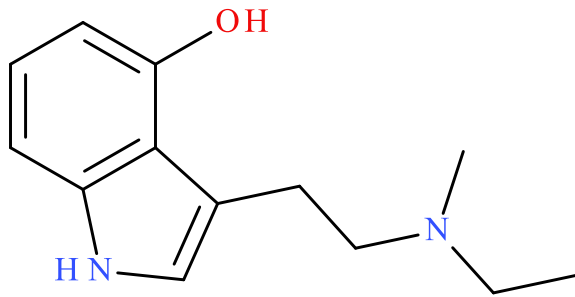


4-HO-MET

Sample Type: **Seized Material**



Latest Revision: **May 29, 2019**

Date Received: **February 15, 2019**

Date of Report: **May 29, 2019**

1. GENERAL INFORMATION

IUPAC Name:	3-[2-[ethyl(methyl)amino]ethyl]-1H-indol-4-ol
InChI String:	InChI=1S/C13H18N2O/c1-3-15(2)8-7-10-9-14-11-5-4-6-12(16)13(10)11/h4-6,9,14,16H,3,7-8H2,1-2H3
CFR:	Not Scheduled (05/2019)
CAS#	77872-41-4
Synonyms:	4-OH-MET, 4-hydroxy MET, 4-hydroxy-N-methyl-N-ethyltryptamine, Metocin, Methylcybin
Source:	Department of Homeland Security
Appearance:	Brown Solid Material

Important Note: All identifications were made based on evaluation of analytical data (GC-MS and LC-QTOF) in comparison to analysis of acquired reference material.

Prepared By: Alex J. Krotulski, MSFS, Melissa F. Fogarty, MSFS, D-ABFT-FT, and Barry K. Logan, PhD, F-ABFT

2. CHEMICAL AND PHYSICAL DATA

2.1 CHEMICAL DATA

Form	Chemical Formula	Molecular Weight	Molecular Ion [M ⁺]	Exact Mass [M+H] ⁺
Base	C ₁₃ H ₁₈ N ₂ O	218.3	218	219.1492

3. BRIEF DESCRIPTION

4-HO-MET is classified as a novel tryptamine analogue. Tryptamine analogues are modified based on the structure of tryptamine. Tryptamine is found at low concentrations endogenously in the brain, suspected of playing a role in neurological functions, and exogenously in some plant species. Tryptamine analogues have been reported to cause hallucinogenic effects, often similar to the effects of “psychedelic mushrooms.” Tryptamine analogues have caused adverse events, including agitation, tachyarrhythmias, hyperpyrexia, and death, as described in the literature. Structurally similar compounds include psilocin, 4-HO-MiPT, and 4-HO-DET, among several other tryptamine analogues. Psilocin is a Schedule I substance in the United States.

4. ADDITIONAL RESOURCES

https://www.policija.si/apps/nfl_response_web/0_Analytical_Reports_final/4-HO-MET-ID-1267-15-fumarate-report_final.pdf

<https://www.caymanchem.com/product/11148>

5. QUALITATIVE DATA

5.1 GAS CHROMATOGRAPHY MASS SPECTROMETRY (GC-MS)

Testing Performed At: NMS Labs (Willow Grove, PA)

Sample Preparation: Acid/Base extraction

Instrument: Agilent 5975 Series GC/MSD System

Column: Zebtron™ Inferno™ ZB-35HT (15 m x 250 μm x 0.25 μm)

Carrier Gas: Helium (Flow: 1 mL/min)

