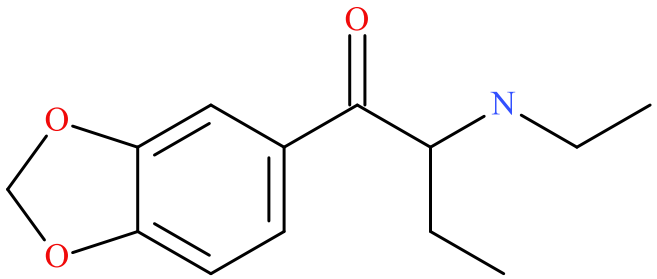
Eutylone

Sample Type: **Biological Fluid**



Latest Revision: **September 4, 2018**

Date of Report: **September 4, 2018**

1. GENERAL INFORMATION

IUPAC Name: 1-(1,3-benzodioxol-5-yl)-2-(ethylamino)butan-1-one

InChI String: InChI=1S/C13H17NO3/c1-3-10(14-4-2)13(15)9-5-6-11-12(7-9)17-8-16-11/h5-7,10,14H,3-4,8H2,1-2H3

CFR: Not Scheduled (09/2018)

CAS# 17764-18-0

Synonyms: bk-EBDB, beta-keto-Ethylbenzodioxolylbutanamine

Source: NMS Labs – Toxicology Department

2. CHEMICAL DATA

Analyte	Chemical Formula	Molecular Weight	Exact Mass $[M+H]^+$
Eutylone	$C_{13}H_{17}NO_3$	235.28	236.1281

***Important Note**: All identifications were made based on evaluation of analytical data (LC-QTOF) in comparison to analysis of acquired reference material.*

***Report Prepared By:** Alex J. Krotulski, MSFS, and Barry K. Logan, PhD, F-ABFT*

3. SAMPLE HISTORY

Eutylone has been identified in one case since August 2018. The geographical and demographic breakdown is below:

Geographical Location: Western Pennsylvania

Biological Sample: Chest Blood

Date of First Collection: Not Available

Date of First Receipt: August 16, 2018

Additional NPS: Fluoro-Isobutyrylfentanyl (FIBF)

4. BRIEF DESCRIPTION

Eutylone is classified as a novel stimulant and substituted cathinone. Substituted cathinones are modified based on the structure of cathinone, an alkaloid found in the Khat plant. Novel stimulants have been reported to cause stimulant-like effects, similar to amphetamines. Novel stimulants have also caused adverse events, including deaths, as described in the literature. Structurally similar compounds include N-ethyl pentylone, pentylone, methylone, and butylone. Pentylone, methylone, and butylone are all permanent Schedule I substances in the United States, while N-ethyl pentylone has been temporarily placed (08/2018) in Schedule I.

5. ADDITIONAL RESOURCES

https://www.caymanchem.com/product/9001103

https://www.policija.si/apps/nfl_response_web/0_Analytical_Reports_final/Eutylone-ID-1864-17_report.pdf

