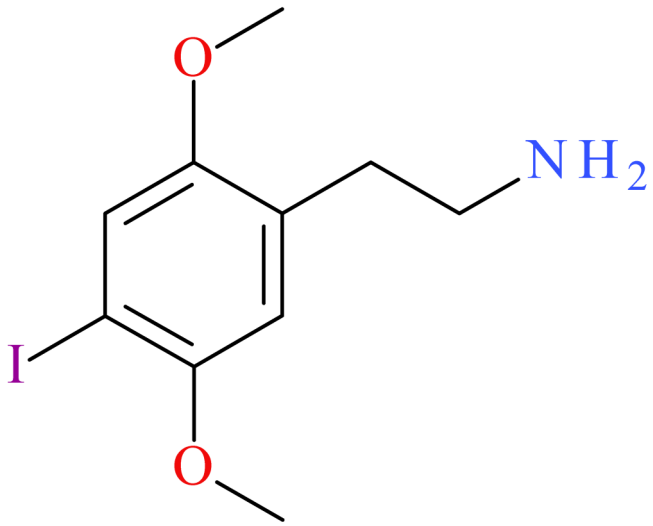
# 2C-I




| NPS SUBCLASS |
|---|
| Hallucinogen |
| **REPORT DATE** |
| January 15, 2026 |
| **SAMPLE RECEIVED** |
| December 12, 2025 |
| **SAMPLE TYPE** |
| Drug Material |

| | | | | | |
|---|---|---|---|---|---|
| **Preferred Name** | 2C-I | | | | |
| **Synonyms** | 2,5-Dimethoxy-4-iodophenethylamine, 4-iodo-2,5-DMPEA | | | | |
| **Formal Name** | 2-(4-iodo-2,5-dimethoxy-phenyl)ethanamine | | | | |
| **Chemical Formula** | $C_{10}H_{14}INO_2$ | | | | |
| **Molecular Weight** | 307.1 | **Molecular Ion [M⁺]** | 307 | **Exact Mass [M+H]⁺** | 308.0142 |

**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, and should not be used for confirmatory purposes alone.

**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.

**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, Nicholas Khorozov, 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.

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# Characterization & Intelligence

*The following information was compiled in January 2026 and is subject to change as new research is conducted and as new information becomes available:*

**Description:** 2C-I is a novel hallucinogen characterized as a 2,5-phenethylamine and bears structural similarity to other "2C" drugs (e.g., 2C-B, 2C-E). 2C-I was first synthesized in the 1990s and has been reported in overdoses and fatalities since 2003 with highest prevalence from 2011 to 2012.[1,2] 2C-I is reported to be highly selective for the serotonin (5-HT) receptors in the brain, particularly 5-$HT_{2A}$, with $LD_{50}$ values higher than that of other phenethylamine derivatives in animal models ($LD_{50}$ 2C-I: 1.368 mM, $LD_{50}$ 25I-NBOMe: 0.236 mM).[2,3] 2C-I is a Schedule I drug in the United States. 2C-I has been detected in one drug material to date at the CFSRE and has not yet been identified in toxicology specimens. 2C-I was identified in a drug material from New England without the presence of other drugs.

**References:**


- Cayman Chemical: 2C-I
- [1]Vang Dean (2013) 2C or not 2C: phenethylamine designer drug review
- [2]DEA (2025) 4-Idodo-2,5-Dimethoxyphenethylamine
- [3]Gil-Martins et al. (2025) Sublethal concentrations of 2C-I and 25I-NBOMe designer drugs impact...


# Gas Chromatography Mass Spectrometry (GC-MS)

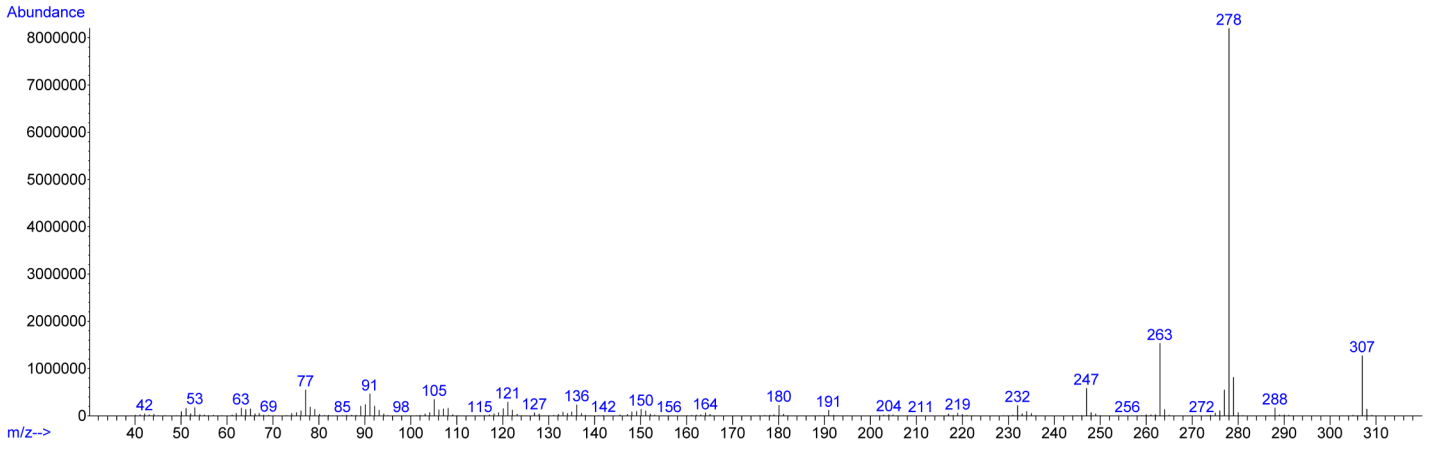
**Laboratory:** Center for Forensic Science Research and Education (CFSRE, Horsham PA, USA)

