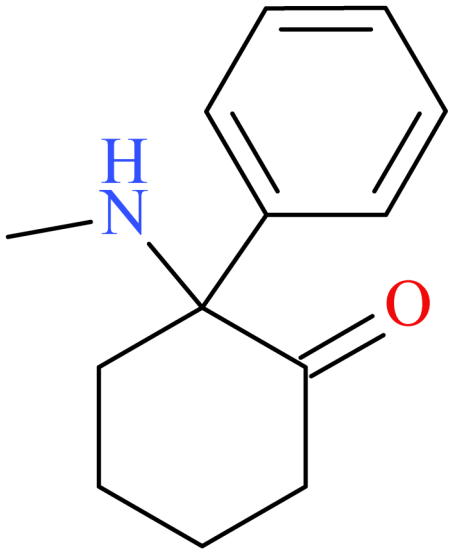
Deschloroketamine



NPS SUBCLASS
Hallucinogen
REPORT DATE
October 31, 2025
SAMPLE RECEIVED
July 7, 2025
SAMPLE TYPE
Drug Material

Preferred Name	Deschloroketamine
Synonyms	O-PCM, Deschloro-*N*-methyl-Ketamine, 2'-oxo-PCM, DXE, DCK
Formal Name	2-(methylamino)-2-phenyl-cyclohexanone
InChI Key	ZAGBSZSITDFFAF-UHFFFAOYSA-N
CAS Number	4631-27-0
Chemical Formula	$C_{13}H_{17}NO$
Molecular Weight	203.3
Molecular Ion [M⁺]	203
Exact Mass [M+H]⁺	204.1383

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: Deschloroketamine is a novel hallucinogen and is categorized as an arylcyclohexylamine and a structural analog of ketamine. Deschloroketamine was originally synthesized as an immunomodulation agent for the treatment of infections; however, has since been identified in seized drug materials and for sale on online forums.[1,2] Deschloroketamine was first identified by our laboratory in July 2025 and confirmed after acquiring standard reference material.

Sample Source: In Collaboration with StreetCheck

Sample Appearance: Colorless plastic bag containing residue

Pharmacology: Deschloroketamine is reported to be an antagonist at the *N*-methyl-*D*-aspartate (NMDA) receptor[3].

Toxicology: Deschloroketamine has been detected in at least five toxicology cases to date at the CFSRE.

Drug Materials: Deschloroketamine has been detected in five drug materials to date at the CFSRE.

Demographics / Geographics: Drug materials originated from New England, Pennsylvania, and Illinois. Deschloroketamine was identified alone and alongside ketamine.

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

References:

- Cayman Chemical: Deschloroketamine
- [1]Jurasek et al. (2018) Synthesis, absolute configuration, and in vitro cytotoxicity of deschloroketamine...
- [2]Frison et al (2016) Characterization of the designer drug deschloroketamine...
- [3]Stefkova-Mazochova et al (2022) Pharmacokinetic, pharmacodynamic, and behavioral studies...

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.

Acknowledgements: This report was prepared by Sara E. Walton, Abigail Edelmann, Charlie Summers, Traci Green, 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.

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.

Suggested Citation: Walton, SE; Edelmann, A; Summers, C; Green, T; Denn, MT; Quinter, AD; McDowell, A; DeBord, JS; Logan, BK; Krotulski, AJ. (2025) *Deschloroketamine — NPS Discovery New Drug Monograph*, Center for Forensic Science Research and Education, United States.

Gas Chromatography Mass Spectrometry (GC-MS)

