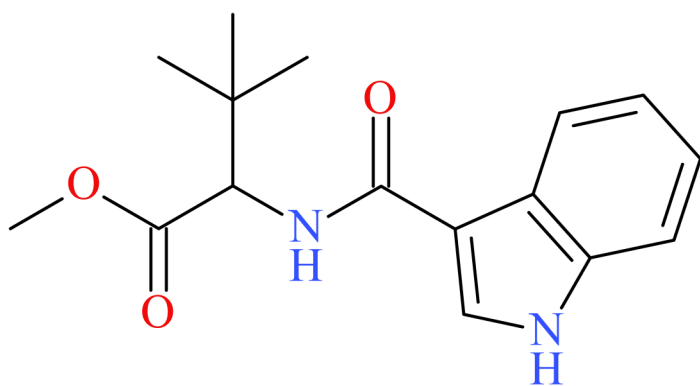




MDMB-ICA



NPS SUBCLASS
Synthetic Cannabinoid
REPORT DATE
November 28, 2023
SAMPLE RECEIVED
September 8, 2023
SAMPLE TYPE
Toxicology

Preferred Name	MDMB-ICA
Synonyms	Not Applicable
Formal Name	methyl 2-(1H-indole-3-carbonylamino)-3,3-dimethyl-butanoate
InChI Key	HNWYJFLJOPRUIA-UHFFFAOYSA-N
CAS Number	2741575-87-9
Chemical Formula	C ₁₆ H ₂₀ N ₂ O ₃
Molecular Weight	288.34
Molecular Ion [M ⁺]	288
Exact Mass [M+H] ⁺	289.1547

Characterization & Intelligence

The following information was compiled in November 2023 and is subject to change as new research is conducted and as new information becomes available:

Description: MDMB-ICA is a synthetic cannabinoid precursor that can be used to produce MDMB-PICA and other structurally related synthetic cannabinoids. To date, MDMB-ICA has appeared alongside only MDMB-PICA in drug materials and/or toxicology samples tested by our laboratory in the United States. Synthetic cannabinoid precursors (e.g., MDMB-INACA, ADB-INACA, MDMB-5'Br-INACA) began appearing after the implementation of a national class-wide synthetic cannabinoid scheduling action imposed by China in July 2021.

Sample Source: Northern Tier Research (Pennsylvania)

Sample Appearance: Toxicology specimens (extracts)

Pharmacology: The activity and potency of MDMB-ICA are unknown; however, based on structurally similar synthetic cannabinoid precursors, MDMB-ICA is expected to be inactive or have low potency.

Toxicology: MDMB-ICA has been detected in six toxicology samples at the CFSRE.

Drug Materials: MDMB-ICA has not been identified in drug materials to date at the CFSRE.

Demographics / Geographics: Samples originated from the state of Pennsylvania.

Legal Status: MDMB-ICA is not explicitly scheduled in the United States.

References:

- ▶ Cayman Chemical: [MDMB-ICA](#)

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

Acknowledgements: This report was prepared by Alex J. Krotulski, Larissa Sorochka, Michael Coyer, Sara E. Walton, Melissa F. Fogarty, and Barry K. Logan 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-22-GG-04434-MUMU, "Implementation of NPS Discovery – An Early Warning System for Novel Drug Intelligence, Surveillance, Monitoring, Response, and Forecasting using Drug Materials and Toxicology Populations in the US"). 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: Krotulski, AJ; Sorochka, L; Coyer, M; Walton, SE; Fogarty, MF; Logan, BK. (2023) *MDMB-ICA — NPS Discovery New Drug Monograph*, Center for Forensic Science Research and Education, United States.

