

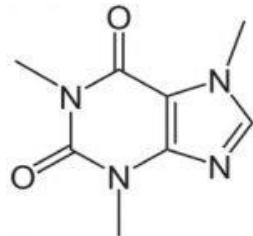
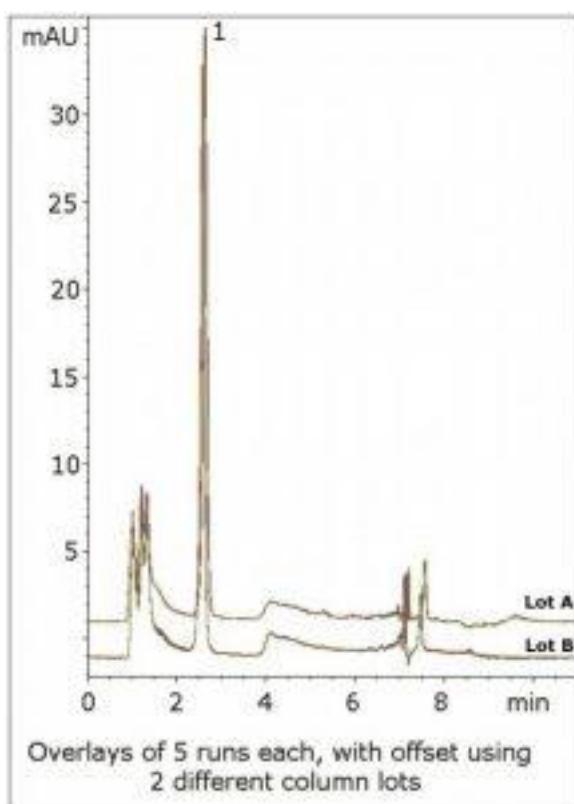


## Caffeine in Coffee Analyzed by HPLC - AppNote

### Unique Retention Mode Affords Superior Specificity

Although Caffeine retains well in Reversed Phase, it is found to be difficult to obtain a well-resolved Peak free of interference from other matrix peaks with a complex sample such as coffee. In this Method, most of the matrix peaks elute near the void volume and do not interfere with the Caffeine Peak, which is well-resolved from the others.

Complex matrices can also adversely affect run-to-run repeatability due to compounds that do not elute from the Column and change the chromatography. Here the data shows no sign of contaminant build-up on the Column, as the run-to-run overlays show. The lot-to-lot reproducibility is good as well. Finally, the Method conditions are LCMS compatible.



**Peak:**

Caffeine

## Method Conditions

**Column:** Cogent Diamond Hydride™, 4µm, 100Å

**Catalog No.:** 70000-7.5P

**Dimensions:** 4.6 x 75mm

### Mobile Phase:

A: DI Water / 0.1% Formic Acid (v/v)

B: Acetonitrile / 0.1% Formic Acid (v/v)

### Gradient:

Time (minutes)	%B
0	98
2	98
7	50
8	98

**Post Time:** 3 minutes

**Injection vol.:** 1µL

**Flow rate:** 1.0mL / minute

**Detection:** UV @ 275nm

**Sample Preparation:** Commercially available ground coffee was brewed and filtered with a 0.45µm Nylon Syringe Filter (MICROSOLV Tech Corp.). It was then diluted 1:10 with a diluent of 50:50 Solvent A / Solvent B. The Caffeine Peak identity was confirmed with a USP reference standard.

**t<sub>0</sub>:** 0.9 minutes

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**Note:** Caffeine is a Xanthine Alkaloid found in the coffee plant, the tea bush, the kola nut, and other plants. It is the most commonly consumed psychoactive drug in the world.

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**MicroSolv Technology Corporation**

9158 Industrial Blvd. NE, Leland, NC 28451

Tel: (732) 380-8900

Fax: (910) 769-9435

Email: [customers@mtc-usa.com](mailto:customers@mtc-usa.com)

Website: [www.mtc-usa.com](http://www.mtc-usa.com)