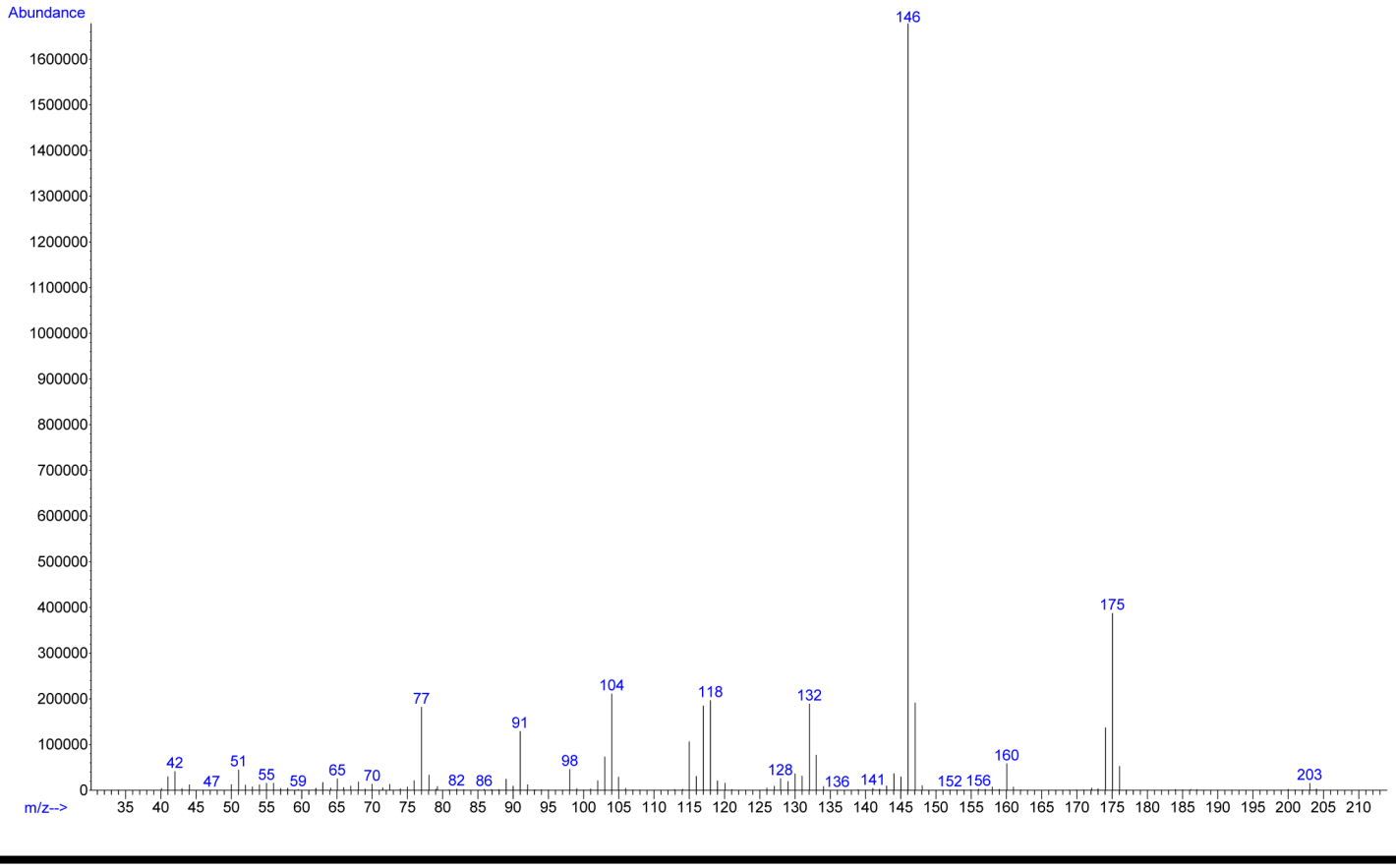
Laboratory: Center for Forensic Science Research and Education (CFSRE, Horsham PA, USA)

Sample Preparation: Acid-base extraction

Instrument: Agilent 5975 Series GC/MSD

Methods: GC-MS Method Details & Monographs

GC-MS: Mass Spectrum (EI 70 eV)



Confirmation Using Drug Standard: *Reference material for deschloroketamine (Batch: 0623793-7) was purchased from Cayman Chemical (Ann Arbor, MI, USA). The analyte was confirmed to be deschloroketamine based on retention time (sample: 4.46 min vs. standard: 4.41 min) and mass spectral data comparisons.*