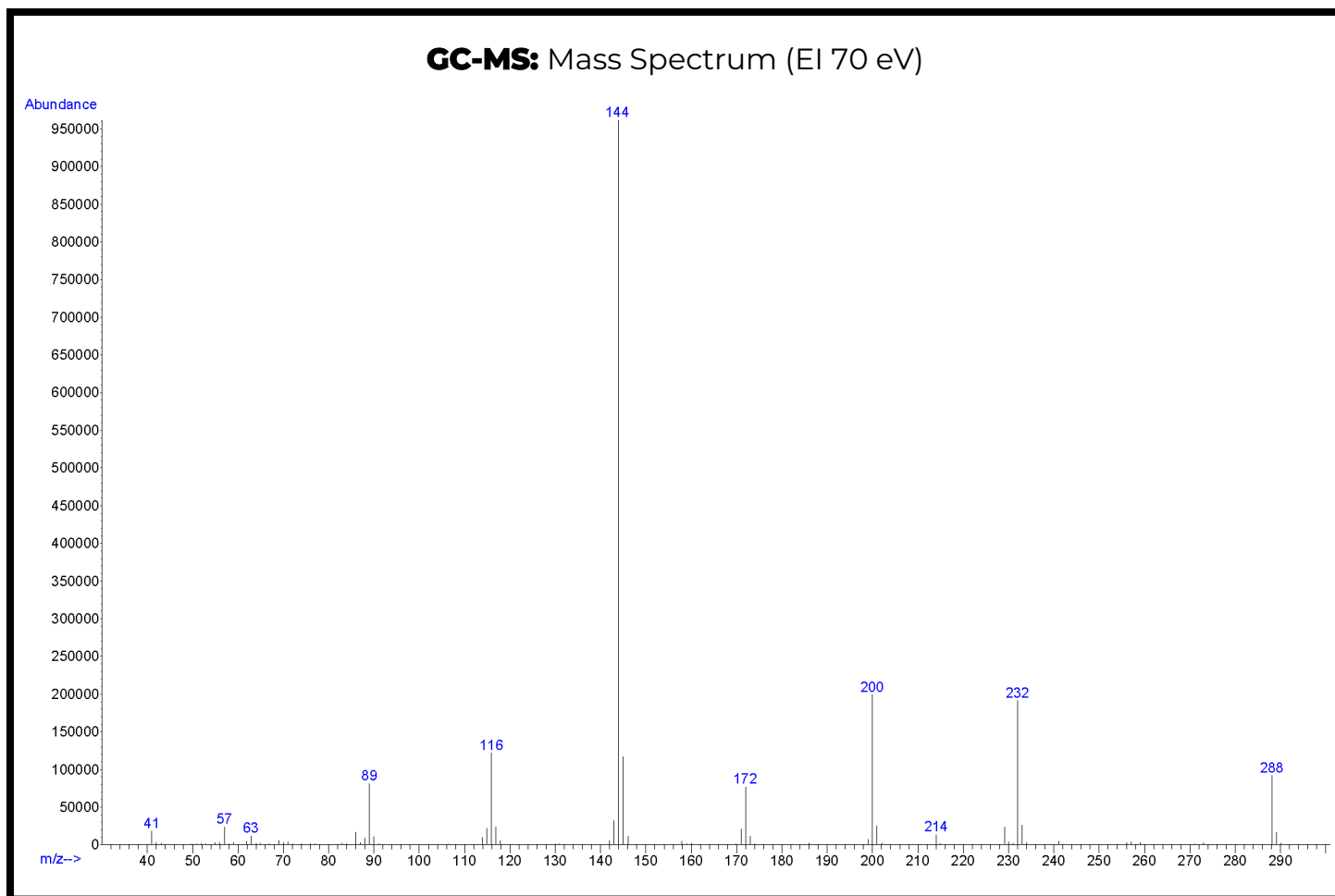
Gas Chromatography Mass Spectrometry (GC-MS)

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

Instrument: Agilent 5975 Series GC/MSD

Sample Preparation: Standard diluted in methanol

Methods: www.cfsre.org/nps-discovery/monographs
[GC-MS Method Details](#)



