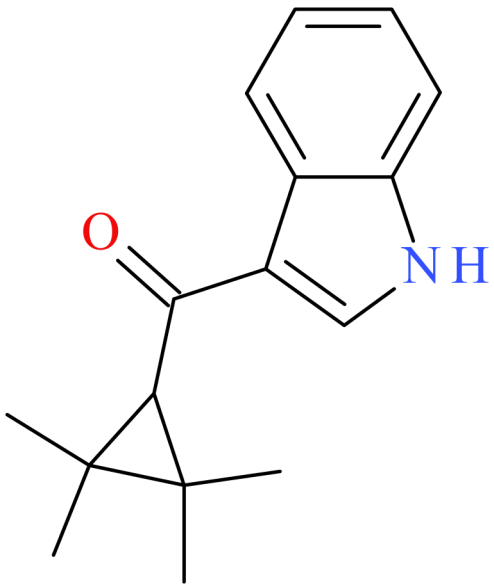
Despentyl-UR-144



NPS SUBCLASS
Synthetic Cannabinoid
REPORT DATE
November 4, 2025
SAMPLE RECEIVED
July 22, 2025
SAMPLE TYPE
Drug Material

Preferred Name	Despentyl-UR-144
Synonyms	DP-UR-144
Formal Name	1H-indol-3-yl-(2,2,3,3-tetramethylcyclopropyl)methanone
InChI Key	WYZQBEQQQKCTHM-UHFFFAOYSA-N
CAS Number	895152-66-6
Chemical Formula	$C_{16}H_{19}NO$
Molecular Weight	241.3
Molecular Ion [M⁺]	241
Exact Mass [M+H]⁺	242.1539

Characterization & Intelligence

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

Description: Despentyl-UR-144 is a categorized as a precursor in the synthesis of synthetic cannabinoids (e.g., XLR-11 analogs, UR-144 analogs, etc.). Despentyl-UR-144 was first identified in Tokyo in 2014 alongside the synthetic cannabinoid FUB-144.[1] Despentyl-UR-144 was first identified by our laboratory in July 2025 and confirmed after acquiring standard reference material.

Sample Source: Colombo, Sri Lanka

Sample Appearance: White powder

Pharmacology: Despentyl-UR-144 is reported to have affinity for the CB_1 and CB_2 cannabinoid receptors with half-maximal effective concentrations (EC_{50}) of 2,360 nM and 27.9 nM, respectively.[1]

Toxicology: Despentyl-UR-144 has not been detected in toxicology cases to date at the CFSRE.

Drug Materials: Despentyl-UR-144 has been detected in one drug material to date at the CFSRE.

Demographics / Geographics: The drug material originated from Colombo, Sri Lanka. Despentyl-UR-144 was identified alone.

Legal Status: Despentyl-UR-144 is not currently scheduled in the United States.

References:

- Cayman Chemical: DP-UR-144
- [1]Ichikawa et al. (2016) Identification of (1H-indol-3-yl)(2,2,3,3-tetramethylcyclopropyl)methanone (DP-UR-144)...

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, Max T. Denn, 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.

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Gas Chromatography Mass Spectrometry (GC-MS)

