

This information was derived from drug materials experimentally and without analytical standard.
This monograph was compiled in May 2026 and is subject to change.

Compound Information

Compound Name: Ethylflualprazolam

Chemical Formula: C₁₈H₁₄ClFN₄

IUPAC Name: 8-chloro-1-ethyl-6-(2-fluorophenyl)-4H-benzo[f][1,2,4]triazolo[4,3-a][1,4]diazepine

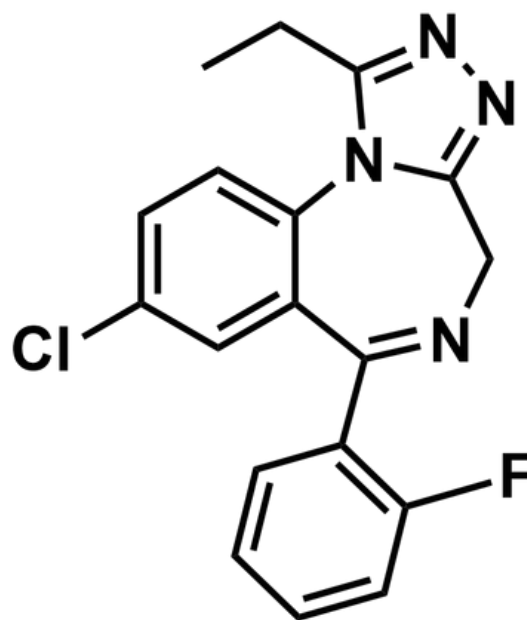
Molecular Weight: 340.79

Molecular Ion [M]⁺: 340.0891

Exact Mass [M+H]⁺: 341.0964

The first detection of ethylflualprazolam by Substance Drug Checking was made in September 2025 in a light yellow powdered drug material, received by referral from Vancouver, BC. Compound detections to date have been made, primarily, in samples expected to be “down”, or in pressed pills of various expected compositions. Between September 2025 and May 2026, ethylflualprazolam has been detected in 165 samples at our service.

Ethylflualprazolam has been reported by Toronto’s Drug Checking Service, Health Canada’s Drug Checking Service, and elsewhere in Canada (3).



Structure of Ethylflualprazolam

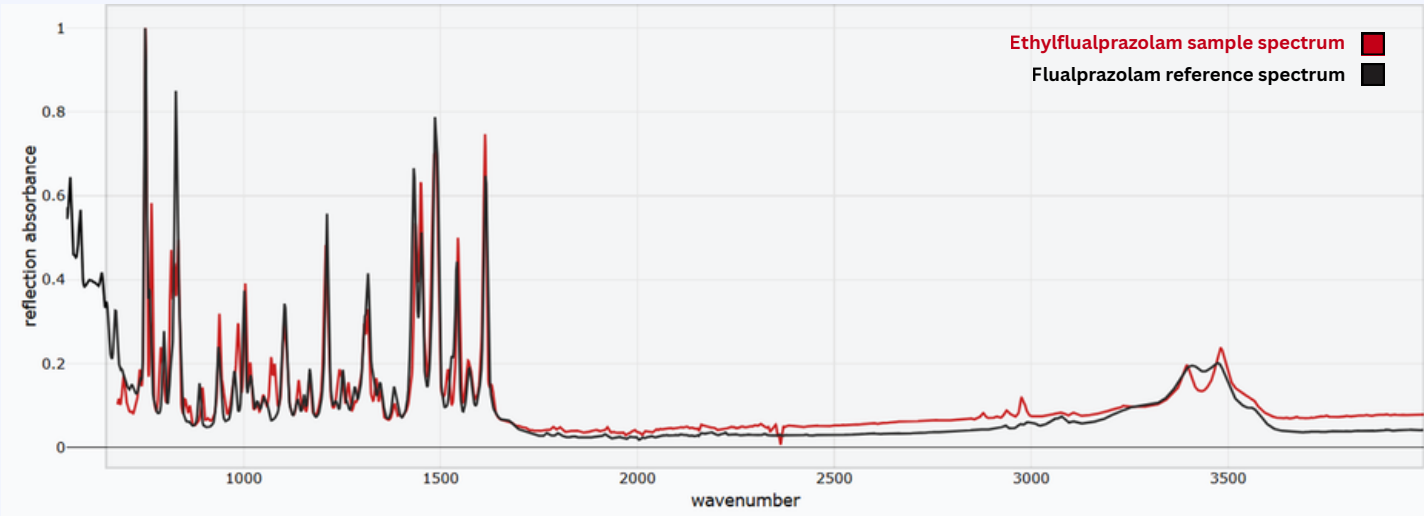
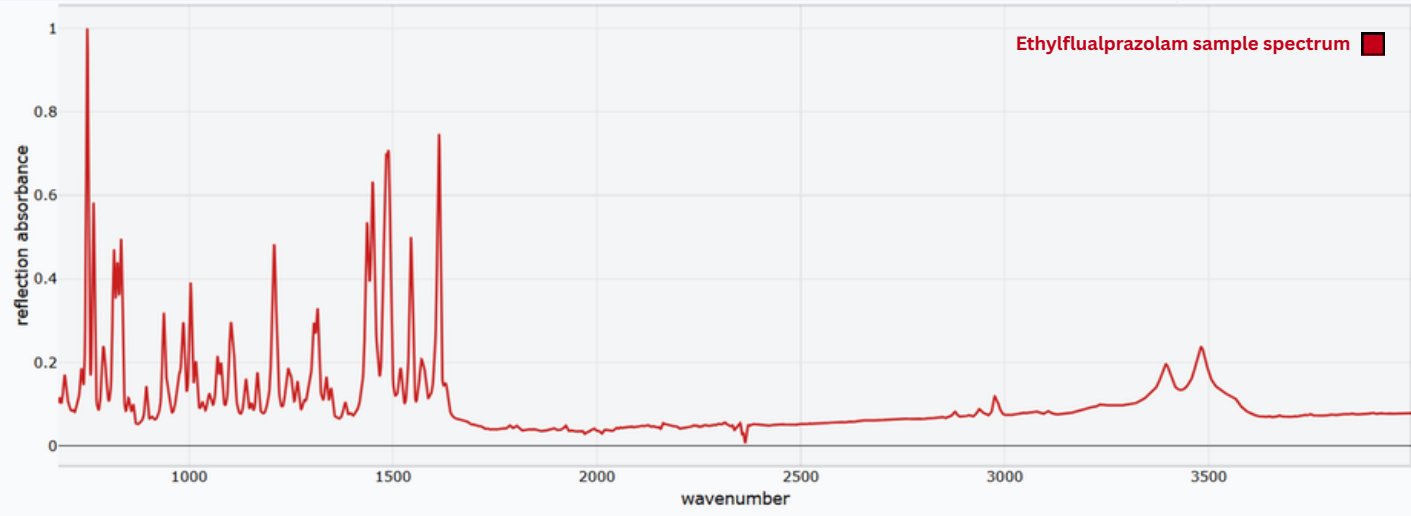
Samples Containing Ethylflualprazolam

