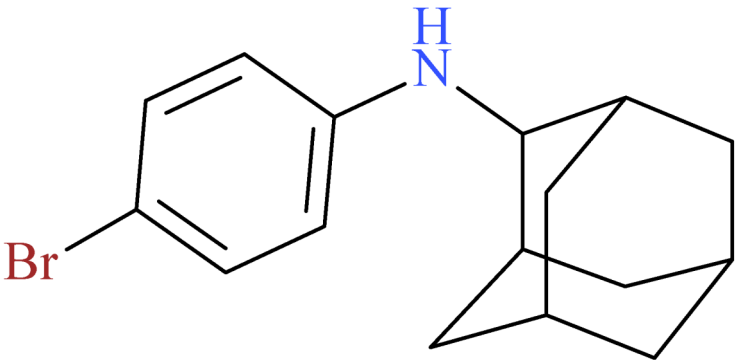
Bromantane



NPS SUBCLASS
Stimulant
REPORT DATE
August 20, 2024
SAMPLE RECEIVED
October 19, 2023
SAMPLE TYPE
Toxicology

Preferred Name	Bromantane
Synonyms	N/A
Formal Name	N-(4-bromophenyl)adamantan-2-amine
InChI Key	LWJALJDRFBXHKX-UHFFFAOYSA-N
CAS Number	87913-26-6
Chemical Formula	$C_{16}H_{20}BrN$
Molecular Weight	306.2
Molecular Ion [M⁺]	305
Exact Mass [M+H]⁺	306.0852

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: Bromantane is a novel stimulant described as an actoprotector and psychostimulant with structural similarity to adamantane and memantine.[1] Bromantane was first synthesized for therapeutic use in Russia in the 1980s and has been used as a performance-enhancing drug.[2] Bromantane was first detected in October 2023 by our laboratory and confirmed in March 2024 after acquiring standard reference material.

Sample Source: Oakland County Medical Examiner (Pontiac, MI)

Sample Appearance: Blood specimen

Pharmacology: Bromantane acts on the GABA receptors to strengthen GABA-inergic mediation and inhibits serotonin and dopamine reuptake.[1]

Toxicology: Bromantane has been identified in one toxicology case to date at the CFSRE.

Drug Materials: Bromantane has not been detected in drug materials to date at the CFSRE.

Demographics / Geographics: Toxicology cases originated from Michigan. Bromantane was found alongside novel benzodiazepines (e.g., bromazolam) and traditional stimulants (e.g., methamphetamine).

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

References:

- Cayman Chemical: Bromantane
- [1]Oliynyk *et al.* (2012) The pharmacology of actoprotectors: Practical application for improvement of mental and physical performance
- [2]Gill (2017) Performance-enhancing drugs: A review

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)