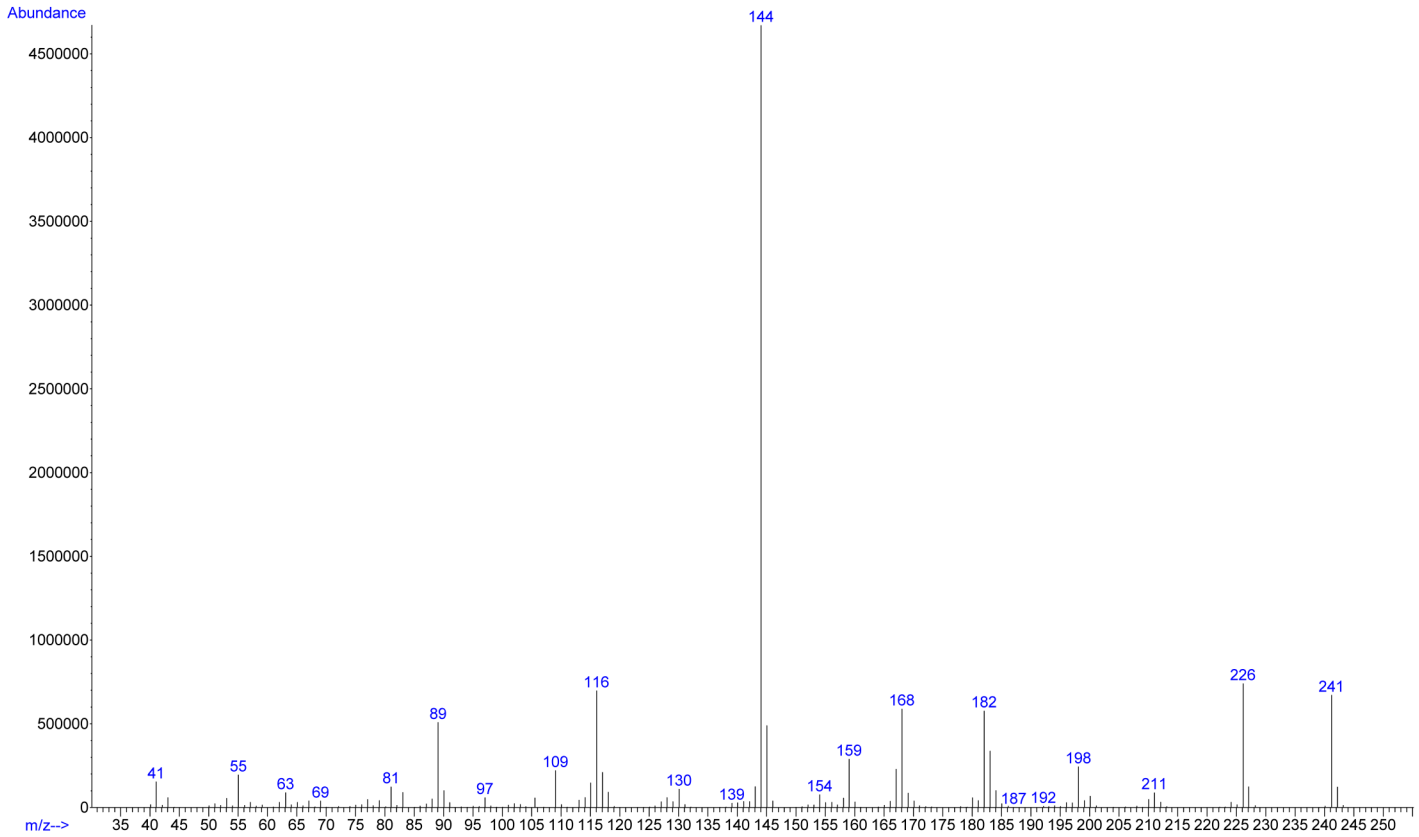
Laboratory: Center for Forensic Science Research and Education (CFSRE, Horsham PA, USA)

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 Despentyl-UR-144 (Batch: 0459658-27) was purchased from Cayman Chemical (Ann Arbor, MI, USA). The analyte was confirmed to be Despentyl-UR-144 based on retention time (sample: 6.51 min vs. standard: 6.50 min) and mass spectral data comparisons.*