Temperatures: Injection Port: 265 °C

Transfer Line: 300 °C

MS Source: 230 °C

MS Quad: 150 °C

Oven Program: 60 °C for 0.5 min, 35 °C/min to 340 °C for 6.5 min

Injection Parameters: Injection Type: Splitless

Injection Volume: 1 µL

MS Parameters: Mass Scan Range: 40-550 m/z

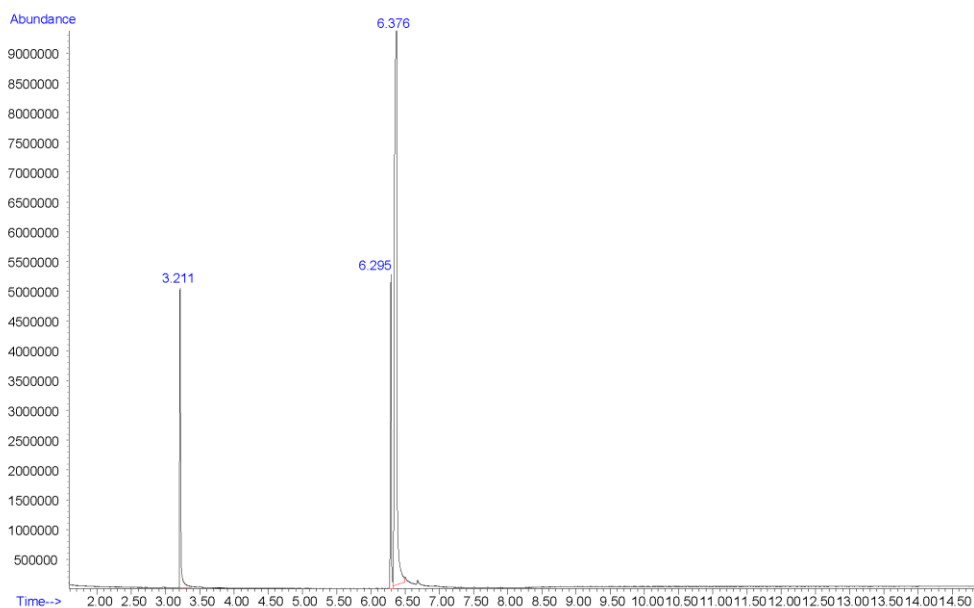
Threshold: 250

Retention Time: 6.376 min

Standard Comparison: Reference material for 4-HO-MET (Batch: 0440651-37) was purchased from Cayman Chemical (Ann Arbor, MI, USA). Analysis of this standard resulted in positive identification of the analyte in the exhibit as 4-HO-MET, based on retention time (6.345 min) and mass spectral data.

