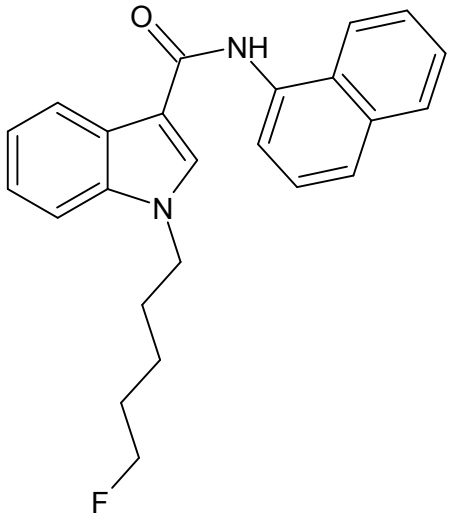
# 5-Fluoro-MN-24

*The Drug Enforcement Administration's Special Testing and Research Laboratory generated this monograph using structurally confirmed reference material.*




## *1. GENERAL INFORMATION*

***IUPAC Name:*** 1-(5-fluoropentyl)-N-(naphthalen-1-yl)-1H-indole-3-carboxamide

***CAS#:*** 1445580-60-8

***Synonyms:*** MN-24F, CBM-2201, 5F-NNE1

***Source:*** DEA Reference Material Collection

***Appearance:*** White powder

***$UV_{max}$ (nm):*** Not Determined

## *2. CHEMICAL AND PHYSICAL DATA*

### 2.1 CHEMICAL DATA

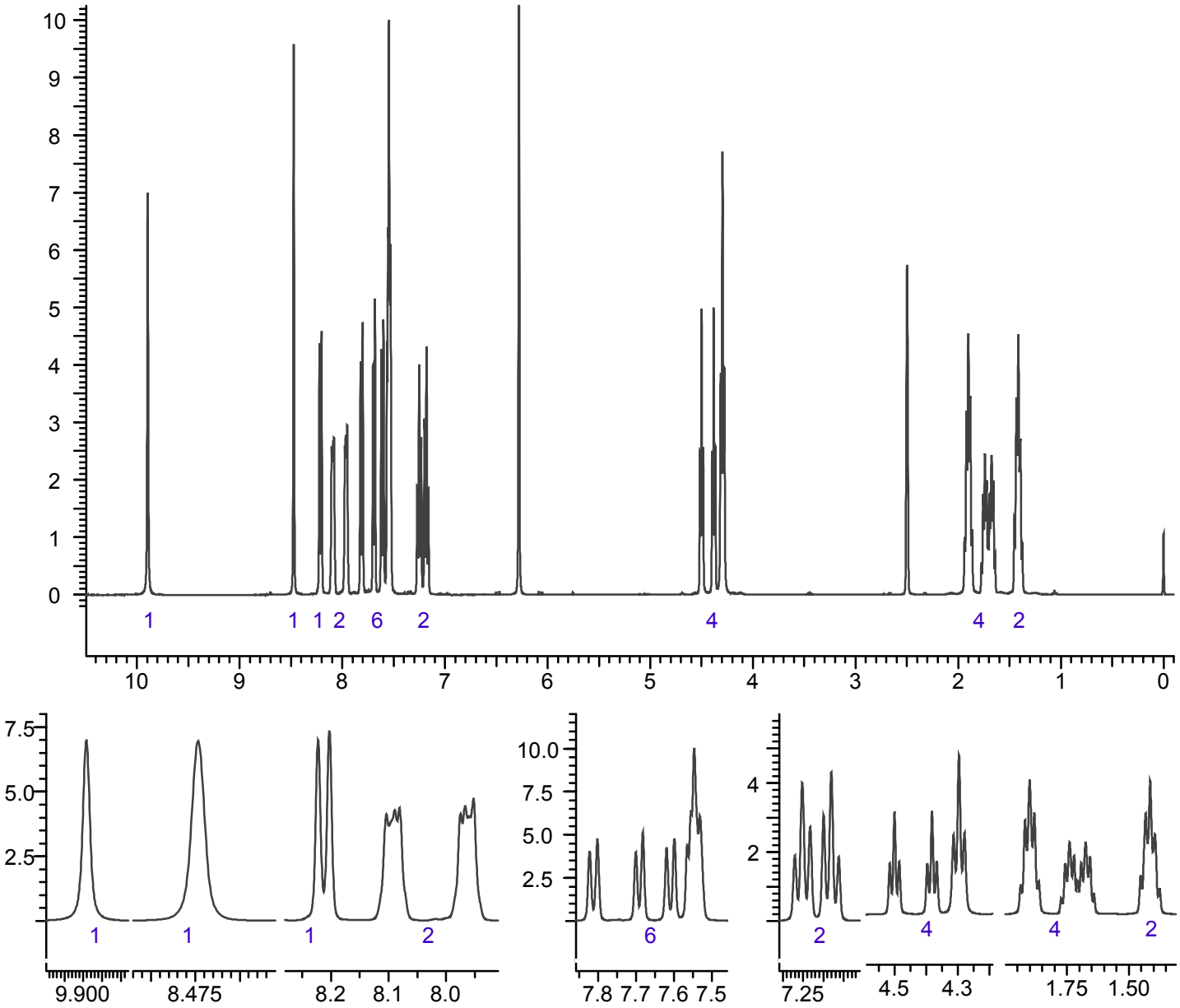
| Form | Chemical Formula | Molecular Weight | Melting Point (°C) |
|---|---|---|---|
| Base | $C_{24}H_{23}FN_2O$ | 374 | 157.0 |