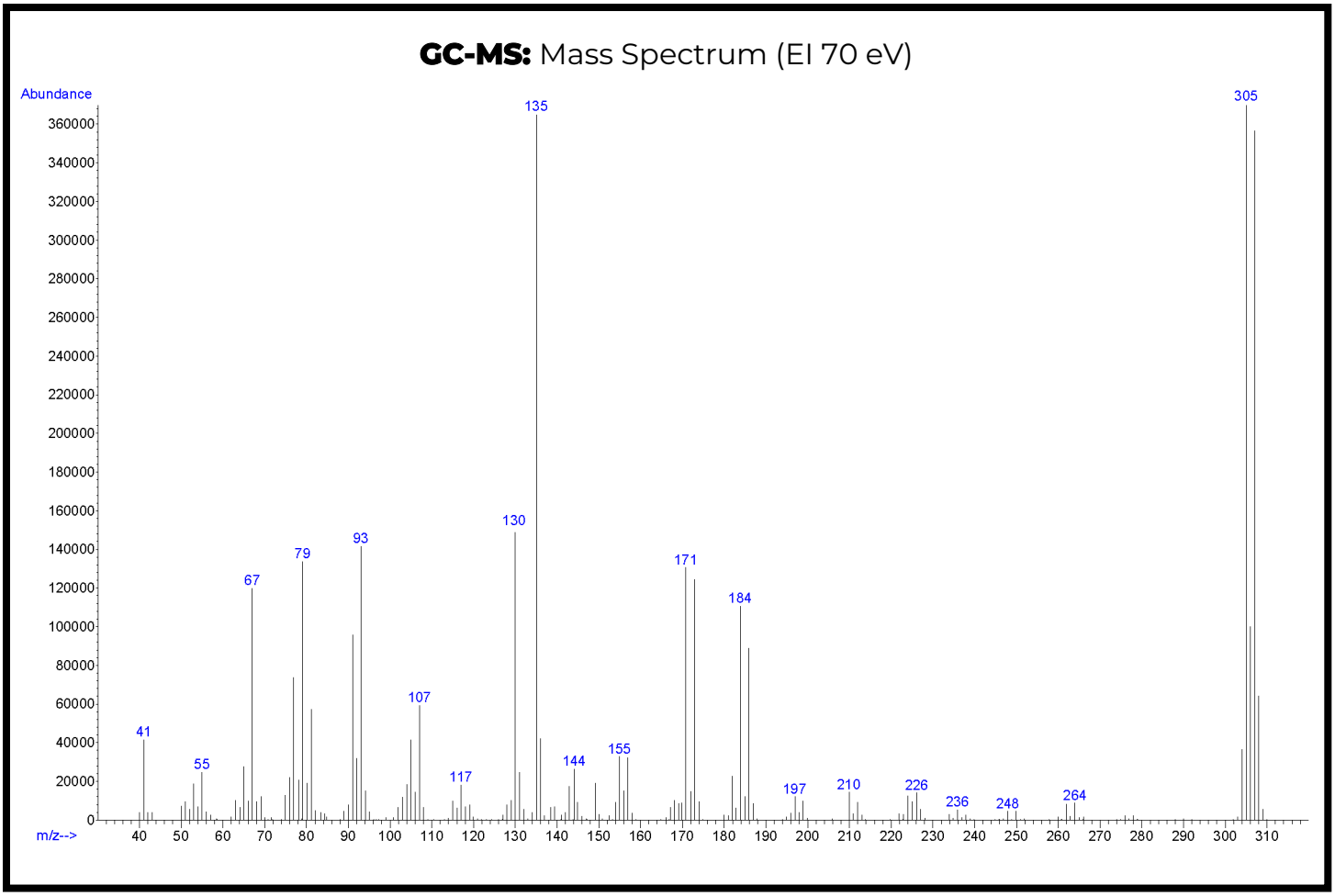
Laboratory: Center for Forensic Science Research and Education (CFSRE, Willow Grove, PA, USA)

Sample Preparation: Standard diluted in methanol

Instrument: Agilent 5975 Series GC/MSD

Methods: GC-MS Method Details & Monographs

GC-MS: Mass Spectrum (EI 70 eV)



