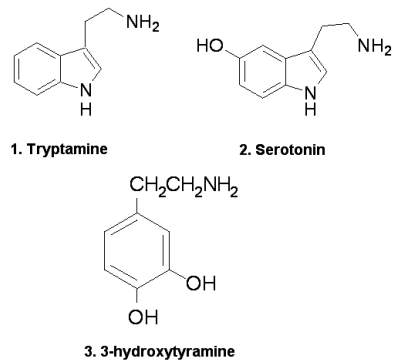
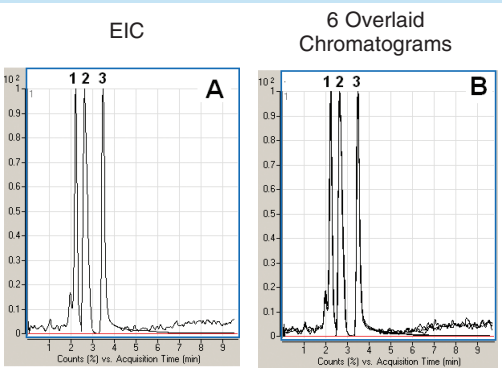
APPLICATION NOTES

Cogent™ Diamond-Hydride

HPLC

# 3 Biogenic Amines by ANP




**Notes:**
Biogenic amines are important compounds produced either by living organisms themselves (endogenous amines) or absorbed from food (exogenous amines). Biogenic amines (such as tryptamine) if present in food or beverages and consumed in concentration that is too high, may cause food poisoning. At the same time tryptamine, a metabolite of tryptophan is found in trace amounts in the brains of mammals and plays a role as a neurotransmitter. Serotonin and dopamine (catecholamine) are central nervous system neurotransmitters and are physiologically active substances; regulating the functioning of some extrapyramidal and other brain centers.

**Biogenic amines (monoamine alkaloid, monoamine and catecholamine) analyzed reproducibly**

## Method Conditions

**Column:** Cogent Diamond Hydride™ 4µm, 100Å.
**Catalog No.:** 70000-15P-2
**Dimensions:** 2.1 x150 mm
**Solvents:** A: DI water + 0.1% ammonium formate pH 5.9
B: 90% acetonitrile/10% DI water w/ 0.1% ammonium formate pH 6

**Mobile phase:** **Gradient**

| Time | %B | Time | %B |
|---|---|---|---|
| 0.0 | 90 | 7.0 | 70 |
| 2.5 | 90 | 7.1 | 30 |
| 6.0 | 70 | 8.0 | 30 |

$t_0$ = 1.44 min

**Flow rate:** 0.4 mL/min.
**Sample:** Mixture of 3 biogenic amines:
1. Tryptamine
159.09222 m/z (M-H)-, RT = 2.23 min
2. Serotonin (5-hydroxytryptamine)
175.08714 m/z (M-H)-, RT = 2.63 min
3. Dopamine (3-hydroxytyramine)
152.07 m/z (M-H)-, RT = 3.51 min

**Detection:** ESI – neg - Agilent 6210 MSD TOF mass spectrometer.

## Discussion

Chromatogram A shows separation of three biogenic amines using a Cogent Diamond Hydride™ column, buffered mobile phase for MS and an ANP gradient (inverse). The analysis is very reproducible as shown in Figure B with excellent peak shapes. The results presented give the strong indication on the importance of having Diamond Hydride™ or other TYPE-C Silica based HPLC columns when analyzing basic compounds.

| Cat. No. | Description |
|---|---|
| 70000-15P-2 | Cogent Diamond Hydride™ HPLC Column, 100Å, 4µm, 2.1 x 150 mm |

APP-A54

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