cfsre | NPS DISCOVERY | دائـــرة الـقـضـــاء JUDICIAL DEPARTMENT

4Cl-MDMB-BINACA
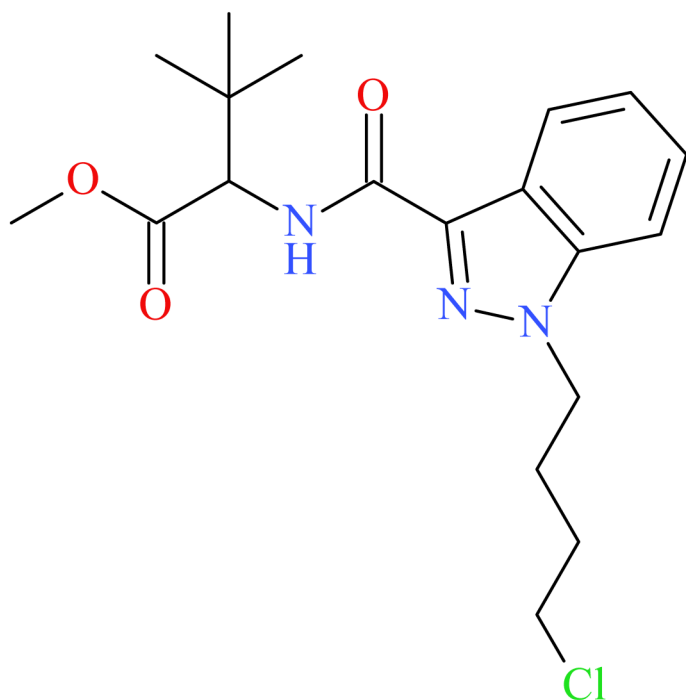
NPS SUBCLASS
Cannabinoid
REPORT DATE
December 16, 2024
SAMPLE RECEIVED
September 13, 2024
SAMPLE TYPE
Drug Material

Preferred Name	4Cl-MDMB-BINACA
Synonyms	4Cl-MDMB-BUTINACA, 4-Chloro MDMB-BINACA, 4-Chloro MDMB-BUTINACA
Formal Name	methyl 2-[[1-(4-chlorobutyl)indazole-3-carbonyl]amino]-3,3-dimethyl-butanoate
InChI Key	CZOQQMLVUUBCLA-UHFFFAOYSA-N
CAS Number	N/A
Chemical Formula	$C_{19}H_{26}ClN_3O_3$
Molecular Weight	379.9
Molecular Ion [M⁺]	379
Exact Mass [M+H]⁺	380.1735

Characterization & Intelligence

The following information was compiled in December 2024 and is subject to change as new research is conducted and as new information becomes available:

Description: 4Cl-MDMB-BINACA is a novel synthetic cannabinoid bearing structural similarity to 4F-MDMB-BINACA, MDMB-BINACA, and other synthetic cannabinoids. 4Cl-MDMB-BINACA was first detected in September 2024 by our laboratory and was confirmed in November 2024 after acquisition of standard reference material.

Sample Source: Center of Forensic & Digital Science Abu Dhabi Judicial Department

Sample Appearance: Bottle containing transparent liquid

Pharmacology: No information is available at this time for 4Cl-MDMB-BINACA; however, based on structural similarity to other indazole synthetic cannabinoids (i.e., 4F-MDMB-BINACA), 4Cl-MDMB-BINACA is assumed to be a potent CB_1 receptor agonist.[1]

Toxicology: 4Cl-MDMB-BINACA has not been identified in toxicology cases to date at the CFSRE.

Drug Materials: 4Cl-MDMB-BINACA has been detected in one drug material to date at the CFSRE.

Demographics / Geographics: The drug material positive for 4Cl-MDMB-BINACA originated from Abu Dhabi and was identified alongside other synthetic cannabinoids (e.g., MDMB-BINACA, MDMB-INACA).

Legal Status: 4Cl-MDMB-BINACA is not currently a scheduled drug in the United States.