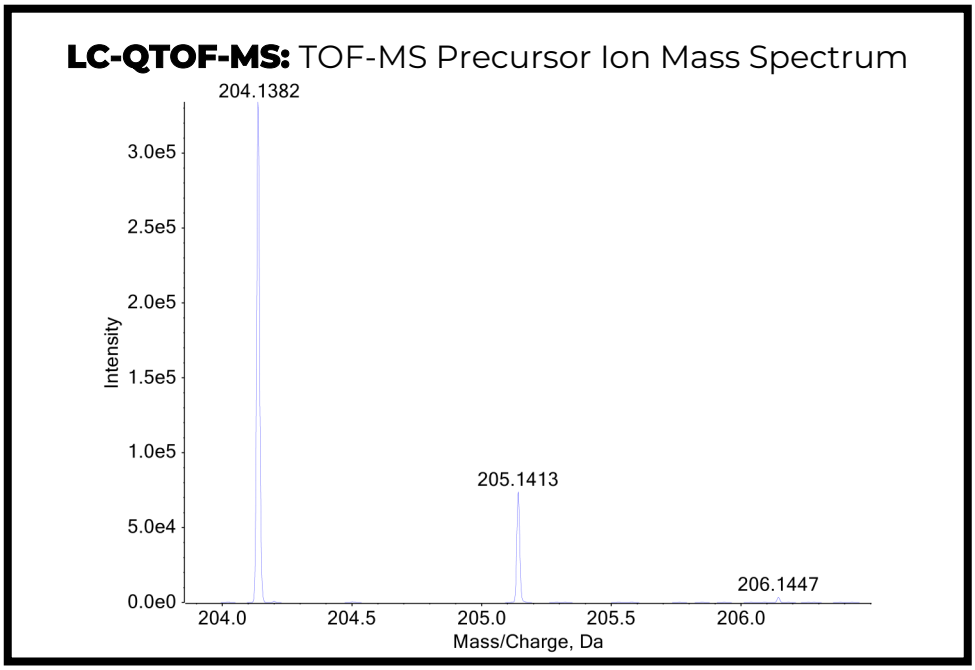
Liquid Chromatography Quadrupole Time-of-Flight Mass Spectrometry (LC-QTOF-MS)

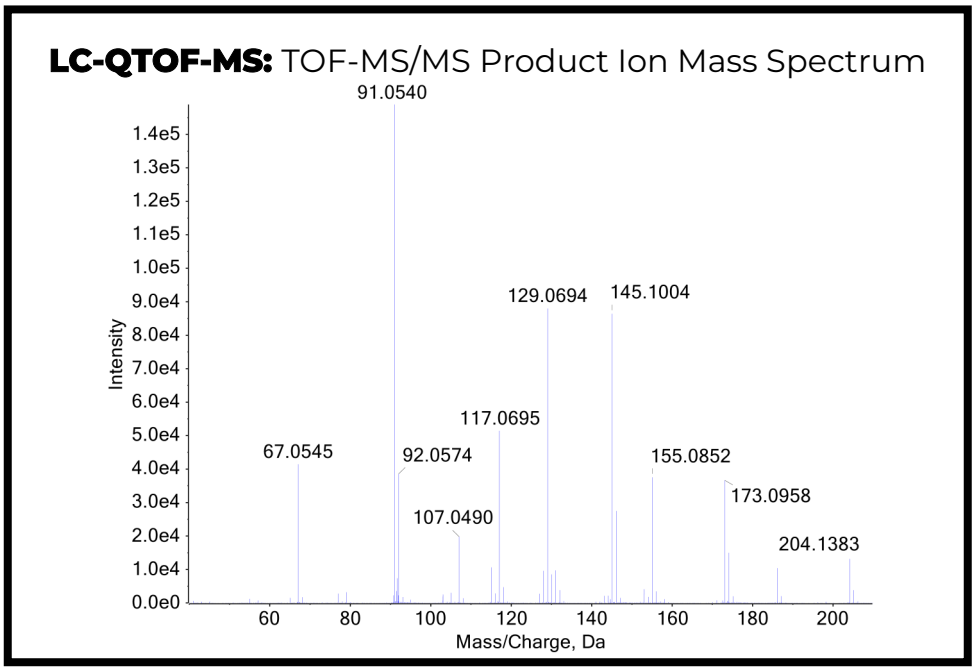
Laboratory: Center for Forensic Science Research and Education (CFSRE, Horsham, PA, USA)

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 deschloroketamine (Batch: 0623793-7) was purchased from Cayman Chemical (Ann Arbor, MI, USA). The analyte was confirmed to be deschloroketamine based on retention time (sample: 4.16 min vs. standard: 4.29 min) and mass spectral data comparisons.*