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

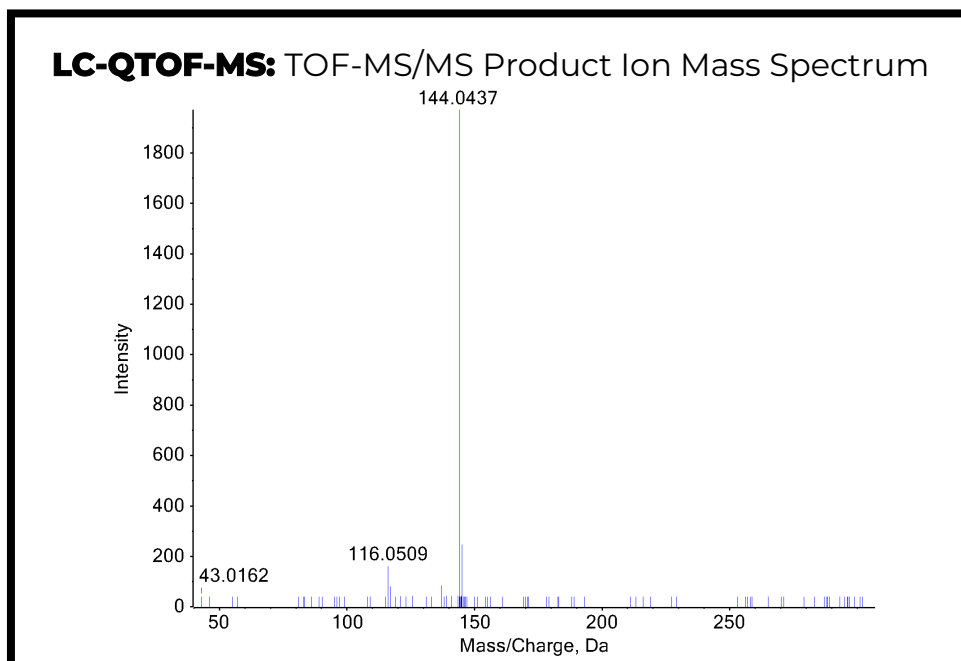
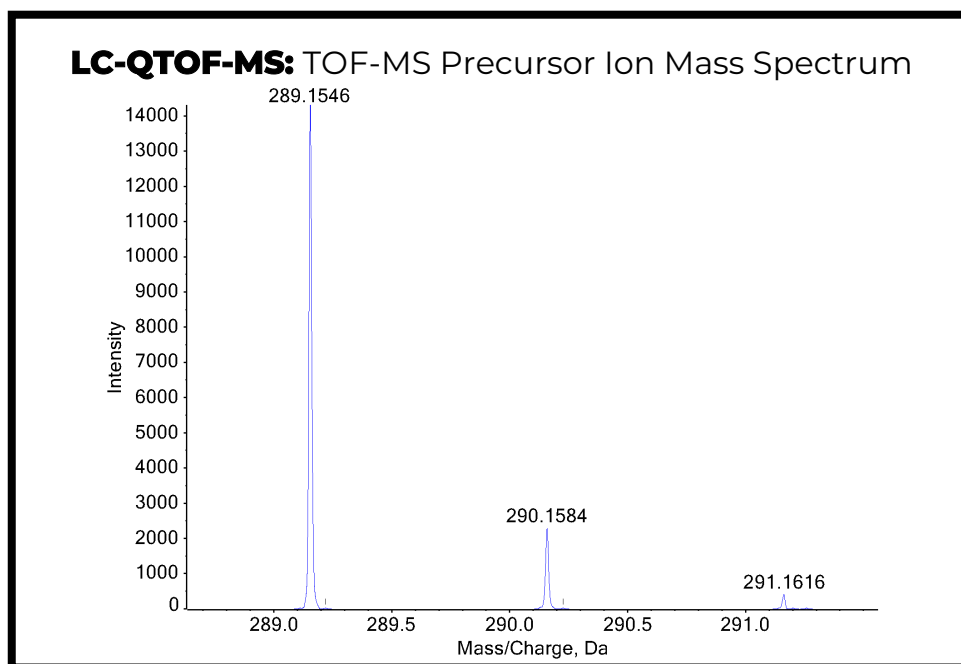
Laboratory: Center for Forensic Science Research and Education (CFSRE, Willow Grove, PA, USA)

Instrument: Sciex X500R LC-QTOF-MS

Methods: www.cfsre.org/nps-discovery/monographs

Sample Preparation: Liquid-liquid extraction

[LC-QTOF-MS Method Details](#)



Confirmation Using Drug Standard: Reference material (Batch: 0586627-5) was purchased from Cayman Chemical (Ann Arbor, MI, USA). The analyte was confirmed to be MDMB-ICA based on retention time (sample: 7.64 min vs. standard: 7.68 min) and mass spectral data comparisons.