Ethylflualprazolam has been primarily detected in polysubstance opioid (“down”) samples, alongside fentanyl, fentanyl analogues (fluorofentanyl, carfentanyl), benzodiazepines (ethylbromazolam, desalkylgidazepam, phenzolam, bromazolam), veterinary sedatives (medetomidine, xylazine), sugars, and caffeine. Detections of ethylflualprazolam in pressed pills were made in samples expected to contain other benzodiazepine compounds instead and in samples expected to contain ethylflualprazolam itself. In a minority of cases, ethylflualprazolam was detected instead of expected crack cocaine (cocaine base), in pressed pill samples expected to be oxycodone, and amongst pills in combination with fentanyl analogues.

Literature used in Identification

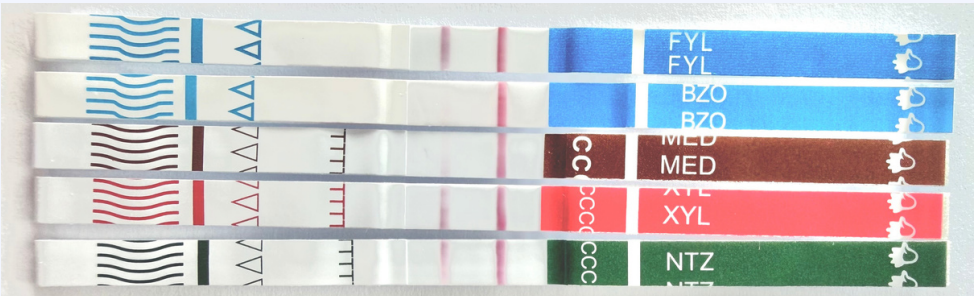
1. Dai, J.; Lin, H.; Qiao, J. Q.; Lian, H. Z.; Xu, C. X. Non-targeted screening of alprazolam and flualprazolam metabolites in *in vitro* metabolism of different species by high-resolution mass spectrometry. *Journal of Hazardous Materials* 2026, 504, 141380. doi: 10.1016/j.jhazmat.2026.141380. (fragmentation info)
2. Galaon, T.; Vacaresteanu, C.; Anghel, D. F.; David, V. Simultaneous ESI-APCI(+) ionization and fragmentation pathways for nine benzodiazepines and zolpidem using single quadrupole LC-MS. *Drug Testing and Analysis* 2014, 6, 439-450. doi: 10.1002/dta.1526. (fragmentation info)
3. Toronto’s Drug Checking Service. 126 samples checked: December 13 - 26, 2025. <https://drugchecking.community/report/december-13-26-2025/>. (Accessed July 1, 2026).

