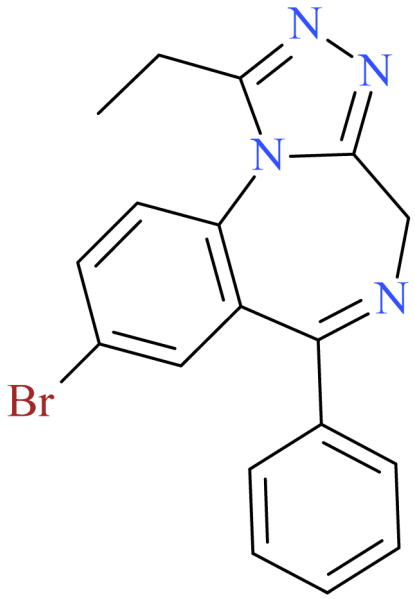
Ethylbromazolam



NPS SUBCLASS
Benzodiazepine
REPORT DATE
October 10, 2025
SAMPLE RECEIVED
June 30, 2025
SAMPLE TYPE
Toxicology

Preferred Name	Ethylbromazolam
Synonyms	N/A
Formal Name	8-bromo-1-ethyl-6-phenyl-4H-[1,2,4]triazolo[4,3-a][1,4]benzodiazepine
InChI Key	DKTGBMWWLATMHK-UHFFFAOYSA-N
CAS Number	105470-75-5
Chemical Formula	$C_{18}H_{15}BrN_4$
Molecular Weight	367.2
Molecular Ion [M⁺]	366
Exact Mass [M+H]⁺	367.0553

Characterization & Intelligence

The following information was compiled in October 2025 and is subject to change as new research is conducted and as new information becomes available:

Description: Ethylbromazolam is a designer benzodiazepine and is structurally similar to other known triazolobenzodiazepines (e.g., bromazolam, flubromazolam, phenazolam). Ethylbromazolam has been previously reported in drug materials in Australia and New Zealand.[1-3] Ethylbromazolam was first identified by our laboratory in July 2025 and confirmed after acquiring standard reference material.

Sample Source: Toxicology UK (United Kingdom)

Sample Appearance: Blood specimen

Pharmacology: The activity and potency of ethylbromazolam has not been explicitly studied; however, due to structural similarity to other designer benzodiazepines such as bromazolam, it is assumed that ethylbromazolam functions by positive allosteric modulation of the $GABA_A$ receptor.[4]

Toxicology: Ethylbromazolam has been detected in thirteen toxicology cases to date at the CFSRE.

Drug Materials: Ethylbromazolam has been detected in six drug materials to date at the CFSRE.

Demographics / Geographics: The first toxicology specimen originated from the United Kingdom and ethylbromazolam was identified alongside methamphetamine, cocaine, and etizolam. Ethylbromazolam has also been detected in the United States in Pennsylvania, California, New England, and beyond.

Legal Status: Ethylbromazolam is not currently scheduled in the United States.

References:

- Cayman Chemical: Ethylbromazolam
- [1]Rudkowsky (2025) Ethylbromazolam—The new global benzodiazepine
- [2]CanTEST (2025) Ethylbromazolam found in expected alprazolam pills
- [3]High Alert (2025) New benzodiazepine ethylbromazolam detected in New Zealand
- [4]World Health Organization (2023) Critical review report: bromazolam

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)