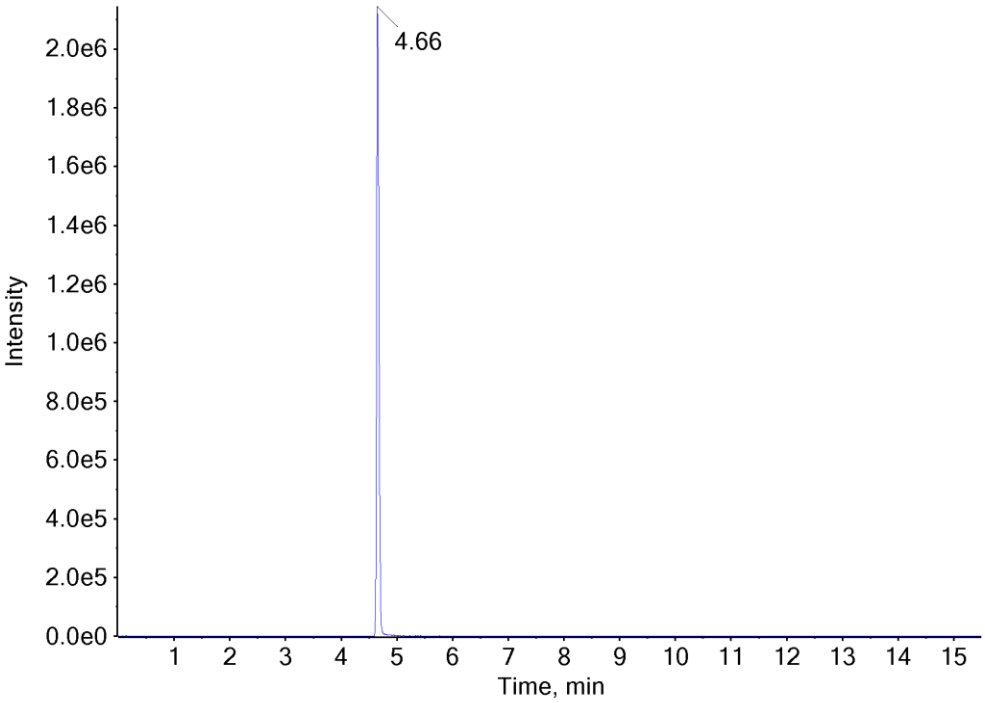
http://www.emcdda.europa.eu/system/files/publications/1018/TDAN15001ENN.pdf

6. QUALITATIVE DATA

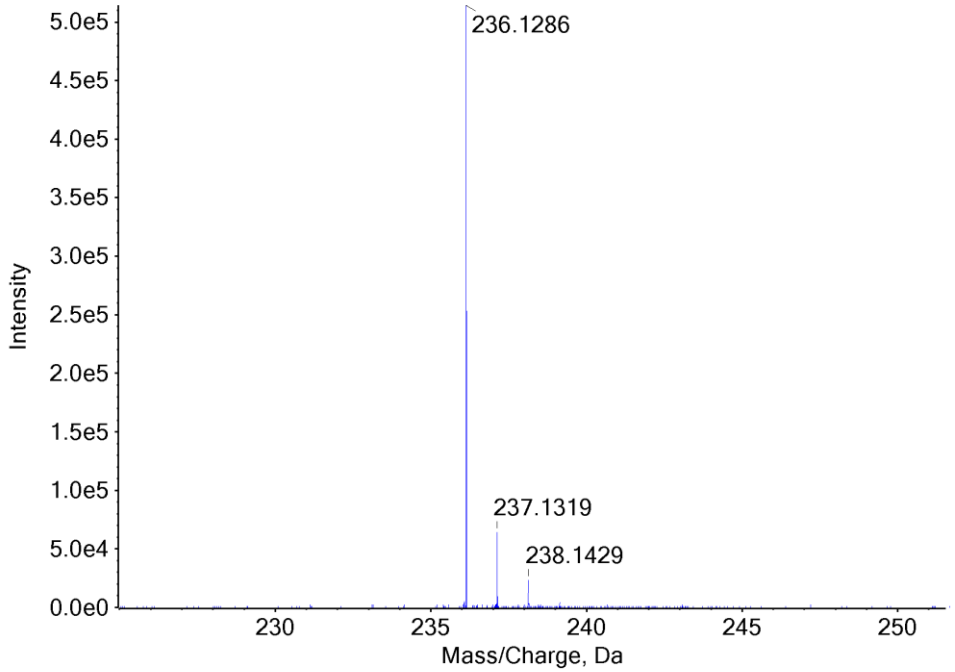
6.1 LIQUID CHROMATOGRAPHY QUADRUPOLE TIME OF FLIGHT MASS SPECTROMETRY (LC-QTOF)