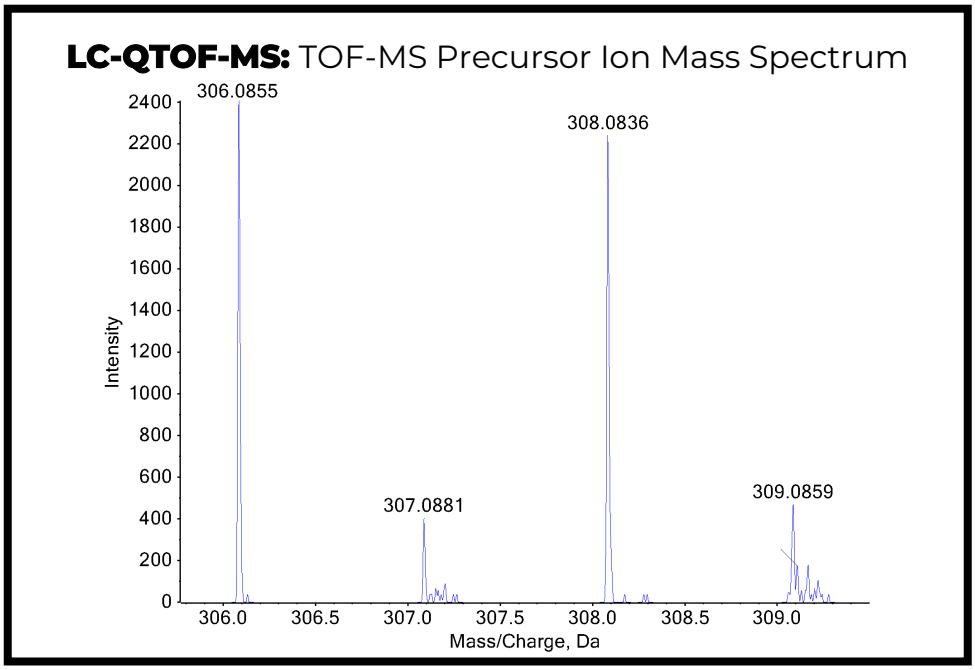
Liquid Chromatography Quadrupole Time-of-Flight Mass Spectrometry (LC-QTOF-MS)

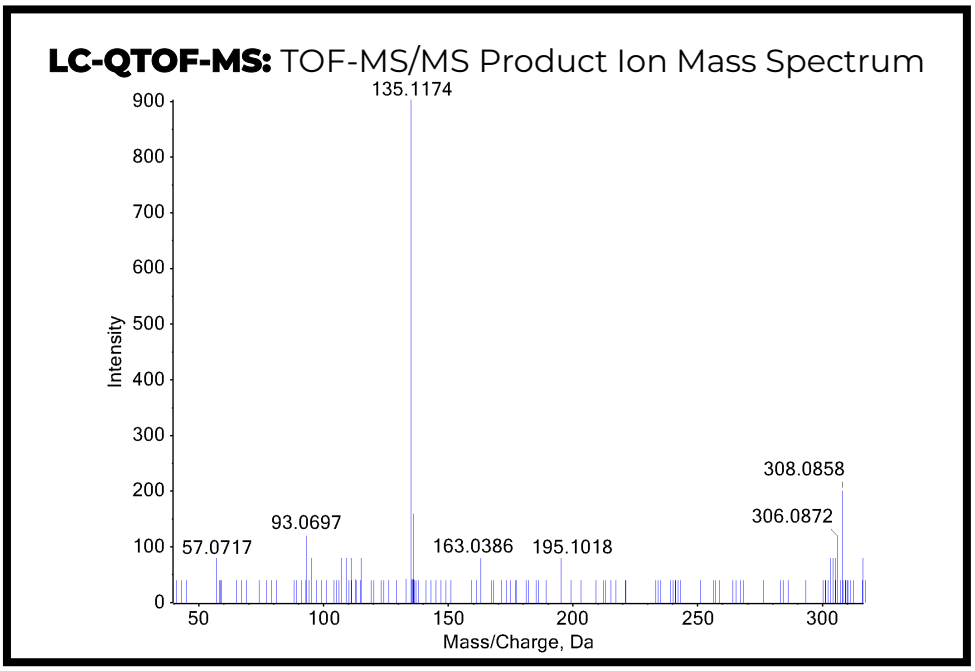
Laboratory: Center for Forensic Science Research and Education (CFSRE, Willow Grove, PA, USA)

Sample Preparation: Liquid-liquid extraction

Instrument: Sciex X500R LC-QTOF-MS

Methods: LC-QTOF-MS Method Details & Monographs





Confirmation Using Drug Standard: *Reference material (Batch: 0531437-8) was purchased from Cayman Chemical (Ann Arbor, MI, USA). The analyte was confirmed to be bromantane based on retention time (sample: 10.88 min vs. standard: 11.06 min) and mass spectral data comparisons.*