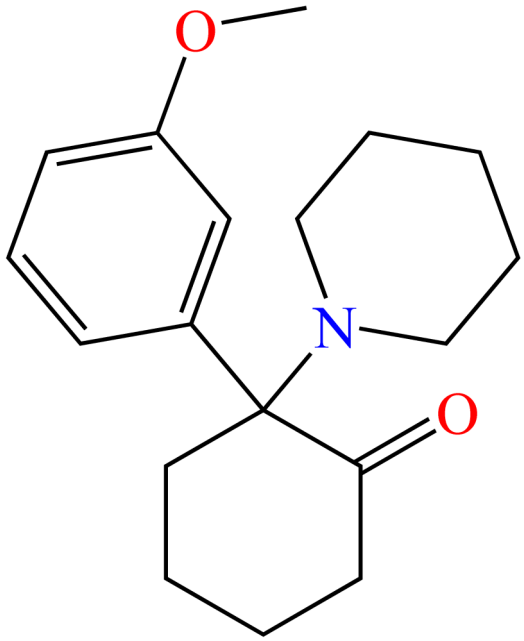
3MeO-2oxo-PCP



NPS SUBCLASS
Hallucinogen
REPORT DATE
April 22, 2026
SAMPLE RECEIVED
March 20, 2026
SAMPLE TYPE
Toxicology

Preferred Name	3MeO-2oxo-PCP				
Synonyms	3-Methoxy-2-oxo PCP, 3-Methoxy-2-oxo Phencyclidine				
Formal Name	2-(3-methoxyphenyl)-2-(piperidin-1-yl)cyclohexan-1-one				
Chemical Formula	$C_{18}H_{25}NO_2$				
Molecular Weight	287.4	**Molecular Ion [M⁺]**	287	**Exact Mass [M+H]⁺**	288.1958

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 (GC-MS and LC-QTOF-MS) in comparison to analysis of acquired reference material.

Acknowledgements: This report was prepared by Brianna N. Stang, Sara E. Walton, Isabella Buttacavoli, Savannah Baker, Lauren K. Eccarius, 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, Buttacavoli I, Baker S, Eccarius LK, Logan BK, Krotulski AJ. (2026) *3MeO-2oxo-PCP — NPS Discovery New Drug Monograph*, Center for Forensic Science Research and Education, United States.

Characterization & Intelligence

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

Description: 3MeO-2oxo-PCP is a novel synthetic hallucinogen classified as an arylcyclohexylamine bearing structural resemblance to other phencyclidine (PCP) analogues (e.g., 3,4-methylenedioxy-PCP, 2oxo-PCP, 3MeO-PCP). No information is currently available on the pharmacology of 3MeO-2oxo-PCP; however, based on structural similarities to other arylcyclohexylamine analogues, it is hypothesized that 3MeO-2oxo-PCP acts as a non-competitive antagonist of the *N*-methyl-*D*-aspartate (NMDA) receptor and can cause various effects including tachycardia, hypertension, confusion, agitation, and hallucinations.[1-4] 3MeO-2oxo-PCP was first identified at the CFSRE in a postmortem peripheral blood specimen from California in March 2026 and was detected alongside mitragynine. 3MeO-2oxo-PCP has been identified in one drug material to date at the CFSRE. 3MeO-2oxo-PCP is not currently scheduled in the United States.

References:

- Cayman Chemical: 3MeO-2oxo-PCP
- [1]PePe et al. (2024): 3-Methoxy Phencyclidine Induced Psychotic Disorder: A Literature Review ...
- [2]Berar et al. (2019): Intoxication with 3-MeO-PCP alone: A case report and literature review
- [3]Mitsuoka et al. (2019): Assessment of NMDA receptor inhibition of phencyclidine analogues using ...
- [4]Roth et al. (2013): The Ketamine Analogue Methoxetamine and 3– and 4– Methoxy Analogues of Phencyclidine ...

Gas Chromatography Mass Spectrometry (GC-MS)

