

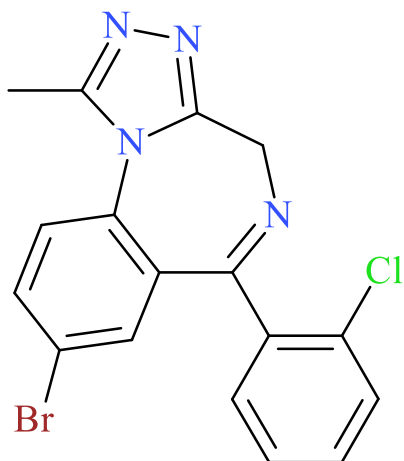
Phenazolam

Sample Type: **Toxicology Sample**

Latest Revision: **December 6, 2022**

Date Received: **November 10, 2022**

Date of Report: **December 6, 2022**



1. GENERAL INFORMATION

IUPAC Name:	8-bromo-6-(2-chlorophenyl)-1-methyl-4H-[1,2,4]triazolo[4,3-a][1,4]benzodiazepine
InChI String:	InChI=1S/C17H12BrClN4/c1-10-21-22-16-9-20-17(12-4-2-3-5-14(12)19)13-8-11(18)6-7-15(13)23(10)16/h2-8H,9H2,1H3
CFR:	Not Scheduled (12/2022)
CAS#	87213-50-1
Synonyms:	Clobromazolam, DM-II-90, BRN 4550445
Source:	NMS Labs – Toxicology Department

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

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2. CHEMICAL AND PHYSICAL DATA

2.1 CHEMICAL DATA

Drug	Chemical Formula	Molecular Weight	Molecular Ion [M ⁺]	Exact Mass [M+H] ⁺
Phenazolam	C ₁₇ H ₁₂ BrClN ₄	387.7	386	387.0007

3. BRIEF DESCRIPTION

Phenazolam is classified as a novel benzodiazepine. Benzodiazepines are central nervous system depressants. Novel benzodiazepines, typically defined as emergent benzodiazepines not used medicinally, are often pirated from early drug discovery or pharmaceutical studies. Novel benzodiazepines have appeared on illicit drug markets in recent years and have caused adverse events, as described in the literature; fatalities linked to novel benzodiazepine use have occurred, commonly when used in combination with other depressants (e.g., opioids and alcohol). Phenazolam is structurally similar to bromazolam, triazolam, and other novel benzodiazepines. Phenazolam is not federally controlled in the United States.

4. ADDITIONAL RESOURCES

https://www.policija.si/apps/nfl_response_web/0_Analytical_Reports_final/Phenazolam-ID-2072-19_report.pdf

<https://www.caymanchem.com/product/26700/phenazolam>

5. QUALITATIVE DATA

5.1 GAS CHROMATOGRAPHY MASS SPECTROMETRY (GC-MS)

Testing Performed At: The Center for Forensic Science Research and Education at the Fredric Rieders Family Foundation (Willow Grove, PA)

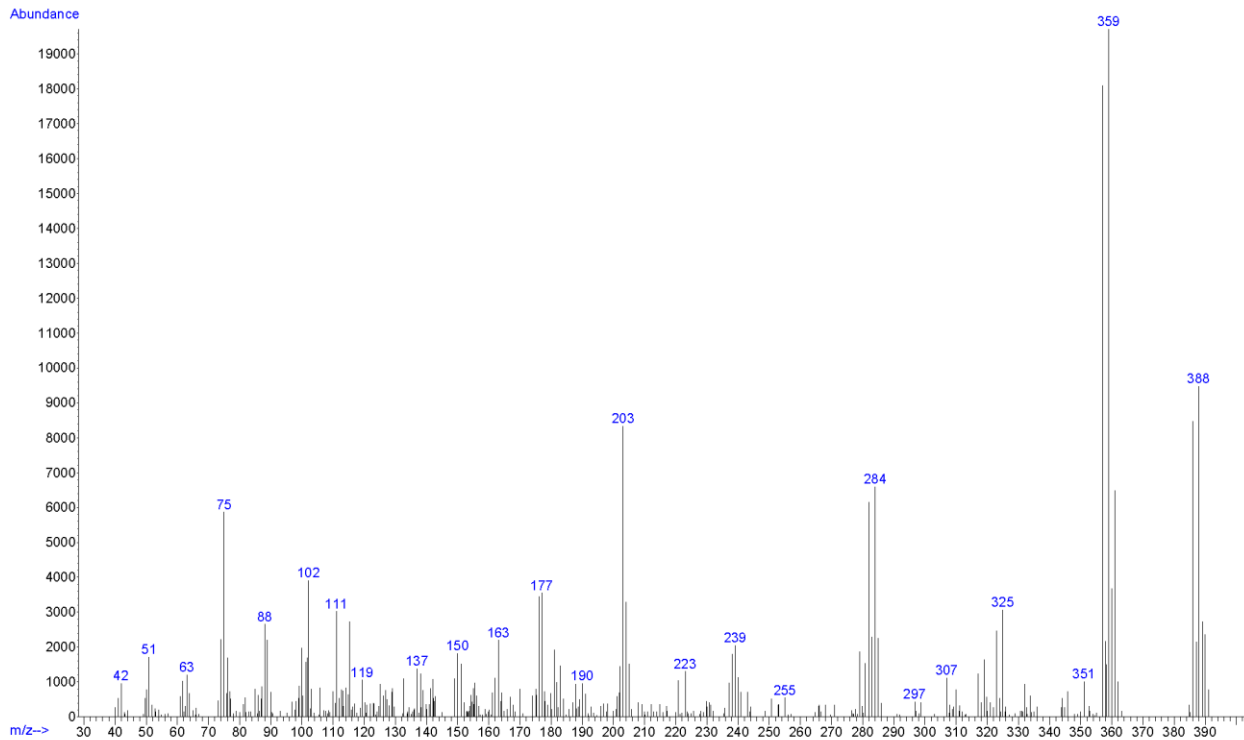
Sample Preparation: Standard diluted in methanol

