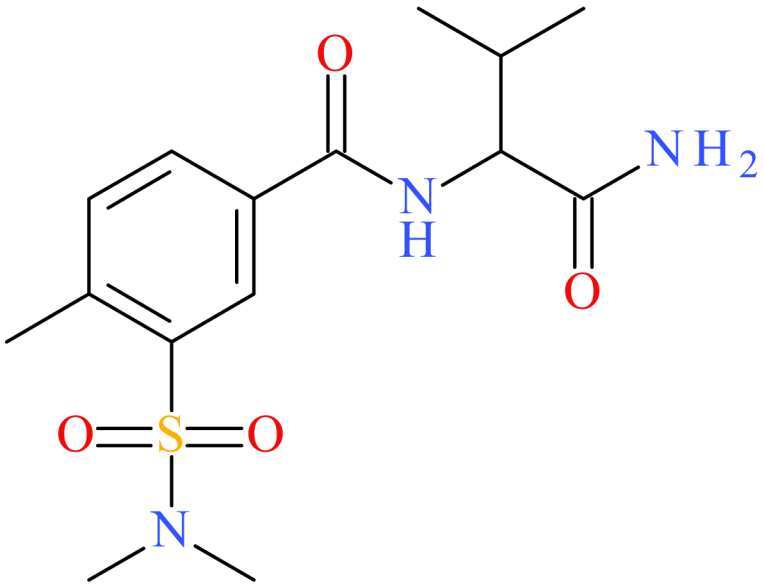
AB-MDMSBA



NPS SUBCLASS
Cannabinoid
REPORT DATE
June 20, 2025
SAMPLE RECEIVED
January 3, 2025
SAMPLE TYPE
Drug Material

Preferred Name	AB-MDMSBA
Synonyms	AMB-MDMSBA
Formal Name	N-(1-carbamoyl-2-methyl-propyl)-3-(dimethylsulfamoyl)-4-methyl-benzamide
InChI Key	KYNAATZHNRULED-UHFFFAOYSA-N
CAS Number	N/A
Chemical Formula	$C_{15}H_{23}N_3O_4S$
Molecular Weight	341.4
Molecular Ion [M⁺]	341
Exact Mass [M+H]⁺	342.1482

Characterization & Intelligence

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

Description: AB-MDMSBA is a synthetic cannabinoid. AB-MDMSBA was first identified in the United States in September 2024 and since has been reported in Canada, New Zealand, and Australia.[1,2,3] AB-MDMSBA was identified by our laboratory in January 2025 and confirmed after acquiring standard reference material.

Sample Source: NMS Labs — Forensic Drug Chemistry (Willow Grove, PA)

Sample Appearance: Brown powder

Pharmacology: No information is available for the activity and potency of AB-MDMSBA.

Toxicology: AB-MDMSBA has not been detected in toxicology cases to date at the CFSRE.

Drug Materials: AB-MDMSBA has been detected in one drug material to date at the CFSRE.

Demographics / Geographics: The drug material originated from Indiana. AB-MDMSBA was found alone, without the presence of other drugs or substances.

Legal Status: AB-MDMSBA is not currently scheduled in the United States.

References:

- Cayman Chemical: AB-MDMSBA
- [1]TheKnow: Synthetic cannabinoid AB-MDMSBA found in 'benzodiazepine' samples
- [2]Fraser Health: Drug alert: beige powder sold as fentanyl tested positive for high concentrations...
- [3]Drug Analysis Service: SATA early warning system of the Americas alert

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, Nicole Lattanzio, Michael Kanwischer, Kyle Brown, Branden Brunner, Melanie Liston, 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 and NMS Labs 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; Lattanzio, N; Kanwischer, M; Brown, K; Brunner, B; Liston, M; Denn, MT; Quinter, AD; McDowell, A; DeBord, JS; Logan, BK; Krotulski, AJ. (2025) *AB-MDMSBA — NPS Discovery New Drug Monograph*, Center for Forensic Science Research and Education, United States.