References:
- Cayman Chemical: 4Cl-MDMB-BUTINACA
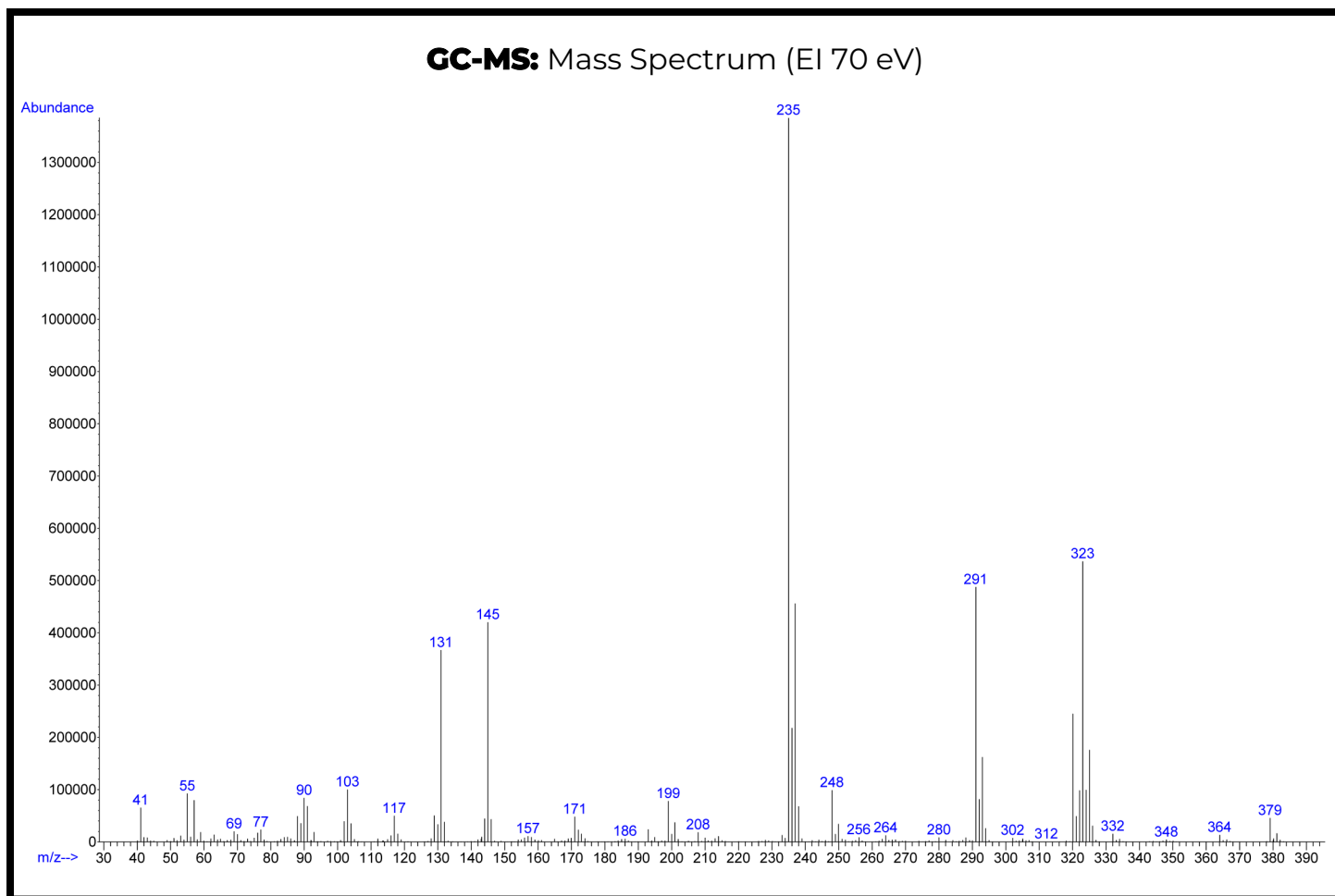- [1]Tokarcyzk et al. (2022) Fatal intoxication with new synthetic cannabinoids 5F-MDMB-PICA…

Gas Chromatography Mass Spectrometry (GC-MS)

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

Sample Preparation: Dilution in methanol

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 (Batch: 0722830-1) was purchased from Cayman Chemical (Ann Arbor, MI, USA). The analyte was confirmed to be 4Cl-MDMB-BINACA based on retention time (sample: 7.78 min vs. standard: 7.74 min) and mass spectral data comparisons.

