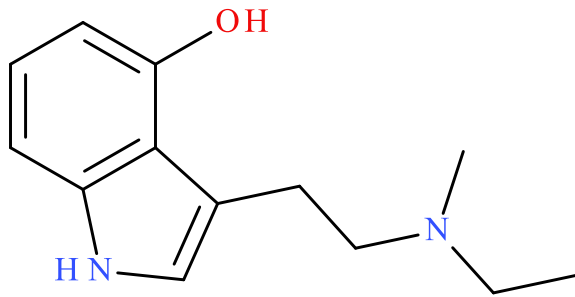


## 4-HO-MET

Sample Type: **Seized Material**



Latest Revision: **May 29, 2019**

Date Received: **February 15, 2019**

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

### 1. GENERAL INFORMATION

<b>IUPAC Name:</b>	3-[2-[ethyl(methyl)amino]ethyl]-1H-indol-4-ol
<b>InChI String:</b>	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
<b>CFR:</b>	Not Scheduled (05/2019)
<b>CAS#</b>	77872-41-4
<b>Synonyms:</b>	4-OH-MET, 4-hydroxy MET, 4-hydroxy-N-methyl-N-ethyltryptamine, Metocin, Methylcybin
<b>Source:</b>	Department of Homeland Security
<b>Appearance:</b>	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 <sup>+</sup> ]	Exact Mass [M+H] <sup>+</sup>
Base	C <sub>13</sub> H <sub>18</sub> N <sub>2</sub> 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.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