## *3. QUALITATIVE DATA*

### 3.1 NUCLEAR MAGNETIC RESONANCE

*Sample Preparation:* Dilute analyte to ~25 mg/mL in DMSO containing TMS for 0 ppm reference and maleic acid as quantitative internal standard.

***Instrument:*** 400 MHz NMR spectrometer
***Parameters:*** Spectral width: at least containing -3 ppm through 13 ppm
Pulse angle: 90º
Delay between pulses: 45 seconds

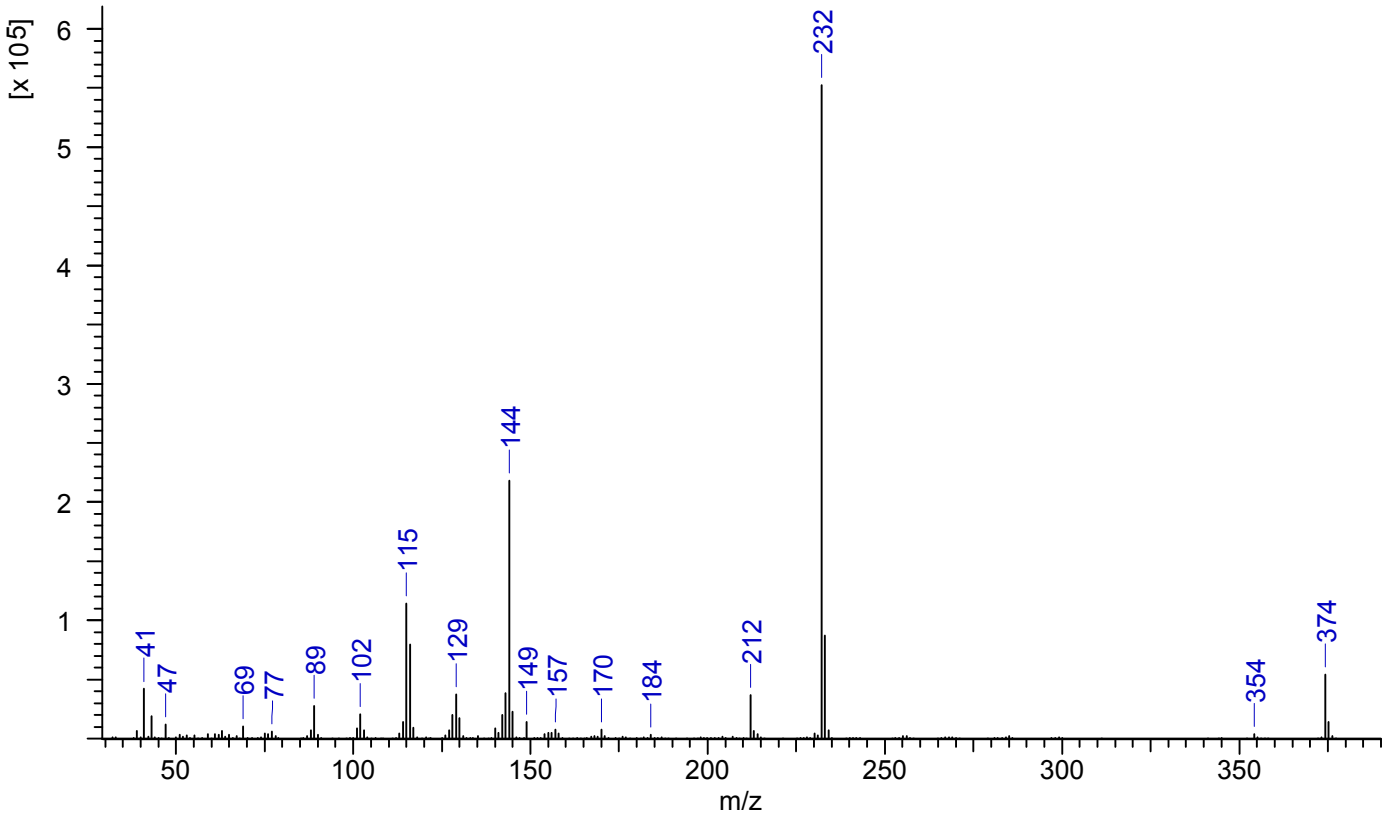


## 3.2 GAS CHROMATOGRAPHY/MASS SPECTROMETRY

*Sample Preparation:* Dilute analyte ~4mg in 1mL Methanol

| | |
|---|---|
| ***Instrument:*** | Agilent gas chromatograph operated in split mode with MS detector |
| ***Column:*** | DB-1 MS (or equivalent); 30m x 0.25 mm x 0.25 µm |
| ***Carrier Gas:*** | Helium at 1 mL/min |
| ***Temperatures:*** | Injector: 280ºC |
| | MSD transfer line: 280ºC |
| | MS Source: 230ºC |
| | MS Quad: 150ºC |
| | Oven program: |
| | 1) 100ºC initial temperature for 1.0 min |
| | 2) Ramp to 300ºC at 12 ºC/min |
| | 3) Hold final temperature for 25.0 min |
| ***Injection Parameters:*** | Split Ratio = 20:1, 1 µL injected |
| ***MS Parameters:*** | Mass scan range: 30-550 amu |
| | Threshold: 100 |
| | Tune file: stune.u |
| | Acquisition mode: scan |
| ***Retention Time:*** | 23.454 min |

