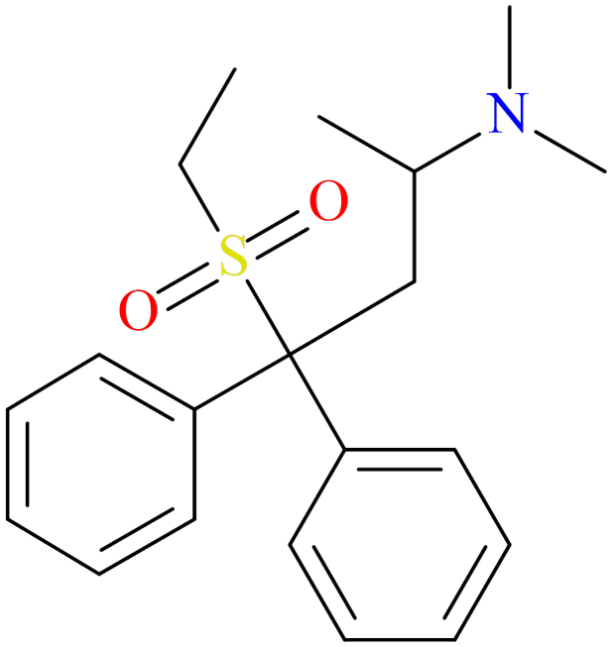
Methiodone



NPS SUBCLASS
Opioid
REPORT DATE
February 10, 2026
SAMPLE RECEIVED
November 5, 2025
SAMPLE TYPE
Drug Material

Preferred Name	Methiodone				
Synonyms	IC-26				
Formal Name	4-(ethylsulfonyl)-N,N-dimethyl-4,4-diphenylbutan-2-amine				
Chemical Formula	$C_{20}H_{27}NO_2S$				
Molecular Weight	345.5	**Molecular Ion [M⁺]**	345	**Exact Mass [M+H]⁺**	346.1835

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, and should not be used for confirmatory purposes alone.

Funding: CFSRE's NPS Discovery is supported by the National Institute of Justice, Office of Justice Programs, U.S. Department of Justice (Award Number 15PNIJ-24-GK-00981-COAP, "Novel Psychoactive Substance Discovery, Education, and Reporting Institute"). The opinions, findings, conclusions and/or recommendations expressed in this publication are those of the author(s) and do not necessarily represent the official position or policies of the U.S. Department of Justice.

Analytical Notes: All identifications were made based on evaluation of analytical data (LC-QTOF-MS) in comparison to analysis of acquired reference material. Methiodone was noted to be thermally unstable during GC-MS analysis; therefore, its suspected breakdown product is included (Page 2).

Acknowledgements: This report was prepared by Brianna N. Stang, Sara E. Walton, Nicholas Khorozov, Max T. Denn, Alexis D. Quinter, Angel McDowell, Joshua S. DeBord, Barry K. Logan, and Alex J. Krotulski at the Center for Forensic Science Research and Education (CFSRE) at the Fredric Rieders Family Foundation. The authors acknowledge scientists at the CFSRE for their involvements and contributions. For more information, contact npsdiscovery@cfsre.org or visit www.npsdiscovery.org.

Suggested Citation: Stang BN, Walton SE, Khorozov N, Denn MT, Quinter AD, McDowell A, DeBord JS, Logan BK, Krotulski AJ. (2026) *Methiodone — NPS Discovery New Drug Monograph*, Center for Forensic Science Research and Education, United States.

Characterization & Intelligence

The following information was compiled in February 2026 and is subject to change as new research is conducted and as new information becomes available:

Description: Methiodone (also known as IC-26) is a novel synthetic opioid bearing structural resemblance to methadone. This drug was first synthesized by Winthrop Laboratories in the 1950s as an antitussive drug.[1,2] Effective doses of methiodone for cough suppression in humans are reported to be 2-4 mg, through it can produce morphine-like effects with single oral doses ranging from 25-70 mg.[2] Wolbach & Fraser hypothesized that methiodone has a potential for addiction similar to that of morphine.[2] Methiodone was first detected in a drug sample containing white material received from New England and has since been detected in five toxicological specimens alongside nitazene analogues and orphine analogues, primarily *N*-propionitrile chlorphine.

