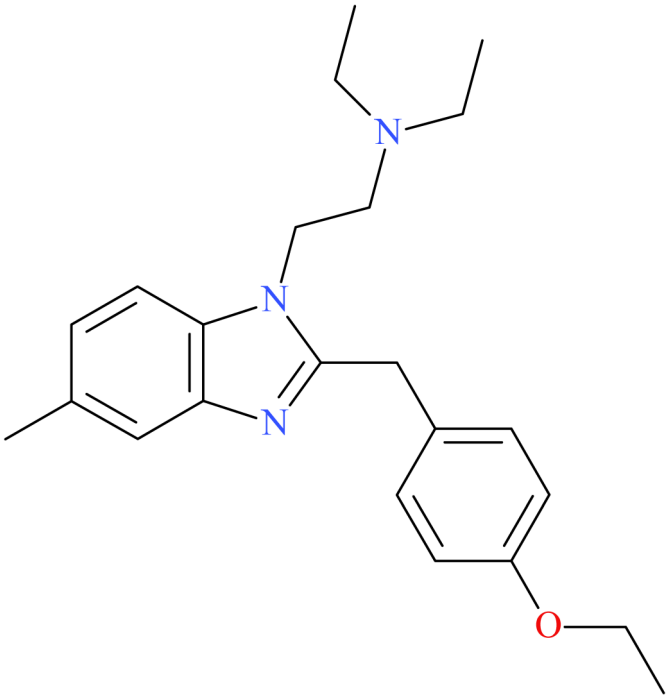
5-Methyl Etodesnitazene



NPS SUBCLASS
Opioid
REPORT DATE
August 26, 2024
SAMPLE RECEIVED
December 22, 2023
SAMPLE TYPE
Drug Material

Preferred Name	5-Methyl Etodesnitazene
Synonyms	Etomethazene, 5-Methyl Desnitroetonitazene, 5-Methyl Etazene
Formal Name	2-[2-[(4-ethoxyphenyl)methyl]-5-methyl-benzimidazol-1-yl]-N,N-diethyl-ethanamine
InChI Key	ZARKNPABJGEAOQ-UHFFFAOYSA-N
CAS Number	N/A
Chemical Formula	$C_{23}H_{31}N_3O$
Molecular Weight	365.5
Molecular Ion [M⁺]	365
Exact Mass [M+H]⁺	366.2540

Characterization & Intelligence

The following information was compiled in August 2024 and is subject to change as new research is conducted and as new information becomes available:

Description: 5-Methyl etodesnitazene is a novel synthetic opioid bearing structural resemblance to etonitazene, etodesnitazene, and other nitazene analogues. 5-Methyl etodesnitazene was first detected in January 2024 by our laboratory and was confirmed in comparison to standard reference material.

Sample Source: AIDS Project of Southern Vermont
In Collaboration with StreetCheck

Sample Appearance: White powder

STREET CHECK COMMUNITY DRUG CHECKING

Pharmacology: *In vitro* pharmacological data available for 5-methyl etodesnitazene show that this drug is an active opioid and is approximately 10x less potent than etonitazene, its 5-NO_2 counterpart.[1]

Toxicology: 5-Methyl etodesnitazene has been identified in two toxicology cases to date at the CFSRE.

Drug Materials: 5-Methyl etodesnitazene has been detected in one drug material to date at the CFSRE.

Demographics / Geographics: Drug material originated from Vermont and toxicology cases originated from North Carolina and Connecticut. 5-Methyl etodesnitazene was identified alongside fentanyl, NPS benzodiazepines (e.g., bromazolam), and other nitazene analogues (e.g., metonitazene).

Legal Status: 5-Methyl etodesnitazene is not currently scheduled in the United States.

References:

- Cayman Chemical: 5-Methyl Etodesnitazene
- [1]Kozell *et al.* (2024) Pharmacologic Characterization of Substituted Nitazenes at μ, κ, and Δ Opioid Receptors Suggests High Potential for Toxicity
- [2]De Vrieze *et al.* (2024) *In vitro* structure-activity relationships and forensic case series of emerging 2-benzylbenzimidazole 'nitazene' opioids

About: In collaboration with medical examiner and coroner offices, crime laboratories, clinical partners, and other stakeholders, the Center for Forensic Science Research and Education (CFSRE) is documenting first confirmations of NPS through analysis of drug materials and/or toxicology samples. These reports are generated using comprehensive analytical techniques (e.g., GC-MS, LC-QTOF-MS, NMR) and include available information about the new substances identified at the time of reporting, as well as the analytical data generated during testing. Our new drug monographs are intended to assist with the rapid identification of NPS in forensic casework and related disciplines, and should not be used for confirmatory purposes alone.

