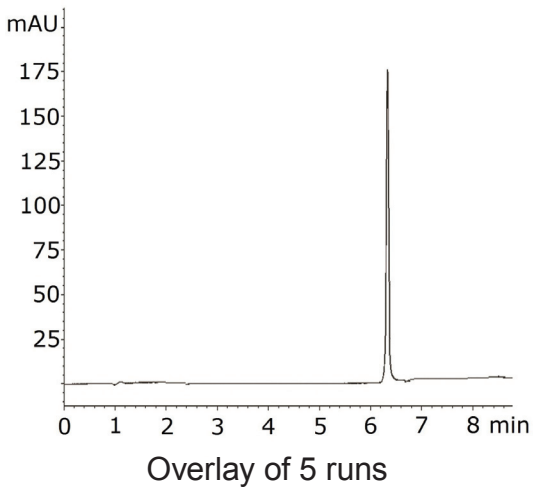
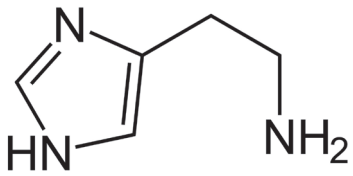
Histamine Retention

LC-MS compatible method



Overlay of 5 runs

Chromatograms shown were blank subtracted



Note: Histamine is known for its role in allergic response. Release of histamine plays a role in inflammation, gastric acid secretion, microcirculation and neurotransmission in mammalian brains. Measurement of histamine levels in body fluids has been used in clinical analysis in various diseases such as pre-eclampsia, asthma, cancer, mastocytosis and in the progression of periodontitis. Histamine is also present in many foods and beverages, especially red wine and spoiled food. Ingesting histamine can cause migraines, sweating and nausea.

Method Conditions

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

Catalog No.: 70000-7.5P

Dimensions: 4.6 x 75 mm

Solvents: A: DI H_2O / 0.1% formic acid
B: Acetonitrile / 0.1% formic acid

Gradient:

time (min.)	%B
0	80
5	30
7	30
8	80

Post Time: 5 min

Injection vol.: 1µL

Flow rate: 0.5 mL/min

Detection: UV 220 nm

Sample: Stock Solution: 1 mg/mL in 80/20 DI H2O/ methanol diluent. The solution was filtered through a 0.45µm nylon syringe filter, AQ™ brand (MicroSolv Tech Corp.).
Working Solution: Stock solution was diluted 1:10 with 50/50 solvent A / solvent B mixture.

Peak: Histamine

t_0: 0.9 min

Discussion

As a heterocyclic primary amine, histamine is a very polar compound and is difficult to retain on a reverse phase column. The Cogent Diamond Hydride™ column provides adequate retention and a symmetrical peak shape for this challenging compound without the use of ion pairing reagents in the mobile phase. The method can be readily transferred to MS detector since the eluents used are MS compatible.

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