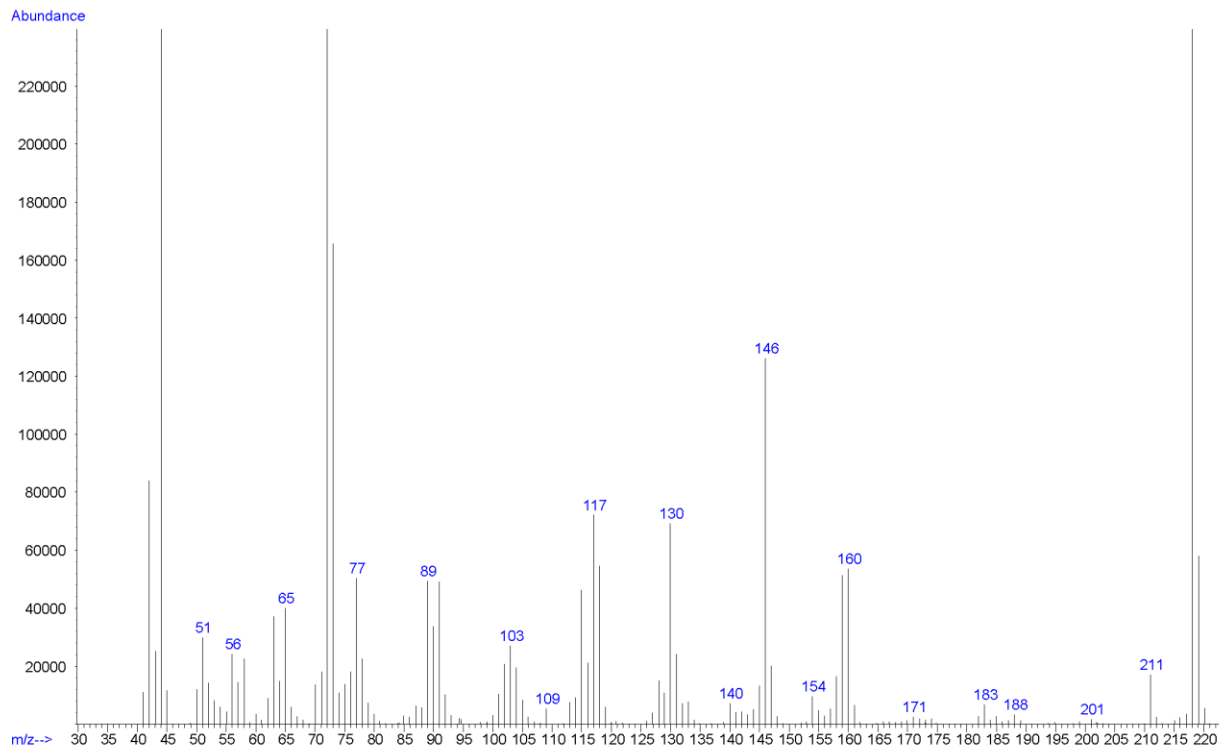
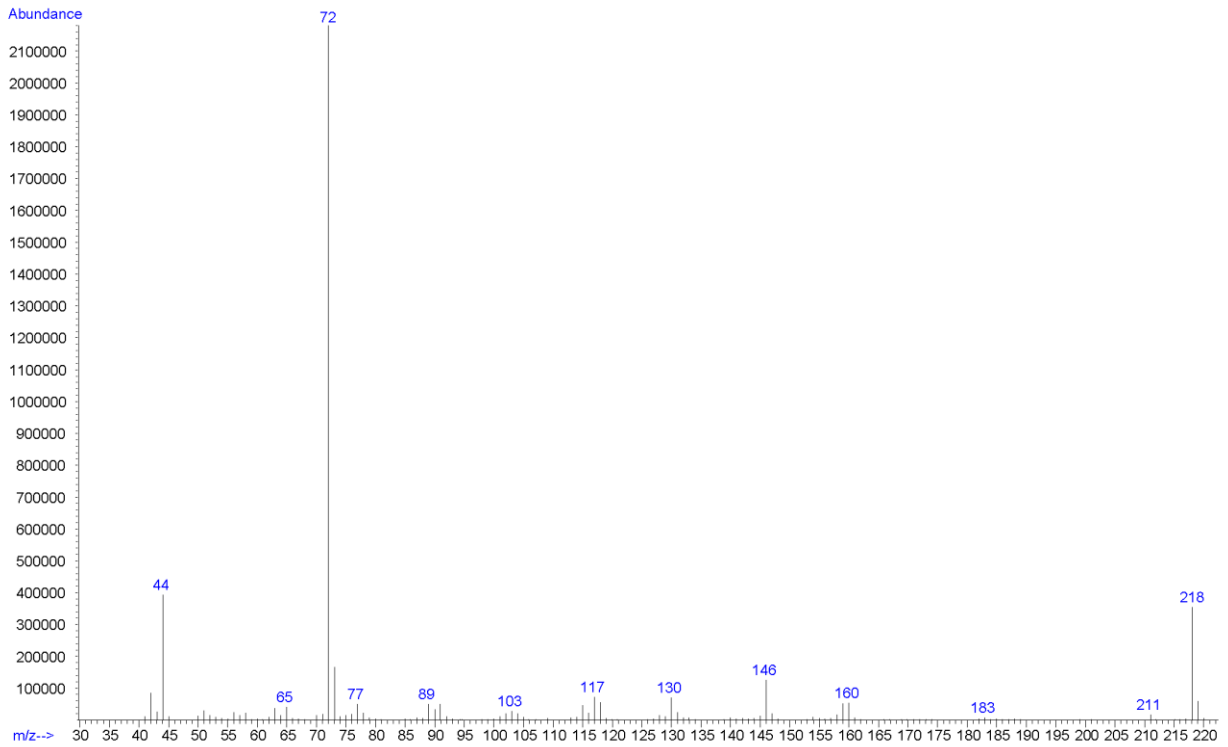
<https://www.caymanchem.com/product/11148>

Chromatogram: 4-HO-MET



Additional peaks present in chromatogram: internal standard (3.211 min and 6.295 min)

