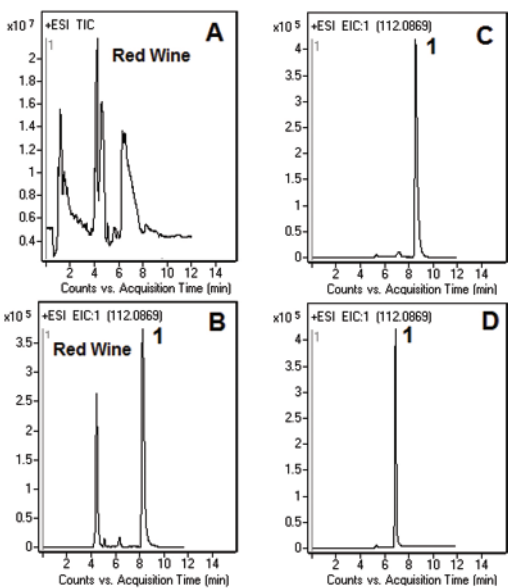
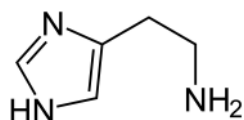


Histamine in Red Wine
LC-MS Method without Derivatization



Figures:
 A. Old red wine, TIC.
 B. Old red wine, EIC (112.0869 m/z).
 Extra peak is likely an isomer of histamine
 C. Histamine dihydrochloride standard, EIC
 (112.0869 m/z). 50% isopropanol in solvent A
 D. Histamine dihydrochloride standard, EIC
 (112.0869 m/z). No isopropanol in solvent A

Method Conditions

Column: Cogent Diamond Hydride™, 4µm, 100A
Catalog No.: 70000-15P-2
Dimensions: 2.1 x 150 mm
Solvents: A: 50% DI H₂O/ 50% 2-propanol/ 0.1% formic acid (Figures A–C)
 DI H₂O/ 0.1% formic acid (Figure D)
 B: Acetonitrile/ 0.1% formic acid (All Figures)

Gradient:

time (min.)	%B	time (min.)	%B
0	80	7	10
5	10	8	80

Post Time: 5 min (can be reduced for standards)
Injection Vol.: 1 µL
Flow Rate: 0.4 mL/min
Detection: ESI – POS - Agilent 6210 MSD TOF mass spectrometer
Sample: **Old Red Wine:** Sample was filtered with 0.45 microm nylon syringe filter (MicroSolv Tech Corp) and diluted 1:5 with 50:50 solvent A:B mixture.
Standard: 1 mg/mL Histamine dihydrochloride stock solution in 80/20 DI H₂O/MeOH diluted 1:100 with 50/50 solvent A/solvent B diluent.
Peak: 1. Histamine (112.0869 m/z)
t₀: 0.9 min

Discussion

This method for red wine analysis is simple, fast, robust and does not require derivatization like many other HPLC methods. When isopropanol was not used in the A solvent, the histamine peak was highly symmetrical in the standard (Compare Fig. C & D) but distorted in the red wine extract due to matrix effects. Addition of 50% of isopropanol to solvent A greatly improved peak shape for analysis of wine samples (Fig. B). Please note that histamine retention increased when isopropanol was in solvent A, since DI water is the strongest solvent and substituting it for isopropanol reduces eluting power of the mobile phase.

For more information visit www.MTC-USA.com

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