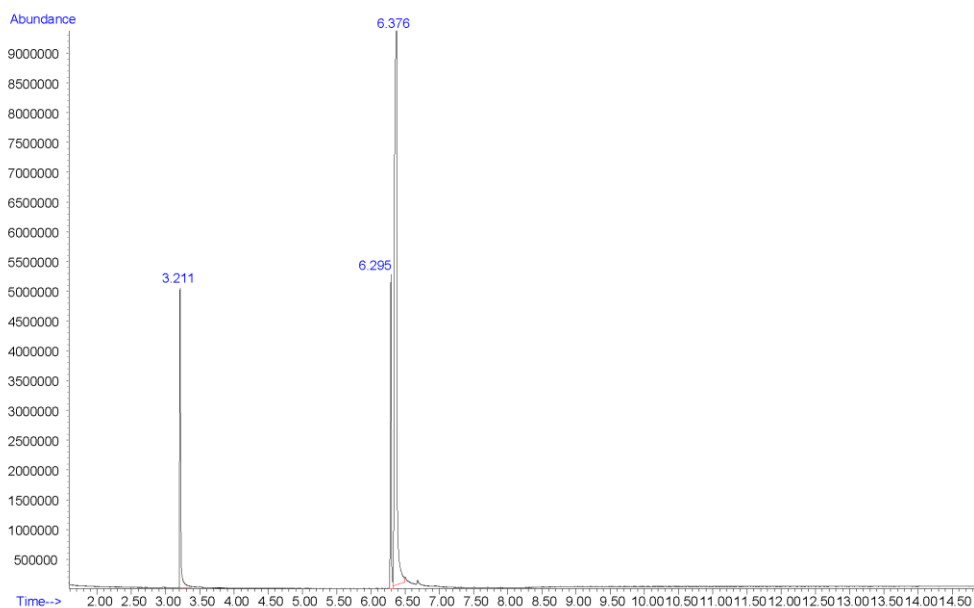
Threshold: 250

**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.

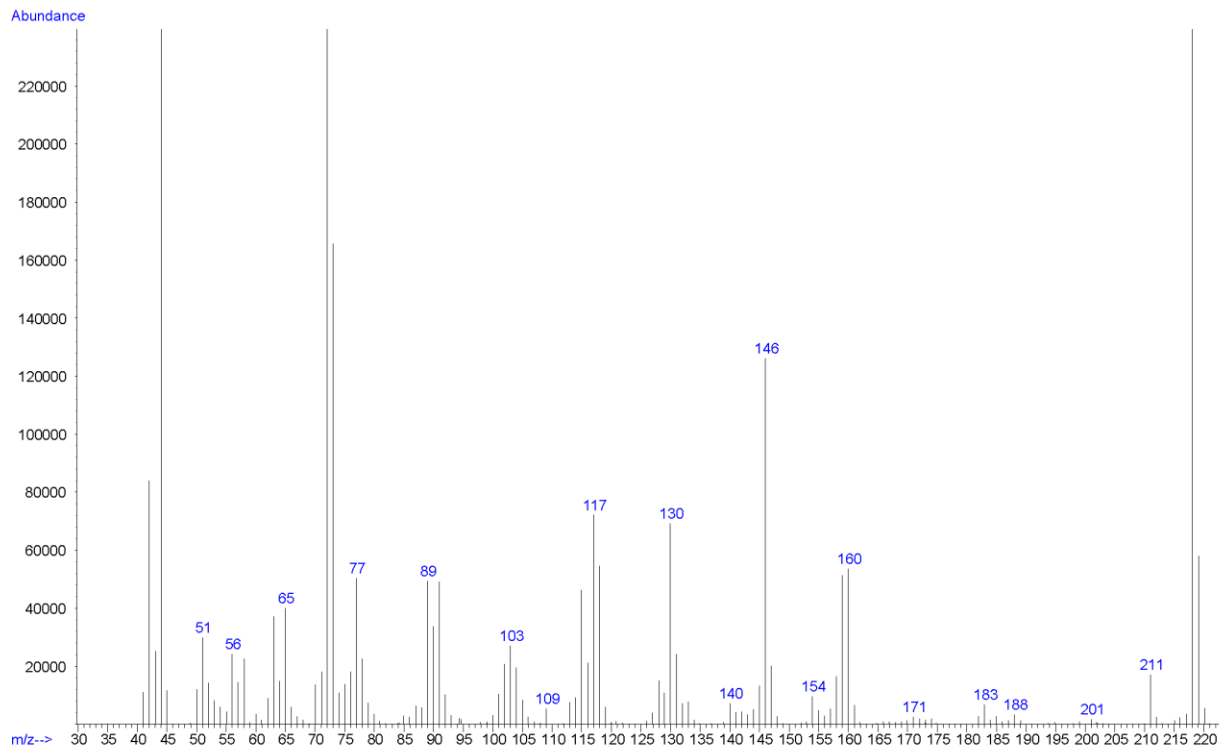
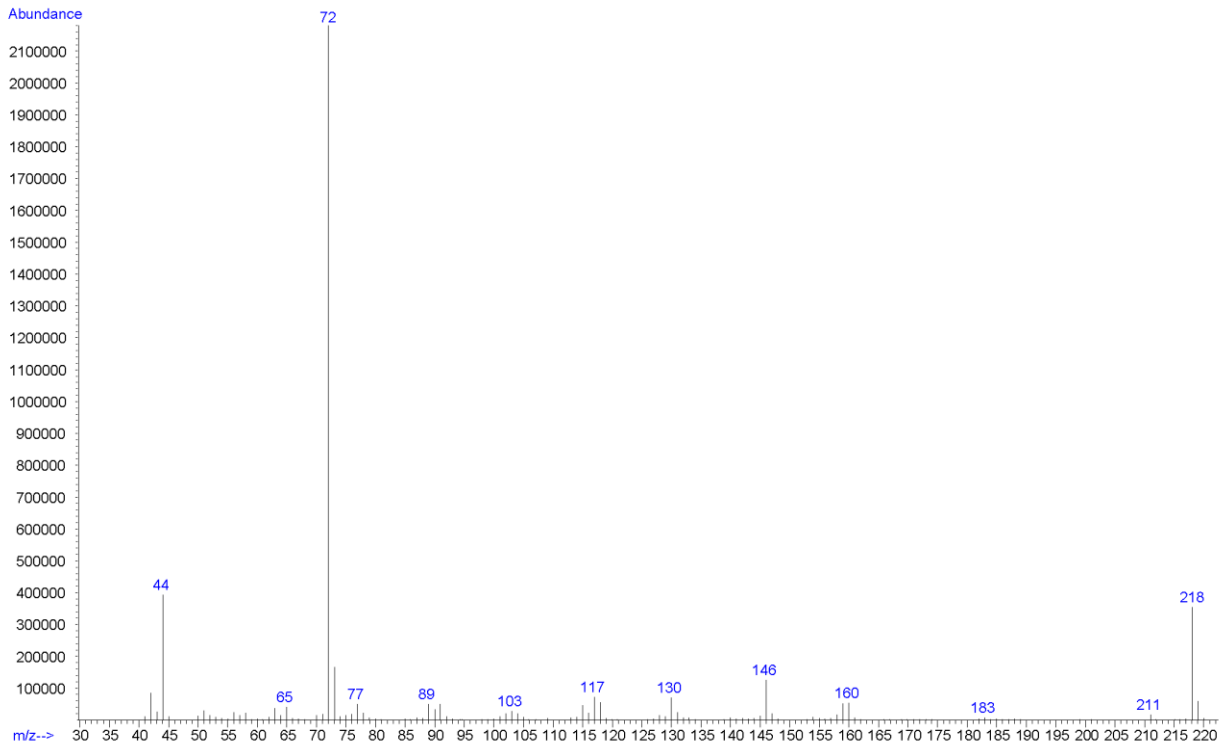
<https://www.caymanchem.com/product/11148>