EI Mass Spectrum, 5F-MN-24 Lot # RM-131115-02

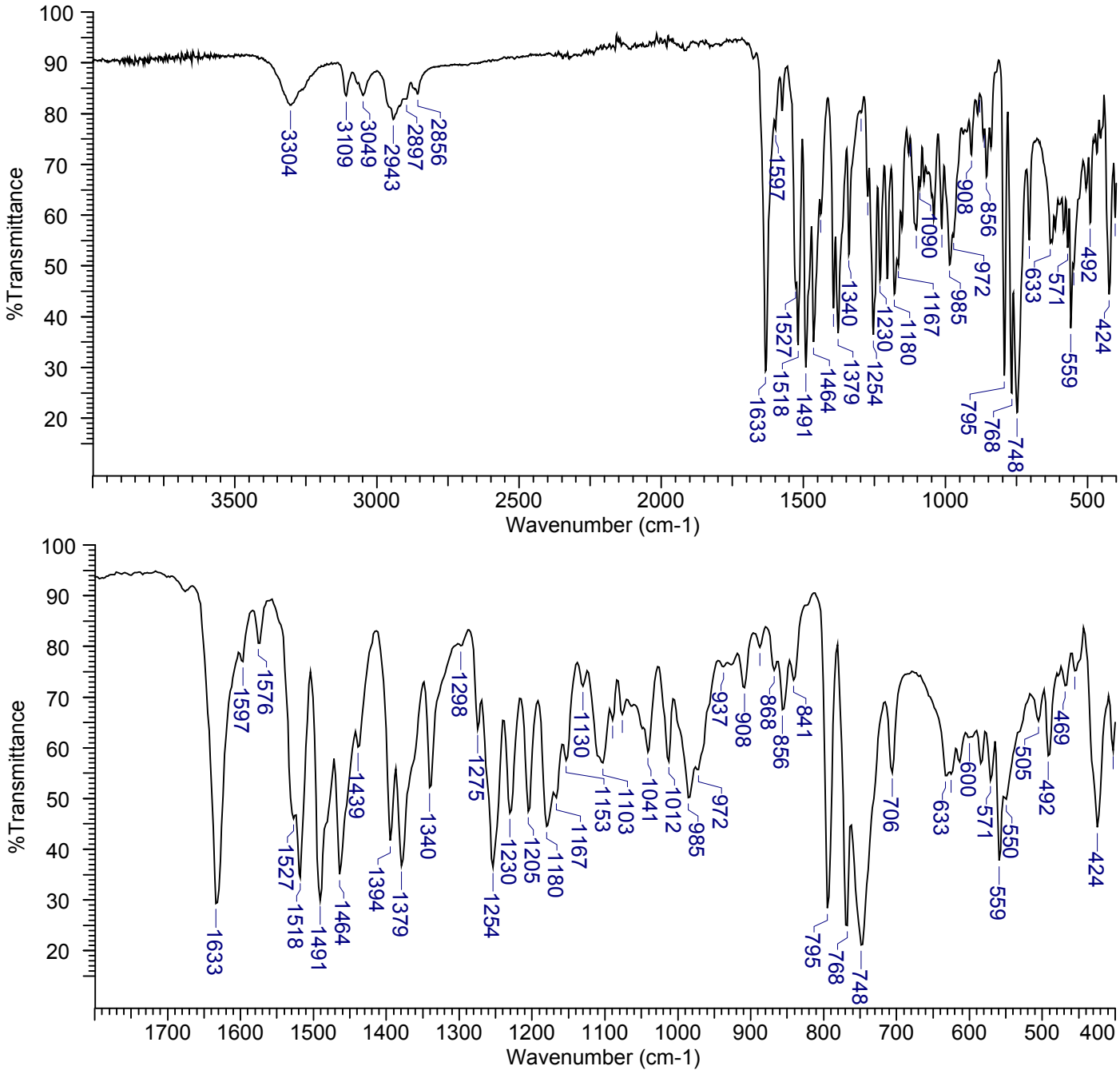


### 3.3 INFRARED SPECTROSCOPY (FTIR)

**Insrument:** FTIR with diamond ATR attachment (3 bounce)

**Scan Parameters:** Number of scans: 32
Number of background scans: 32
Resolution: 4 $cm^{-1}$
Sample gain: 8
Aperture: 150

FTIR, ATR (Diamond, 3 Bounce), 5F-MN-24 Lot# RM-131115-02



## *4. ADDITIONAL RESOURCES*

*Shevyrin, V.; Melkozerov, V.; Nevero, A.; Eltsoz, O.; Shafran, Y.; Analytical characterization of some synthetic cannabinoids, derivatives of indole-3-carboxylic acid.* ***Forensic Science International.*** *2013, p1-10*