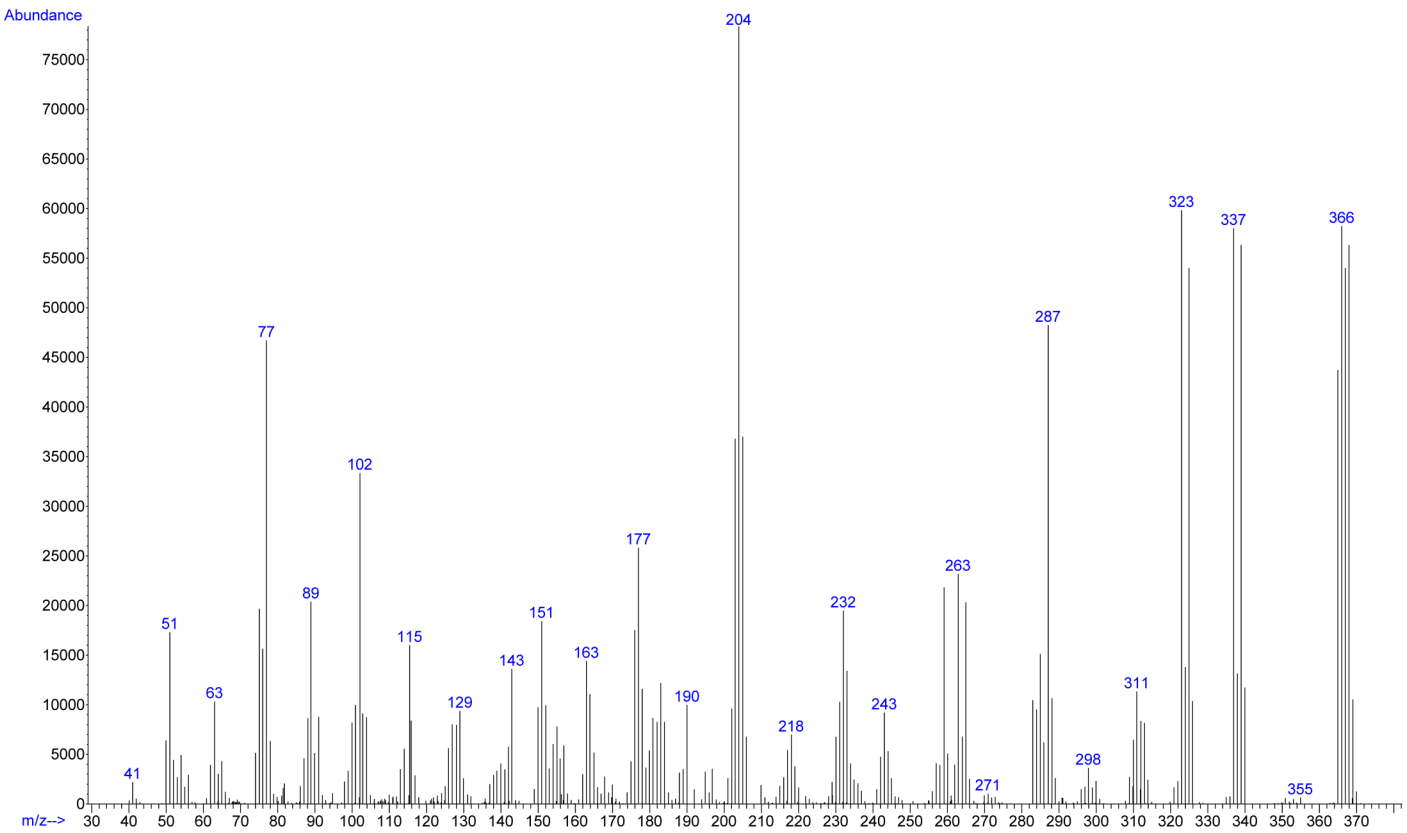
Laboratory: Center for Forensic Science Research and Education (CFSRE, Horsham PA, USA)

Sample Preparation: Standard dilution in methanol

Instrument: Agilent 5975 Series GC/MSD

Methods: GC-MS Method Details & Monographs

GC-MS: Mass Spectrum (EI 70 eV)