FTIR



IR absorption scans of query compound (top figure) and query compound overlaid with flualprazolam spectrum (bottom figure).

Immunoassay



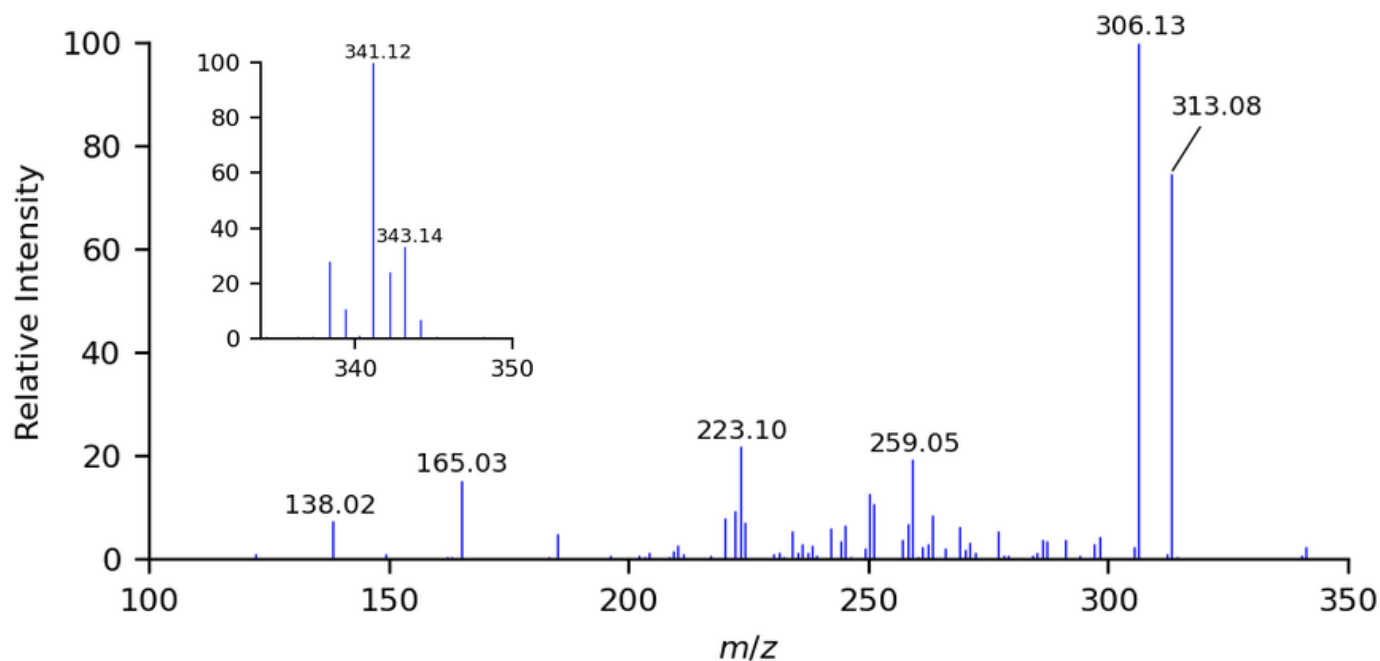
- 1. FYL-1S48; (20 ng/ml)
- 2. BZO-1S3; (300ng/ml)
- 3. MED-18S2; (1000ng/ml)
- 4. XYL-18S2; (1000ng/ml)
- 5. NTZ-18S26; (2000ng/ml)

A negative benzodiazepine immunoassay test strip was observed for ethylflualprazolam at 1 mg/mL.