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

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Gas Chromatography Mass Spectrometry (GC-MS)

Laboratory: Center for Forensic Science Research and Education (CFSRE, Willow Grove, PA, USA)

Sample Preparation: Dilution in methanol

Instrument: Agilent 5975 Series GC/MSD

Methods: GC-MS Method Details & Monographs

GC-MS: Mass Spectrum (EI 70 eV)

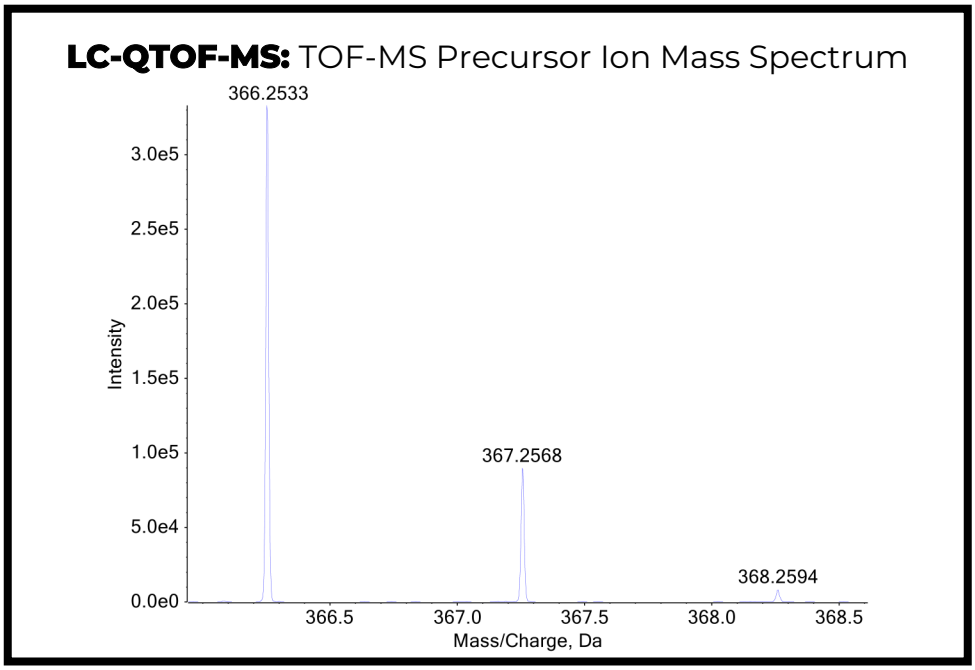
Liquid Chromatography Quadrupole Time-of-Flight Mass Spectrometry (LC-QTOF-MS)

Laboratory: Center for Forensic Science Research and Education (CFSRE, Willow Grove, PA, USA)

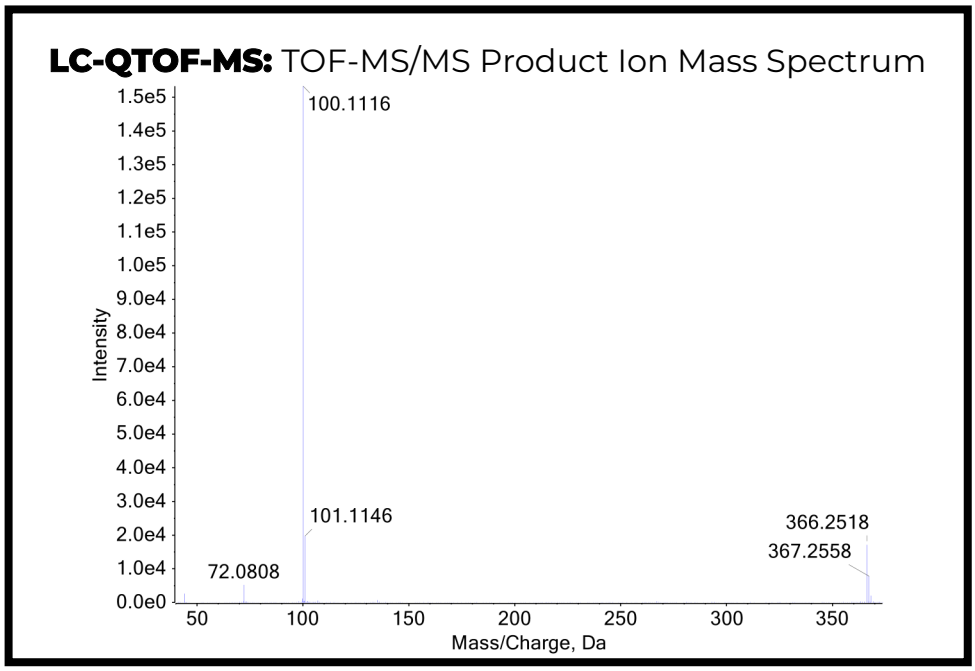
Sample Preparation: Dilution in mobile phase

Instrument: Sciex 5600+ LC-QTOF-MS

Methods: LC-QTOF-MS Method Details & Monographs



LC-QTOF-MS: TOF-MS Precursor Ion Mass Spectrum



LC-QTOF-MS: TOF-MS/MS Product Ion Mass Spectrum

Confirmation Using Drug Standard: *Reference material (Batch: 0644090-1) was purchased from Cayman Chemical (Ann Arbor, MI, USA). The analyte was confirmed to be 5-methyl etodesnitazene based on retention time (sample: 5.68 min vs. standard: 5.59 min) and mass spectral data comparisons.*