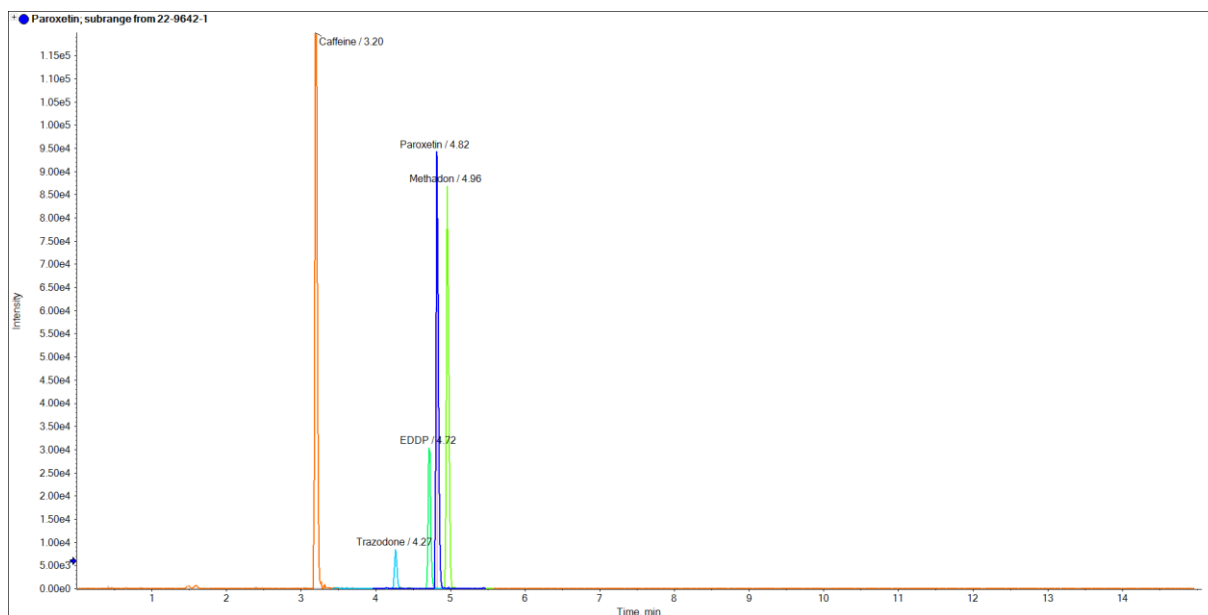


5) Urine Sample 2

Reprospher C8 1.8 μ m, 50 mm x 2.0 mm - Dr. Maisch HPLC GmbH

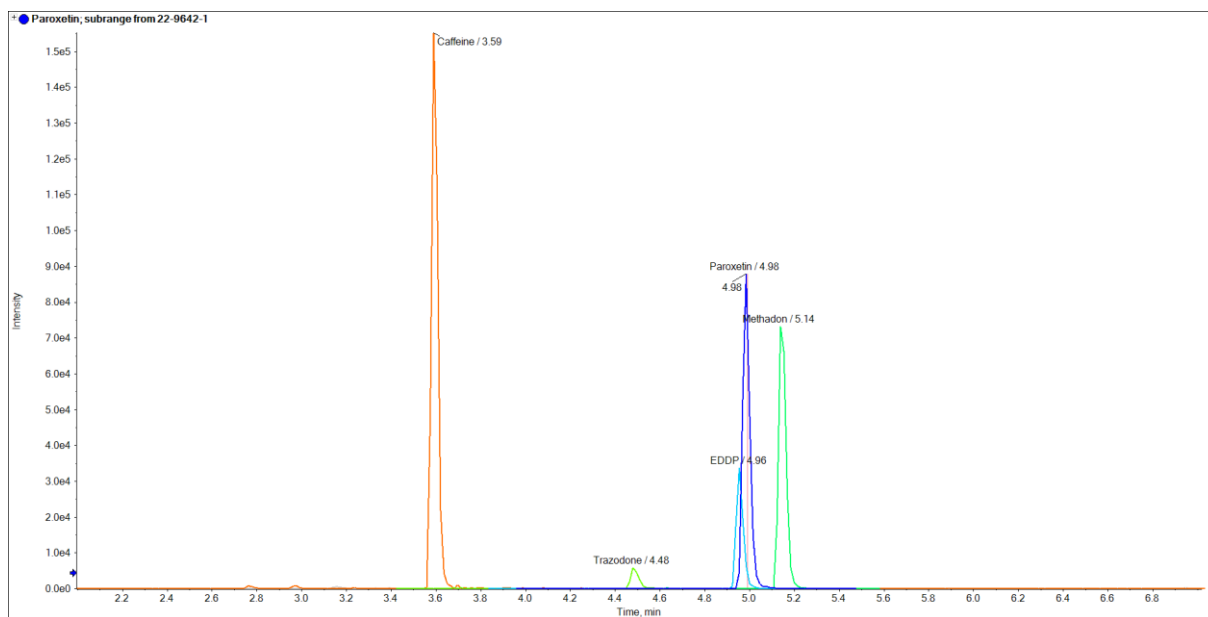


Kinetex C8 2.6 μ m, 50 mm x 2.1 mm - Phenomenex

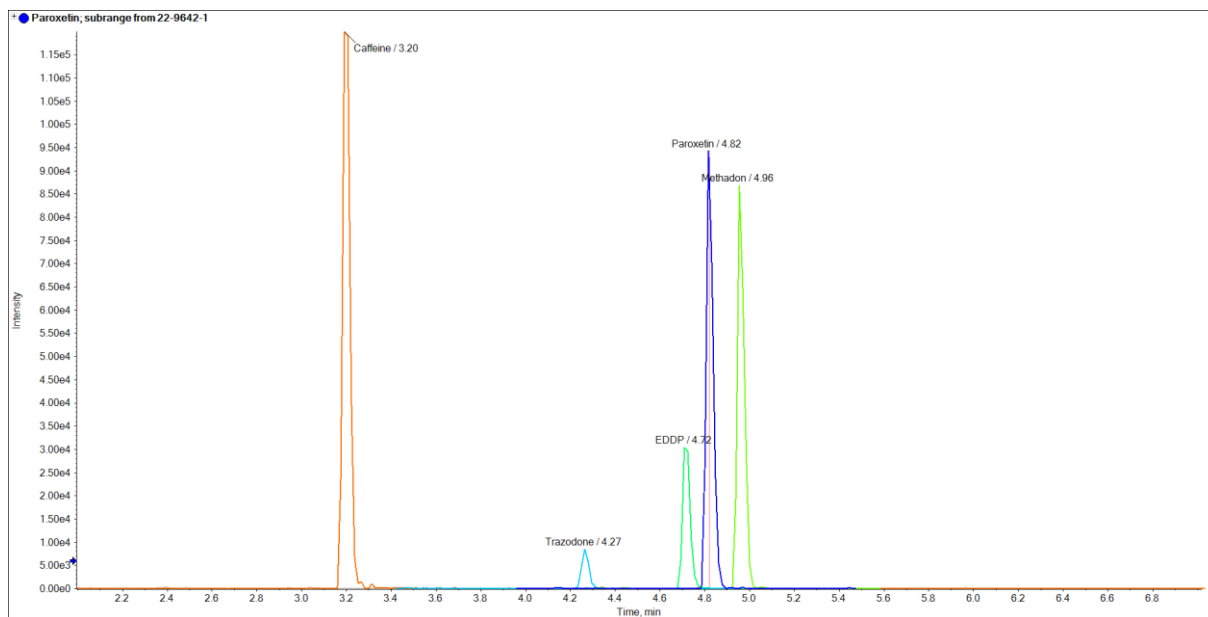


6) Urine Sample 2 (Zoom)

Reprospher C8 1.8 μ m, 50 mm x 2.0 mm - Dr. Maisch HPLC GmbH



Kinetex C8 2.6 μ m, 50 mm x 2.1 mm - Phenomenex



Data courtesy of Dr. Stefan König, Institut für Rechtsmedizin Bern (Switzerland), Forensische Toxikologie und Chemie.

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Dr. Maisch products are available globally. For more information contact your Dr. Maisch representative at info@dr-maisch.com.