**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 2C-I (Batch: 0631970-13) was purchased from Cayman Chemical (Ann Arbor, MI, USA). The analyte was confirmed to be 2C-I based on retention time (sample: 5.31 min vs. standard: 5.31 min) and mass spectral data comparisons.*

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

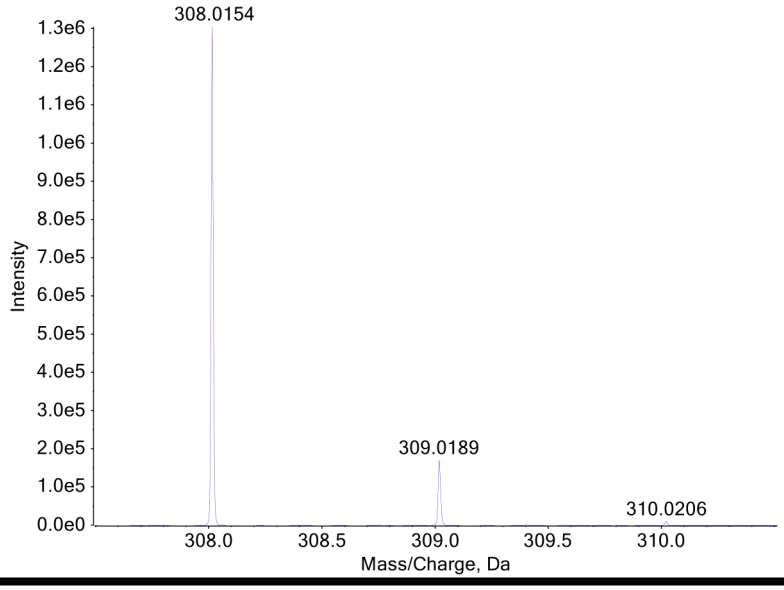
**Laboratory:** Center for Forensic Science Research and Education (CFSRE, Horsham, PA, USA)

**Sample Preparation:** Dilution in mobile phase

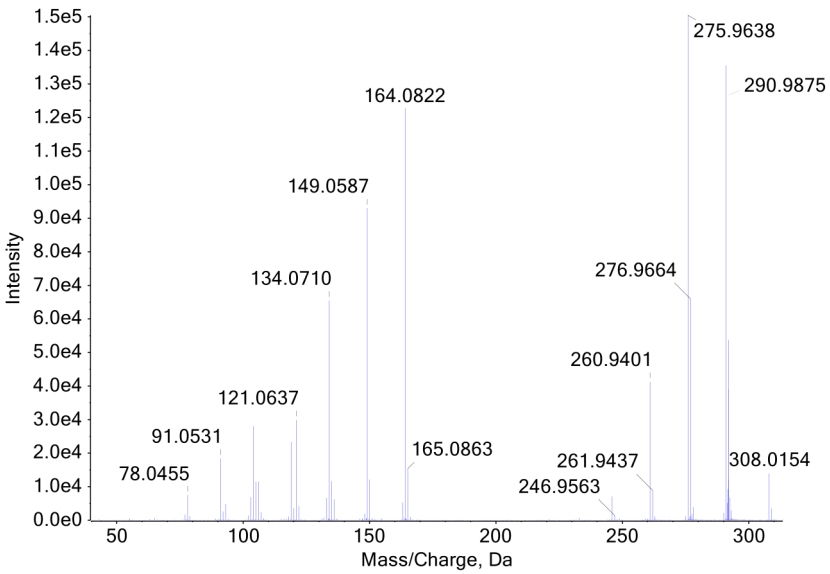
**Instrument:** Sciex 5600+ LC-QTOF-MS

**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 for 2C-I (Batch: 0631970-13) was purchased from Cayman Chemical (Ann Arbor, MI, USA). The analyte was confirmed to be 2C-I based on retention time (sample: 5.64 min vs. standard: 5.68 min) and mass spectral data comparisons.*