### Chromatogram: 4-HO-MET



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

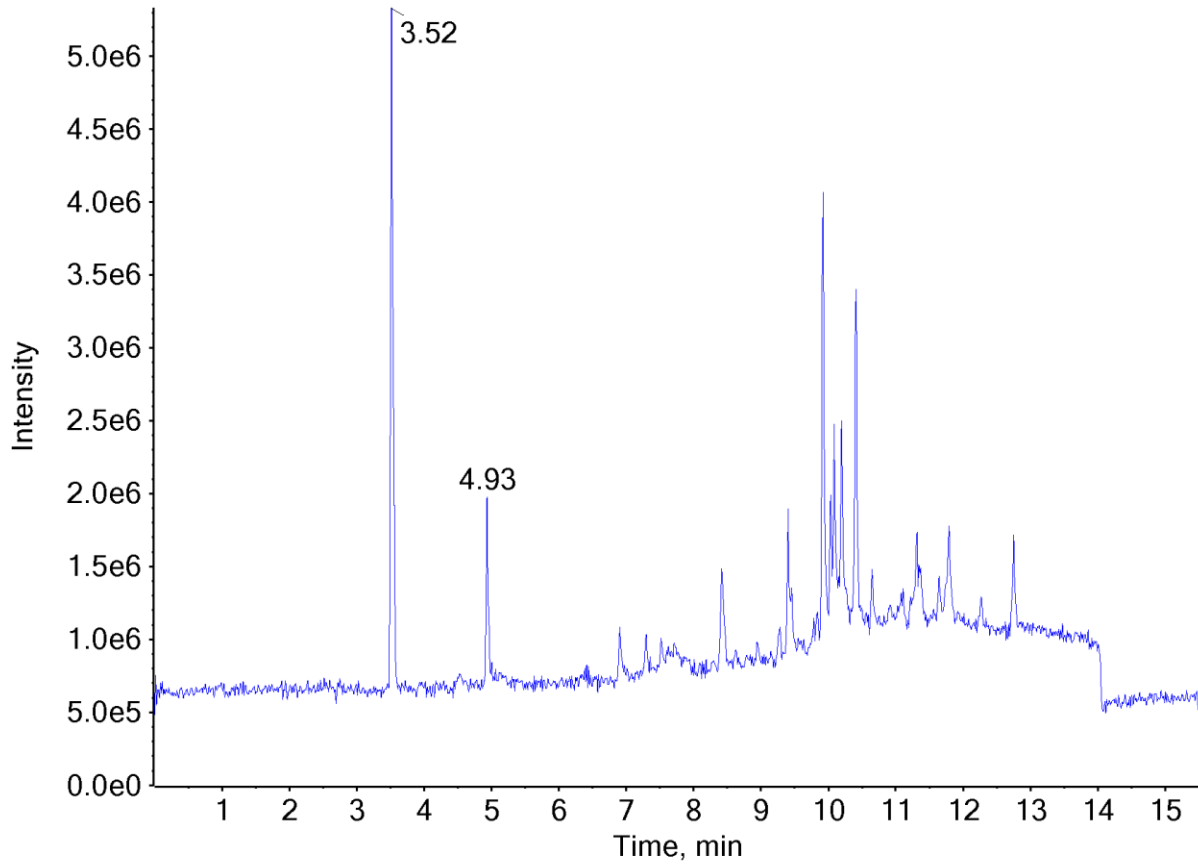
# EI (70 eV) Mass Spectrum (Top) and 10x (Bottom): 4-HO-MET



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

<b>Testing Performed At:</b>	The Center for Forensic Science Research and Education at the Fredric Rieders Family Foundation (Willow Grove, PA)
<b>Sample Preparation:</b>	1:100 dilution of acid/base extract in mobile phase
<b>Instrument:</b>	Sciex TripleTOF® 5600+, Shimadzu Nexera XR UHPLC
<b>Column:</b>	Phenomenex® Kinetex C18 (50 mm x 3.0 mm, 2.6 µm)
<b>Mobile Phase:</b>	A: Ammonium formate (10 mM, pH 3.0) B: Methanol/acetonitrile (50:50) Flow rate: 0.4 mL/min
<b>Gradient:</b>	Initial: 95A:5B; 5A:95B over 13 min; 95A:5B at 15.5 min
<b>Temperatures:</b>	Autosampler: 15 °C Column Oven: 30 °C Source Heater: 600 °C
<b>Injection Parameters:</b>	Injection Volume: 10 µL
<b>QTOF Parameters:</b>	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
<b>Retention Time:</b>	3.52 min
<b>Standard Comparison:</b>	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. ( <a href="https://www.caymanchem.com/product/11148">https://www.caymanchem.com/product/11148</a> )

**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**