Gas Chromatography Mass Spectrometry (GC-MS)

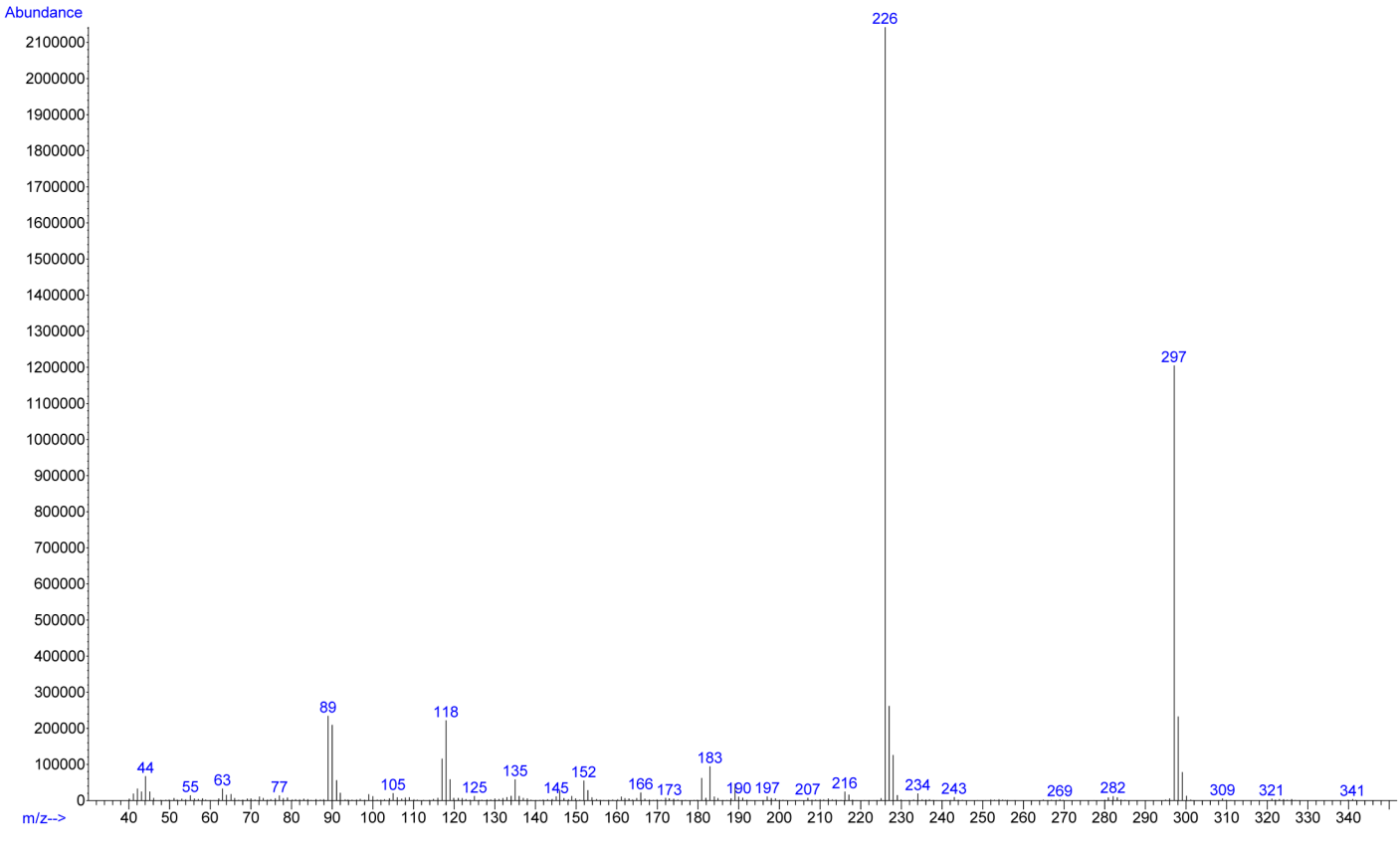
Laboratory: Center for Forensic Science Research and Education (CFSRE, Horsham PA, USA)

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 AB-MDMSBA (Batch: 0721206-7) was purchased from Cayman Chemical (Ann Arbor, MI, USA). The analyte was confirmed to be AB-MDMSBA based on retention time (sample: 8.04 min vs. standard: 7.96 min) and mass spectral data comparisons.*