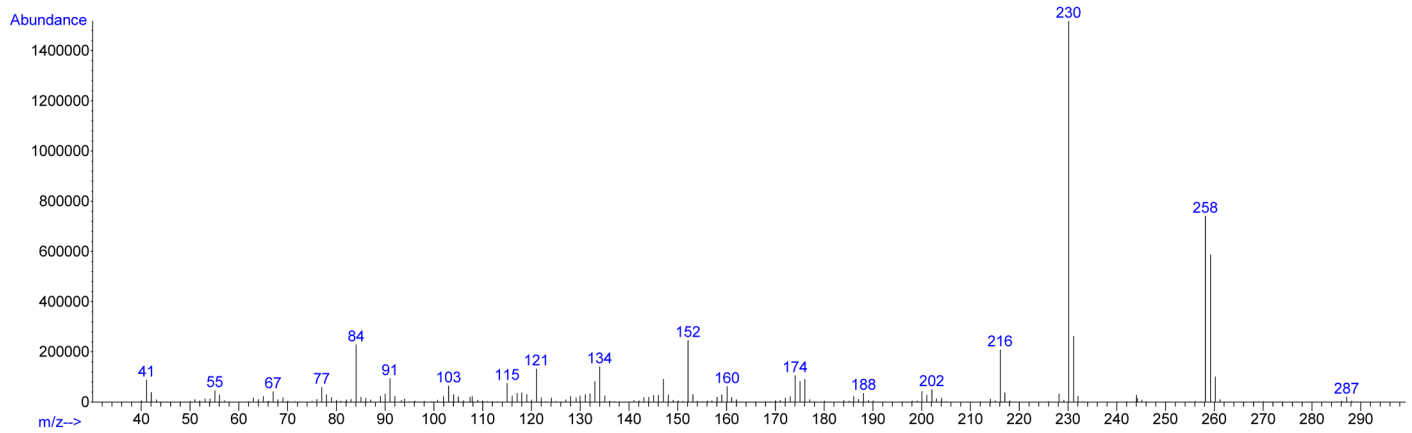
Laboratory: Center for Forensic Science Research and Education (CFSRE, Horsham PA, USA)

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)

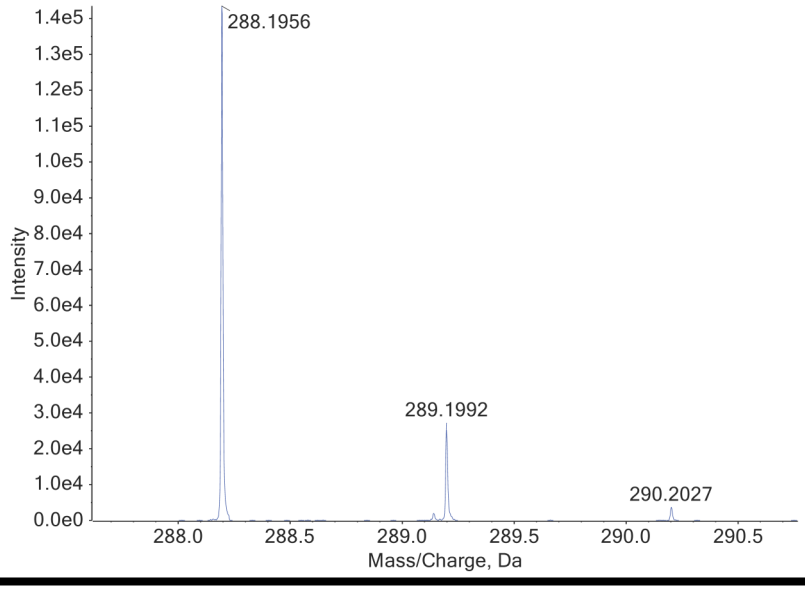
Laboratory: Center for Forensic Science Research and Education (CFSRE, Horsham, PA, USA)

Sample Preparation: Liquid-liquid extraction

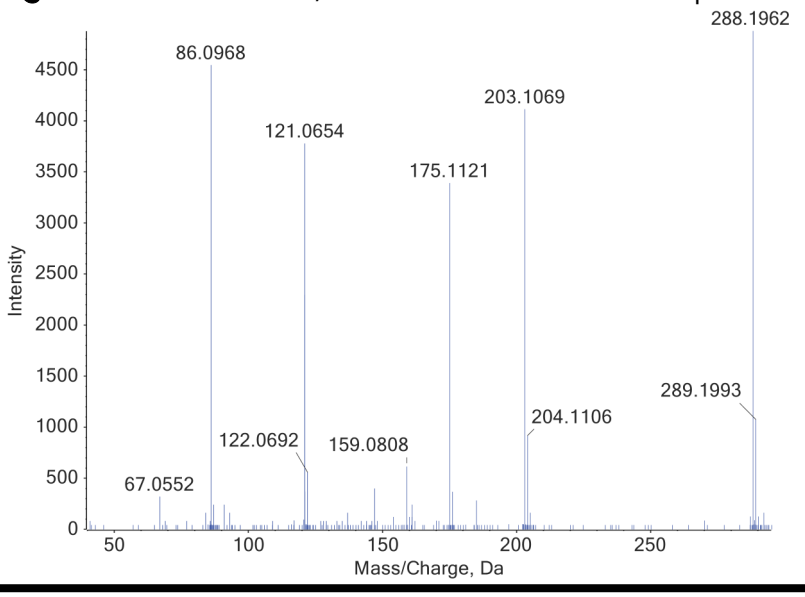
Instrument: Sciex X500R LC-QTOF-MS

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 for 3MeO-2oxo-PCP (Batch: 0812356-2) was purchased from Cayman Chemical (Ann Arbor, MI, USA). The analyte was confirmed to be 3MeO-2oxo-PCP based on retention time (sample: 5.28 min vs. standard: 5.26 min) and mass spectral data comparisons.*