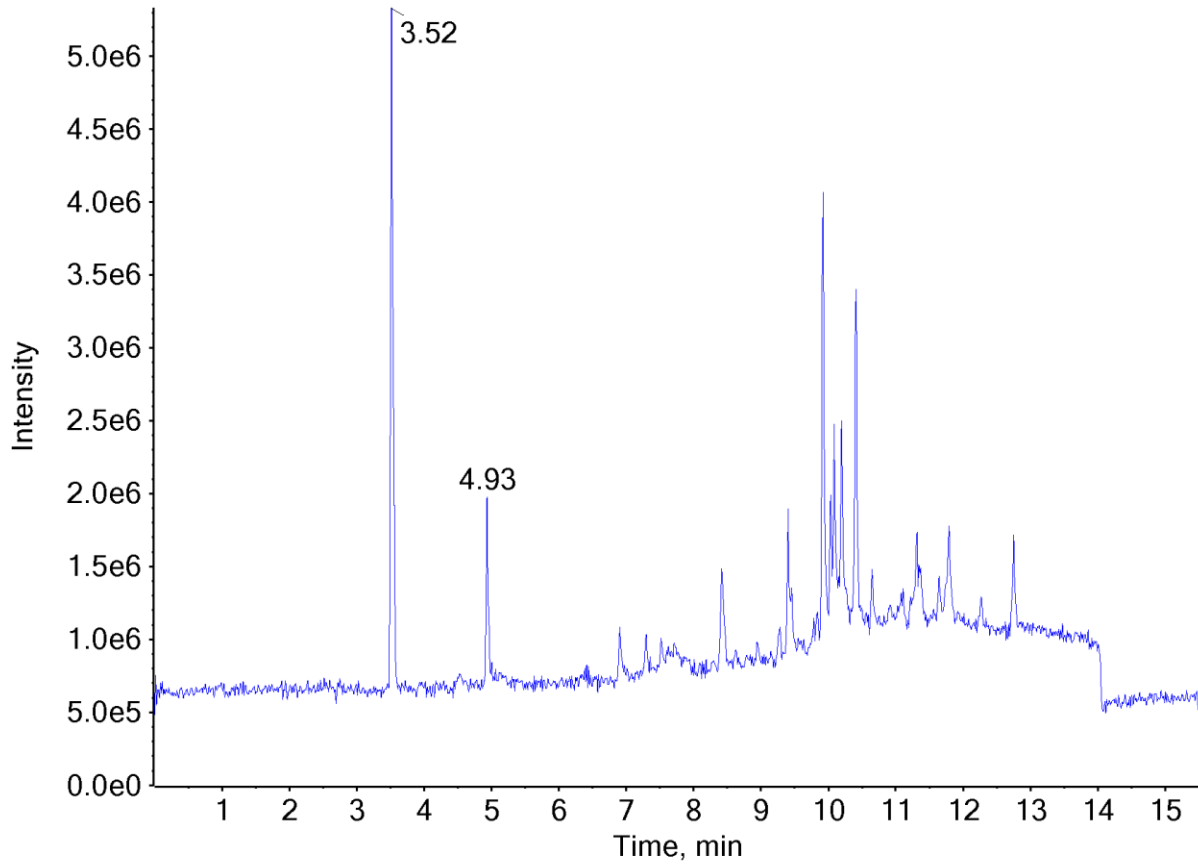
EI (70 eV) Mass Spectrum (Top) and 10x (Bottom): 4-HO-MET



5.2 LIQUID CHROMATOGRAPHY QUADRUPOLE TIME OF FLIGHT MASS SPECTROMETRY (LC-QTOF)

Testing Performed At:	The Center for Forensic Science Research and Education at the Fredric Rieders Family Foundation (Willow Grove, PA)
Sample Preparation:	1:100 dilution of acid/base extract in mobile phase
Instrument:	Sciex TripleTOF® 5600+, Shimadzu Nexera XR UHPLC
Column:	Phenomenex® Kinetex C18 (50 mm x 3.0 mm, 2.6 µm)
Mobile Phase:	A: Ammonium formate (10 mM, pH 3.0) B: Methanol/acetonitrile (50:50) Flow rate: 0.4 mL/min
Gradient:	Initial: 95A:5B; 5A:95B over 13 min; 95A:5B at 15.5 min
Temperatures:	Autosampler: 15 °C Column Oven: 30 °C Source Heater: 600 °C
Injection Parameters:	Injection Volume: 10 µL
QTOF Parameters:	TOF MS Scan Range: 100-510 Da Precursor Isolation: SWATH® acquisition (27 windows) Fragmentation: Collision Energy Spread (35±15 eV) MS/MS Scan Range: 50-510 Da
Retention Time:	3.52 min
Standard Comparison:	Reference material for 4-HO-MET (Batch: 0440651-47) was purchased from Cayman Chemical (Ann Arbor, MI, USA). Analysis of this standard resulted in positive identification of the analyte in the exhibit as 4-HO-MET, based on retention time (3.51 min) and mass spectral data. (https://www.caymanchem.com/product/11148)

Chromatogram: 4-HO-MET



Additional peak present in chromatogram: internal standards (4.93 min)

TOF MS (Top) and MS/MS (Bottom) Spectra: 4-HO-MET

