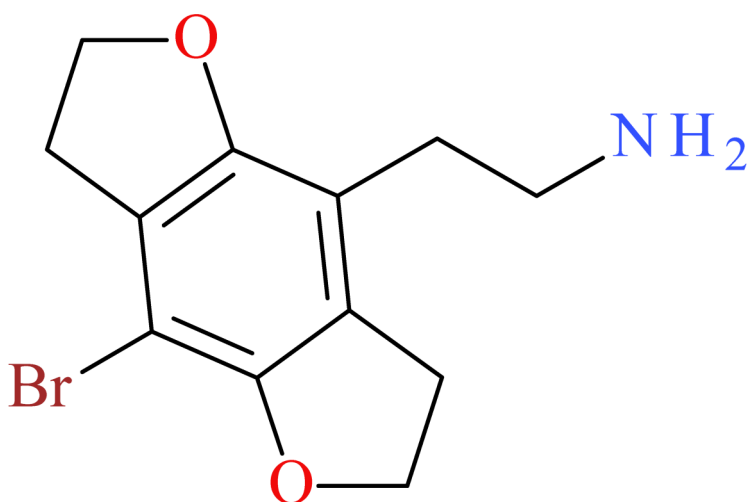




2C-B-FLY



NPS SUBCLASS

Hallucinogen

REPORT DATE

June 26, 2025

SAMPLE RECEIVED

February 7, 2025

SAMPLE TYPE

Drug Material

Preferred Name	2C-B-FLY
Synonyms	N/A
Formal Name	2-(4-bromo-2,3,6,7-tetrahydrofuro[2,3-f]benzofuran-8-yl)ethanamine
InChI Key	YZDFADGMVOSVIX-UHFFFAOYSA-N
CAS Number	178557-21-6
Chemical Formula	C ₁₂ H ₁₄ BrNO ₂
Molecular Weight	284.1
Molecular Ion [M ⁺]	283
Exact Mass [M+H] ⁺	284.0281

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: 2C-B-FLY is a novel hallucinogen. Its structure bares a phenethylamine core and it resembles other substituted phenethylamines (e.g., 2C-B). 2C-B-FLY was first identified by our laboratory in February 2025 and confirmed after acquiring standard reference material.

Sample Source: San Francisco Aids Foundation (San Francisco, CA)

Sample Appearance: Solid green material

Pharmacology: 2C-B-FLY is a partial agonist at the serotonin 5-HT_{2A} receptor similar to 2C-B, and also has high affinity for the 5-HT_{2B}, 5-HT_{2C}, and 5-HT_{2D} receptors.^{1,2}

Toxicology: 2C-B-FLY has not been detected in toxicology cases to date at the CFSRE.

Drug Materials: 2C-B-FLY has been detected in one drug material to date at the CFSRE.

Demographics / Geographics: The drug material originated from California. 2C-B-FLY was identified alongside PCP.

Legal Status: 2C-B-FLY is not currently scheduled in the United States.

References:

- ▶ Cayman Chemical: [2C-B-FLY](#)
- ▶ ¹Ray et al. [Psychedelics and the human receptorome](#)
- ▶ ²Rickli et al. [Pharmacological profile of novel psychoactive benzofurans](#)

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, 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 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.

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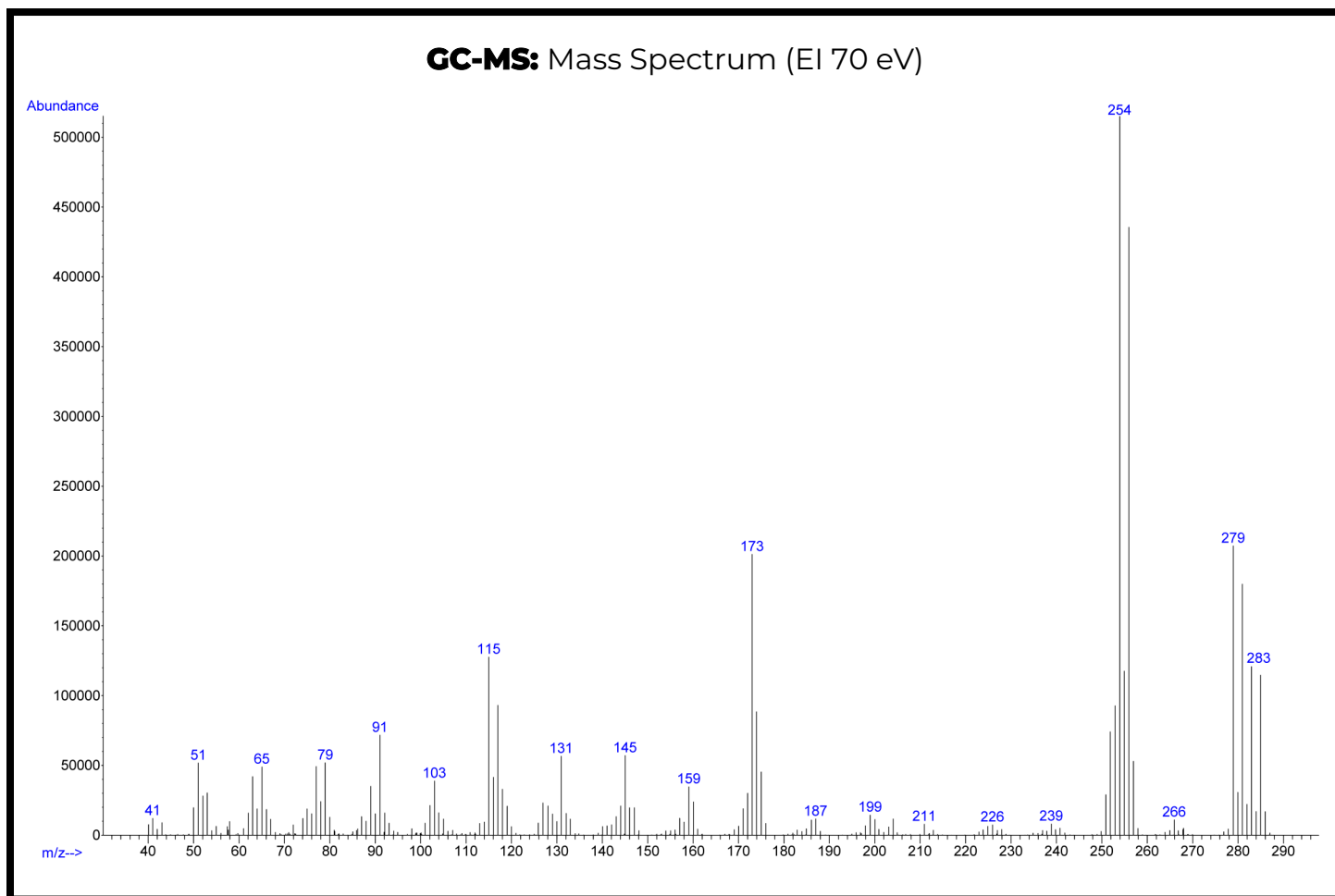
Gas Chromatography Mass Spectrometry (GC-MS)