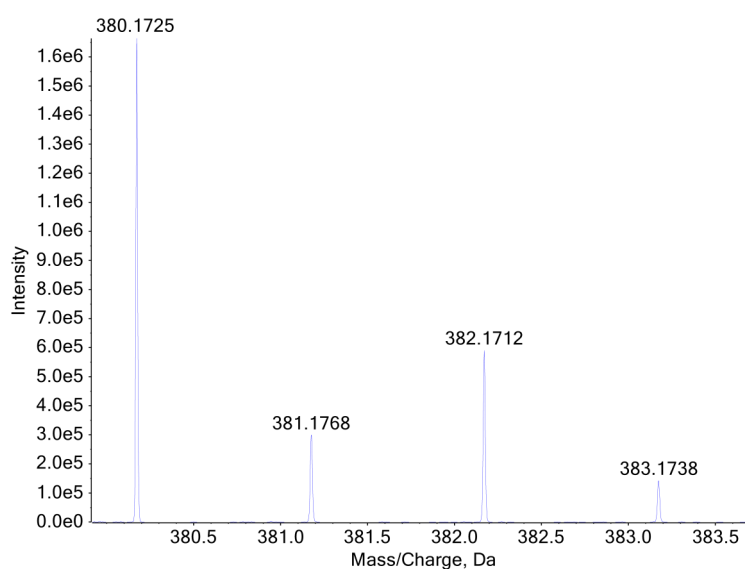# Liquid Chromatography Quadrupole Time-of-Flight Mass Spectrometry (LC-QTOF-MS)

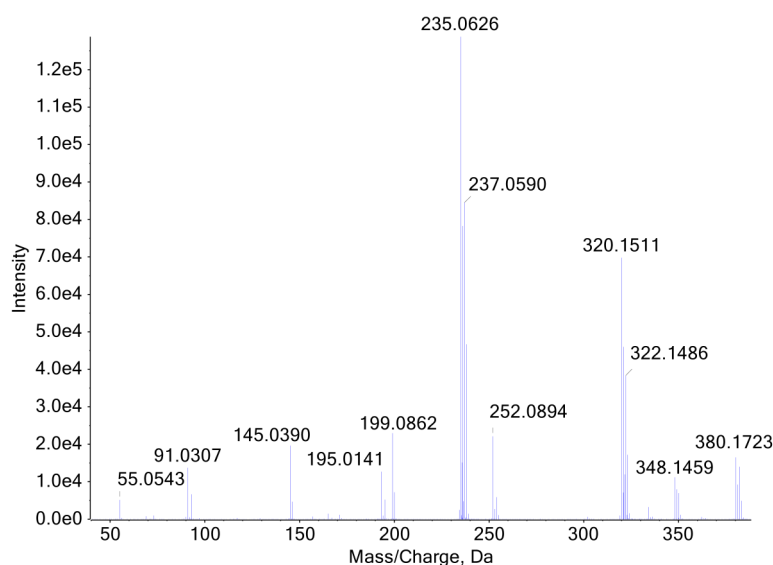**Laboratory:** Center for Forensic Science Research and Education (CFSRE, Horsham, PA, USA)

Sample Preparation: Dilution in mobile phase

Instrument: Sciex 5600+ LC-QTOF-MS

Methods: LC-QTOF-MS Method Details & Monographs

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 (Batch: 0722830-1) was purchased from Cayman Chemical (Ann Arbor, MI, USA). The analyte was confirmed to be 4Cl-MDMB-BINACA based on retention time (sample: 9.50 min vs. standard: 9.62 min) and mass spectral data comparisons.*