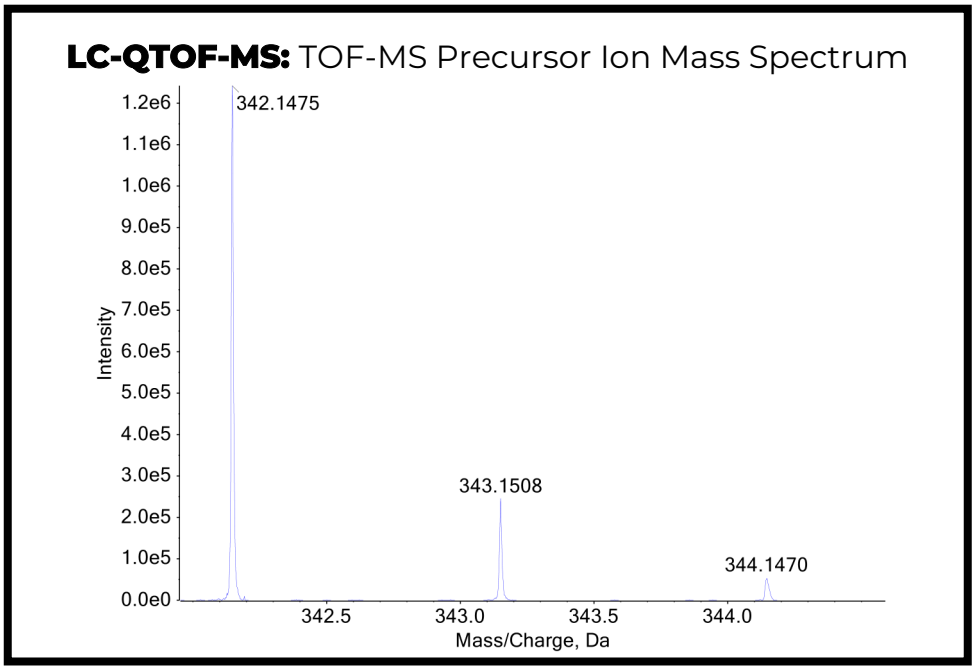
Liquid Chromatography Quadrupole Time-of-Flight Mass Spectrometry (LC-QTOF-MS)

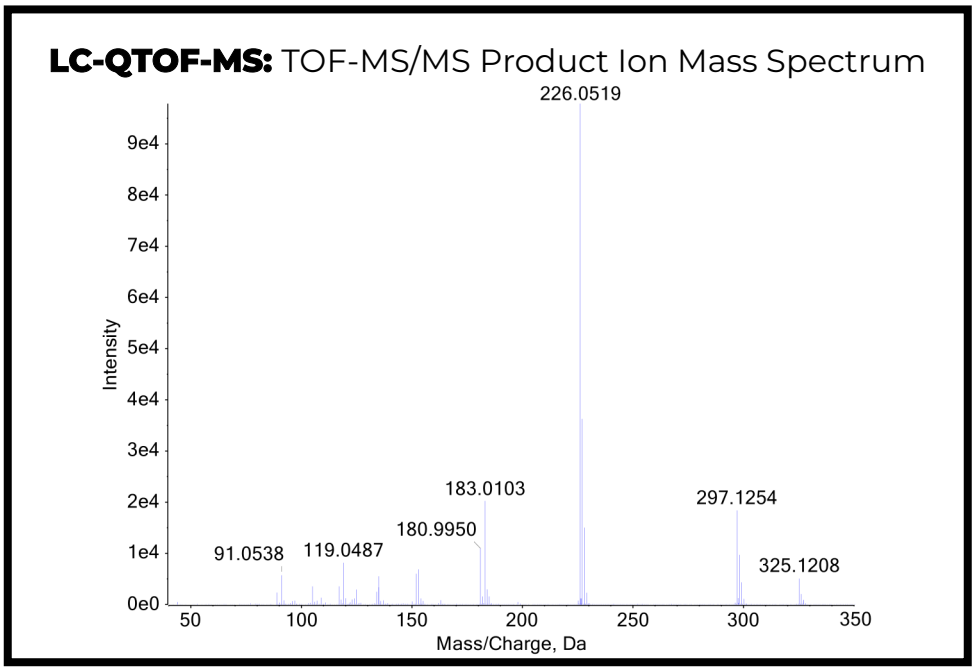
Laboratory: Center for Forensic Science Research and Education (CFSRE, Horsham, PA, USA)

Sample Preparation: Dilution in mobile phase

Instrument: Sciex X500R LC-QTOF-MS

Methods: LC-QTOF-MS Method Details & Monographs





Confirmation Using Drug Standard: *Reference material for AB-MDMSBA (Batch: 0721206-7) was purchased from Cayman Chemical (Ann Arbor, MI, USA). The analyte was confirmed to be AB-MDMSBA based on retention time and mass spectral data comparisons.*