Instrument: Agilent 5975 Series GC/MSD System

Standard: Reference material for Phenazolam (Batch: 0549180-1) was purchased from Cayman Chemical Company (Ann Arbor, MI, USA).

<https://www.caymanchem.com/product/26700/phenazolam>

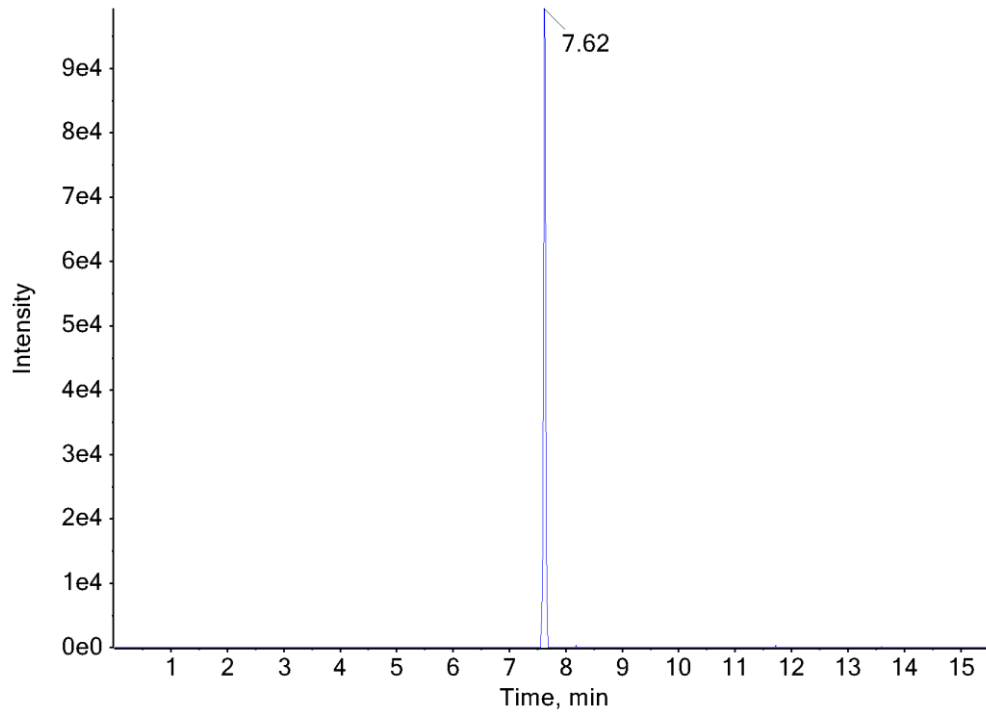
EI (70 eV) Mass Spectrum: Phenazolam (Standard)