References:

- Cayman Chemical: Methiodone
- [1]Sydney et al. (1948): Certain amino hydrocarbon sulfones and process of preparation
- [2]Wolbach et al. (1963): Addiction Liability of I-C-26

Gas Chromatography Mass Spectrometry (GC-MS)

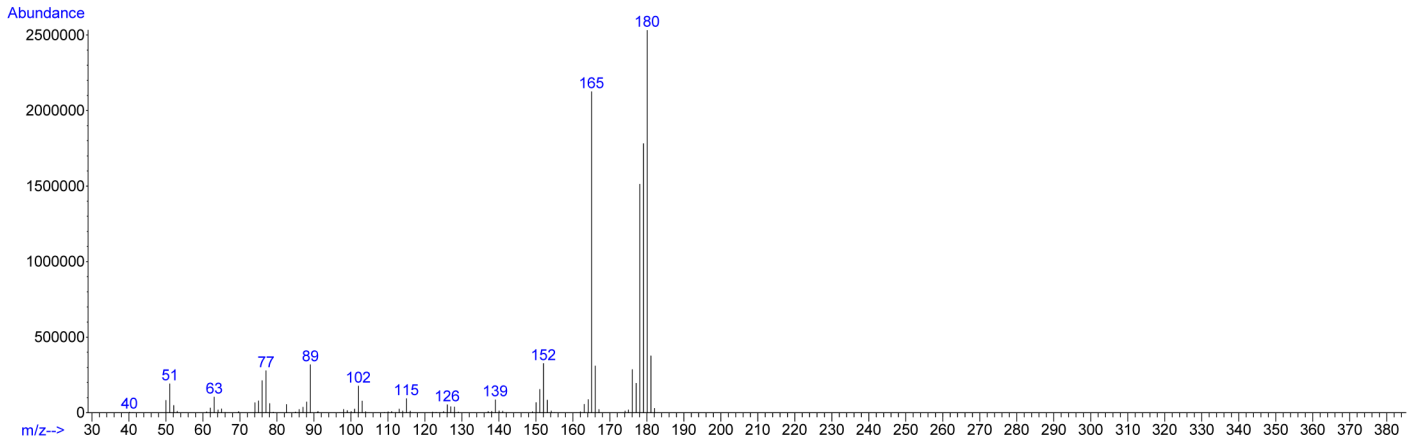
Laboratory: Center for Forensic Science Research and Education (CFSRE, Horsham PA, USA)

Sample Preparation: Acid-base extraction

Instrument: Agilent 5975 Series GC/MSD

Methods: GC-MS Method Details & Monographs

Suspected Breakdown Product — GC-MS: Mass Spectrum (EI 70 eV)



Confirmation Using Drug Standard: *Reference material for methiodone (Batch: 0814795-1) was purchased from Cayman Chemical (Ann Arbor, MI, USA) and analyzed by GC-MS. The above suspected breakdown product was identified and identical after analysis of the sample and reference material based on retention time (sample: 3.89 min vs. standard: 3.89 min) and mass spectral data comparisons.*