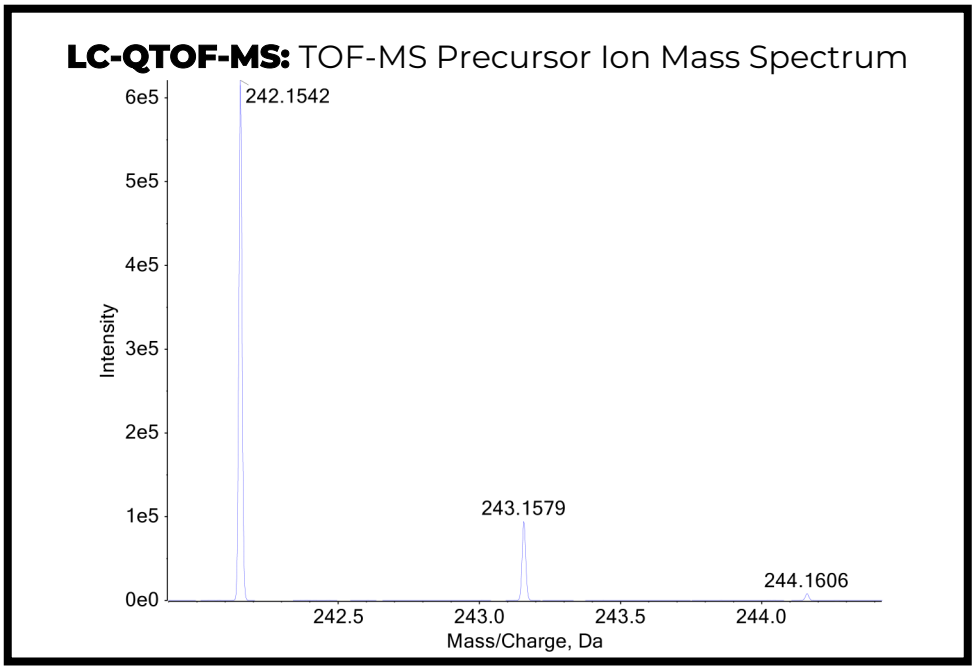
Liquid Chromatography Quadrupole Time-of-Flight Mass Spectrometry (LC-QTOF-MS)

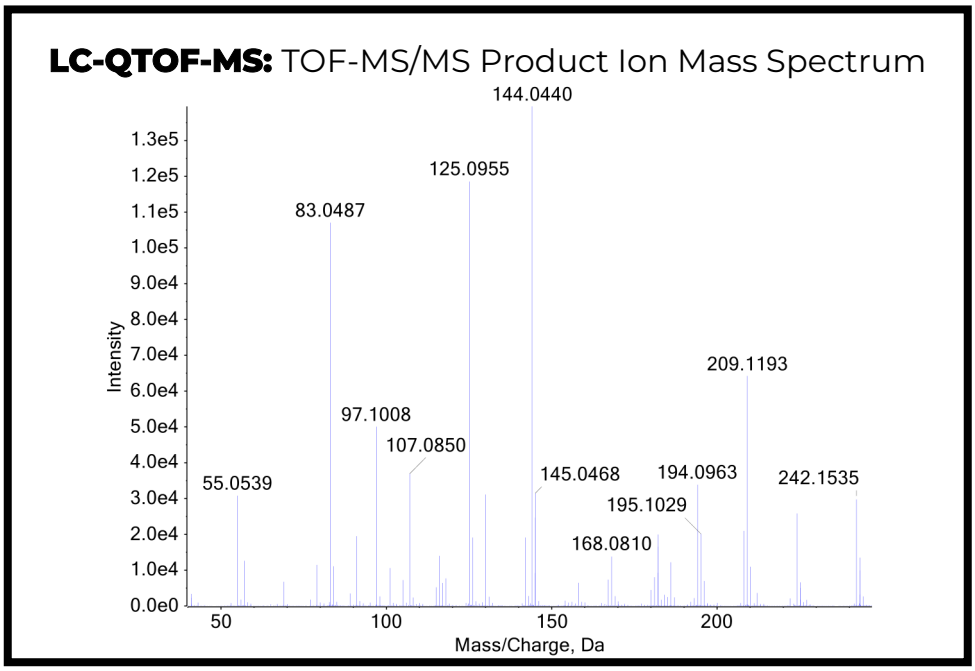
Laboratory: Center for Forensic Science Research and Education (CFSRE, Horsham, PA, USA)

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 Despentyl-UR-144 (Batch: 0459658-27) was purchased from Cayman Chemical (Ann Arbor, MI, USA). The analyte was confirmed to be Despentyl-UR-144 based on retention time (sample: 8.62 min vs. standard: 8.71 min) and mass spectral data comparisons.*