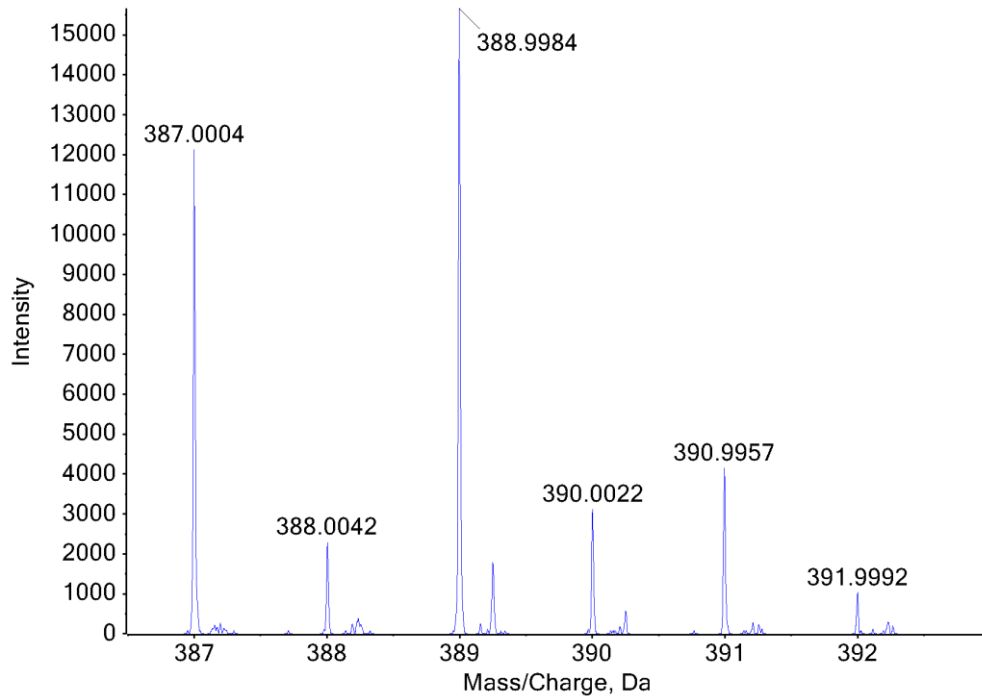
5.2 LIQUID CHROMATOGRAPHY QUADRUPOLE TIME-OF-FLIGHT MASS SPECTROMETRY (LC-QTOF-MS)

Testing Performed At:	The Center for Forensic Science Research and Education at the Fredric Rieders Family Foundation (Willow Grove, PA)
Sample Preparation:	Liquid-liquid extraction (LLE)
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:	7.62 min
Standard Comparison:	Reference material for Phenazepam (Batch: 0549180-1) was purchased from Cayman Chemical Company (Ann Arbor, MI, USA). Analysis of this standard resulted in positive identification of the analyte in the extract as Phenazepam, based on retention time (7.62 min) and mass spectral data. (https://www.caymanchem.com/product/26700/phenazepam)

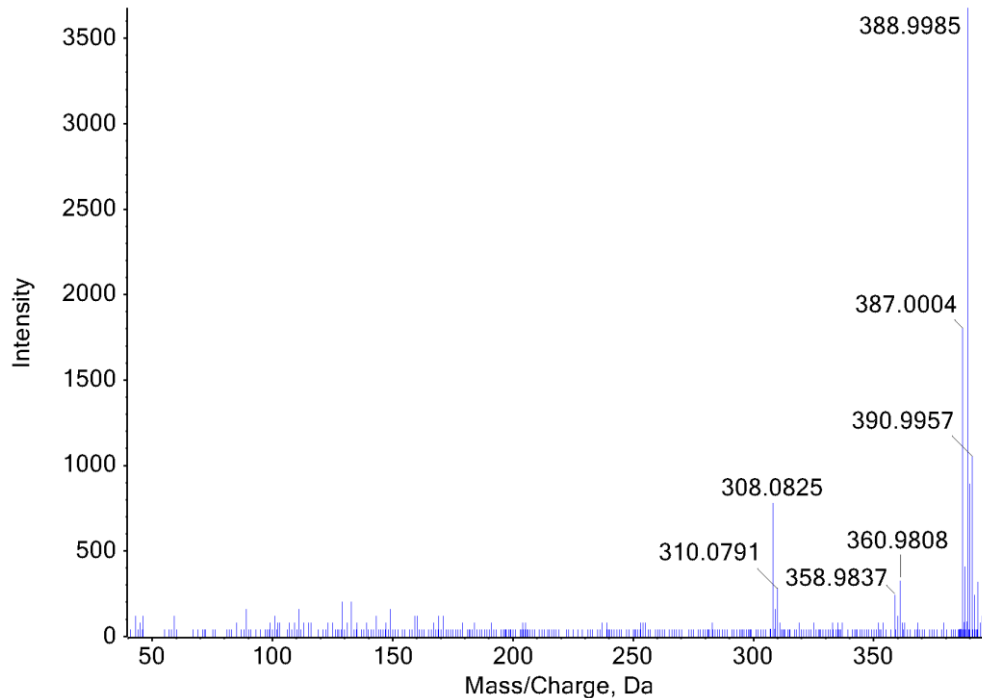
Extracted Ion Chromatogram: Phenazolam



TOF MS Spectra: Phenazolam



MS/MS Spectra: Phenazolam



6. FUNDING

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