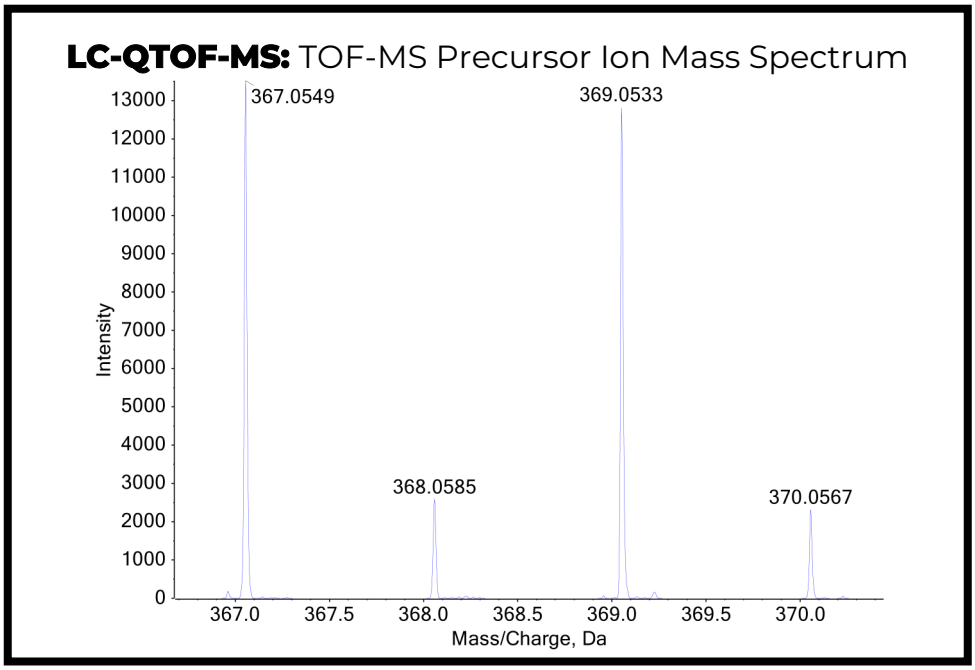
Liquid Chromatography Quadrupole Time-of-Flight Mass Spectrometry (LC-QTOF-MS)

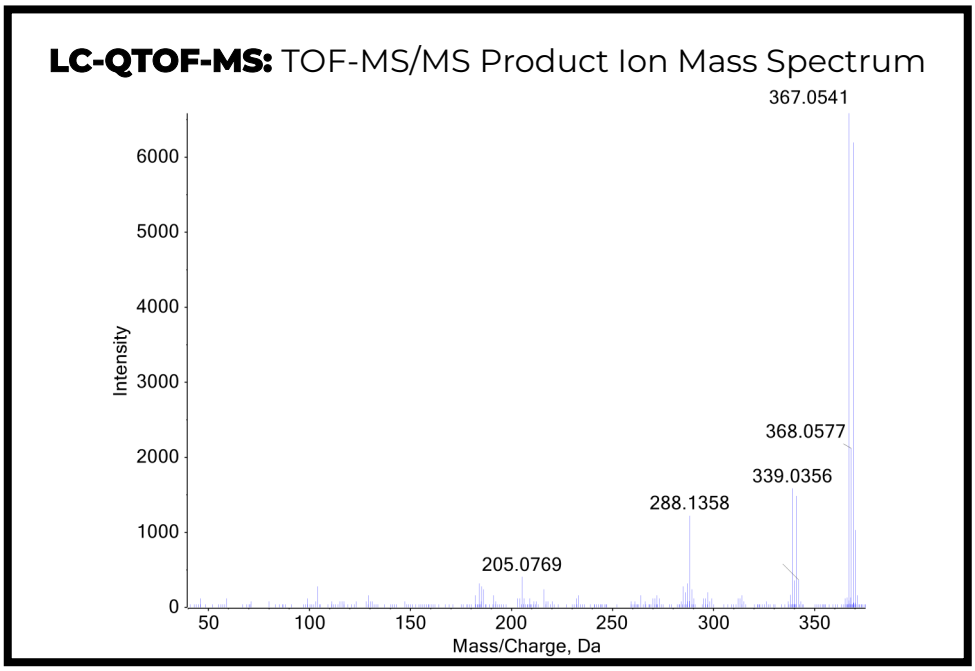
Laboratory: Center for Forensic Science Research and Education (CFSRE, Horsham, PA, USA)

Sample Preparation: Liquid-liquid extraction

Instrument: Sciex X500R LC-QTOF-MS

Methods: LC-QTOF-MS Method Details & Monographs





Confirmation Using Drug Standard: *Reference material for ethylbromazolam (Batch: 0801395-9) was purchased from Cayman Chemical (Ann Arbor, MI, USA). The analyte was confirmed to be ethylbromazolam based on retention time (sample: 7.81 min vs. standard: 8.03 min) and mass spectral data comparisons.*