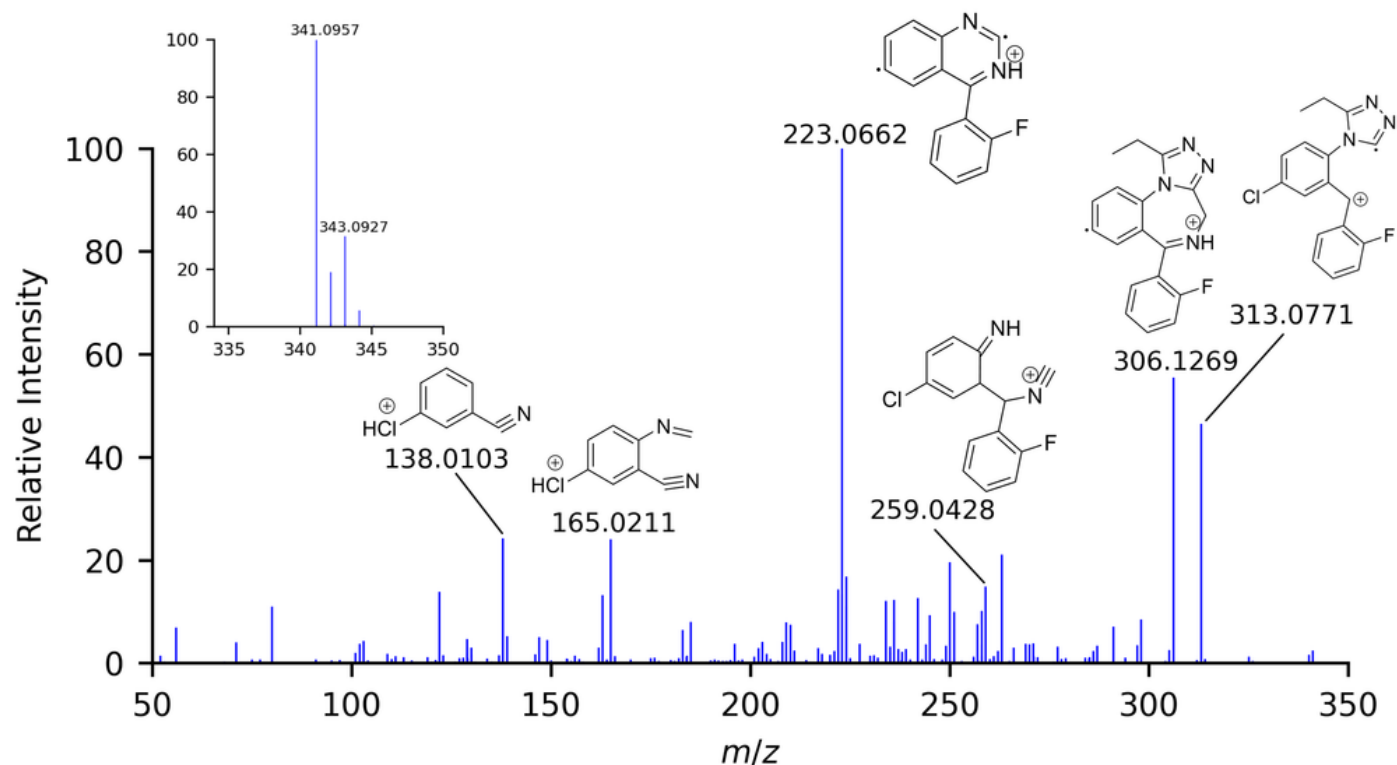


At a concentration of 5 mg/mL, a positive immunoassay test strip was observed.

PS-MS



Orbitrap PS - HRMS



Precursor (MS) and product ion (MS/MS) scans of query compound accompanied by proposed fragments observed. Structural elucidation was not performed to confirm exact compound and fragment structure, but was based on structures reported in literature for flualprazolam (1,2).

Methodology

Fourier-Transform Infrared Spectroscopy

Acquisition: Agilent 4500a Series Portable FTIR with dTGS detector and single-bounce diamond ATR accessory. Spectral data was compiled over 32 scans in the 650-4000 (cm^{-1}) range with a spectral resolution of 4(cm^{-1}) and zero fill factor of 4.

Paper Spray Mass Spectrometry

Instrument:

Thermo Scientific TSQ Fortis™ triple quadrupole mass spectrometer with a VeriSpray™ paper spray ion source.

Acquisition:

Mode: Positive ion mode
Spray Voltage: 3800V
Ion transfer tube temp: 300 °C
Scan Rate: 250 Da/s.

MS/MS:

Precursor: 341.1
Collision Energy Ramp: 20-35V
Scan range: m/z 100-350.

Orbitrap Paper Spray -High Resolution Mass Spectrometry

Instrument:

Thermo Scientific Orbitrap Exploris™ 120 with a VeriSpray™ paper spray ion source.

Acquisition:

Mode: Positive ion mode
Spray Voltage: 3800V
Ion transfer tube temp: 300 °C
Scan Rate: 250 Da/s.

MS/MS:

Precursor: 341.1
Collision Energy: HCD 35 V
Scan range: m/z 50-350.

Lateral Flow Immunoassay Strip Tests

Immunoassay strip tests were conducted on powder sample with BTNX strips in 38°C sterile water at a concentration of 1mg/ml. Results were Interpreted after 5 minutes.