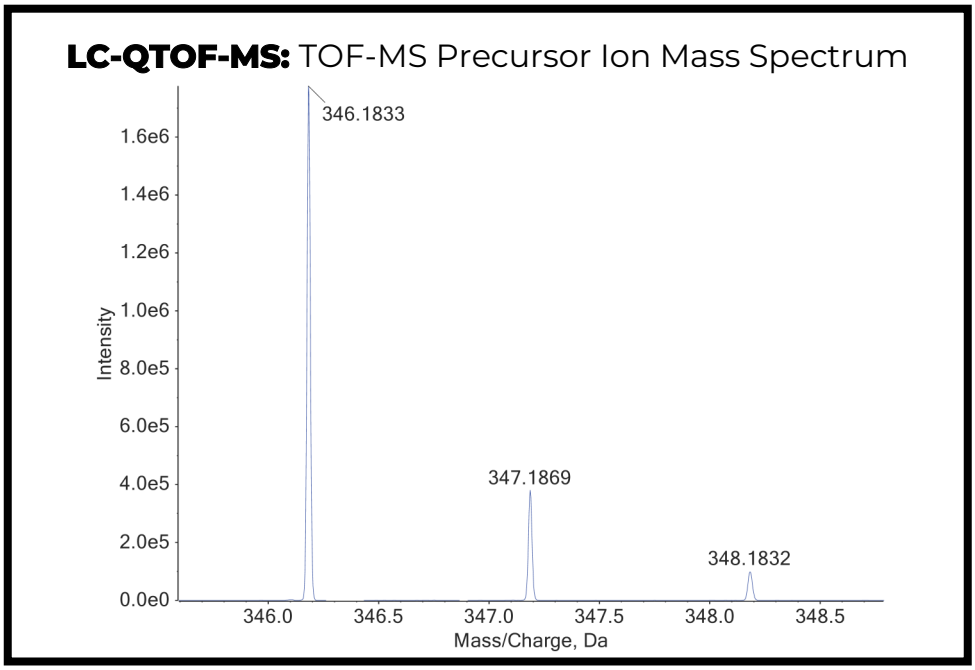
Liquid Chromatography Quadrupole Time-of-Flight Mass Spectrometry (LC-QTOF-MS)

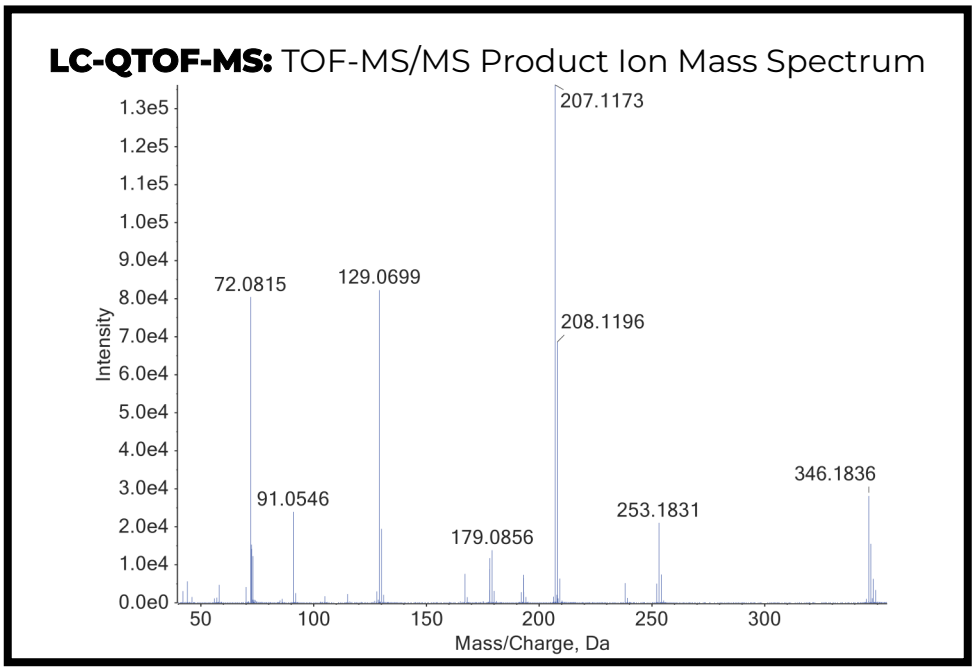
Laboratory: Center for Forensic Science Research and Education (CFSRE, Horsham, PA, USA)

Sample Preparation: Dilution in mobile phase

Instrument: Sciex 5600+ LC-QTOF-MS

Methods: LC-QTOF-MS Method Details & Monographs





Confirmation Using Drug Standard: *Reference material for methiodone (Batch: 0814795-1) was purchased from Cayman Chemical (Ann Arbor, MI, USA). The analyte was confirmed to be methiodone based on retention time (sample: 6.16 min vs. standard: 6.24 min) and mass spectral data comparisons.*