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

Instrument: Agilent 5975 Series GC/MSD

Methods: [GC-MS Method Details](#) & [Monographs](#)

Sample Preparation: Acid-base extraction



Confirmation Using Drug Standard: Reference material for 2C-B-FLY was purchased from Cayman Chemical (Ann Arbor, MI, USA). The analyte was confirmed to be 2C-B-FLY based on retention time (sample: 6.20 min vs. standard: 6.24 min) and mass spectral data comparisons.

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

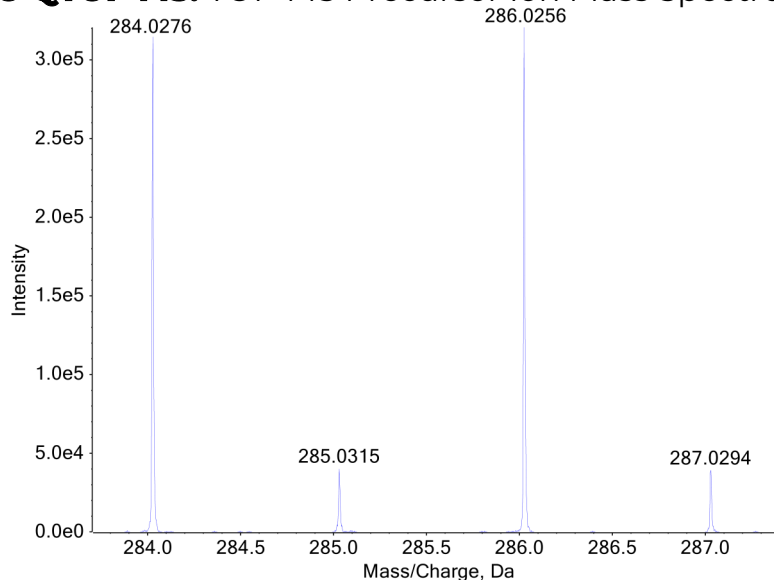
Laboratory: Center for Forensic Science Research and Education (CFSRE, Horsham, PA, USA)

Instrument: Sciex X500R LC-QTOF-MS

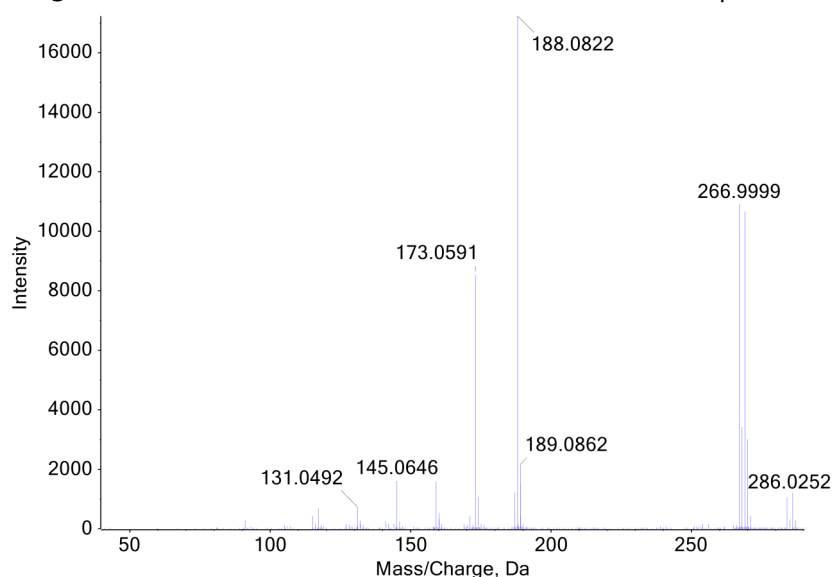
Methods: [LC-QTOF-MS Method Details](#) & [Monographs](#)

Sample Preparation: Dilution in mobile phase

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 2C-B-FLY was purchased from Cayman Chemical (Ann Arbor, MI, USA). The analyte was confirmed to be 2C-B-FLY based on retention time (sample: 5.57 min vs. standard: 5.50 min) and mass spectral data comparisons.