Testing Performed At:	The Center for Forensic Science Research and Education at the Fredric Rieders Family Foundation (Willow Grove, PA)
Sample Preparation:	No additional preparation - direct analysis of sample extract
Instrument:	Sciex TripleTOF® 5600+, Shimadzu Nexera XR UHPLC
Column:	Phenomenex® Kinetex C18 (50 mm x 3.0 mm, 2.6 µm)
Mobile Phase:	A: Ammonium formate (10 mM, pH 3.0) B: Methanol/acetonitrile (50:50) Flow rate: 0.4 mL/min
Gradient:	Initial: 95A:5B; 5A:95B over 13 min; 95A:5B at 15.5 min
Temperatures:	Autosampler: 15 °C Column Oven: 30 °C Source Heater: 600 °C
Injection Parameters:	Injection Volume: 10 µL
QTOF Parameters:	TOF MS Scan Range: 100-510 Da Precursor Isolation: SWATH® acquisition (27 windows) Fragmentation: Collison Energy Spread (35±15 eV) MS/MS Scan Range: 50-510 Da
Retention Time:	4.66 min
Standard Comparison:	Reference material for Eutylone (Batch: 0476237-7) was purchased from Cayman Chemical Company (Ann Arbor, MI, USA). Analysis of this standard resulted in positive identification of the analyte in the extract as Eutylone, based on retention time (4.46 min) and mass spectral data. (https://www.caymanchem.com/product/9001103)

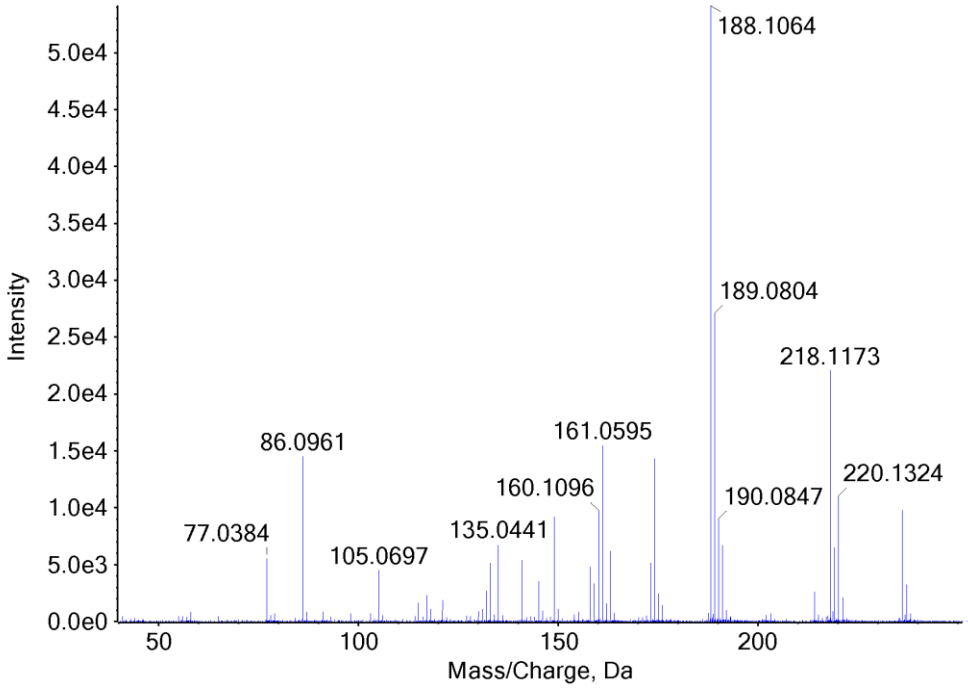
Extracted Ion Chromatogram: Eutylone



TOF MS Spectrum: Eutylone



MS/MS Spectrum: Eutylone



7. FUNDING

This project was supported by Award Number 2017-R2-CX-0002, awarded by the National Institute of Justice, Office of Justice Programs, U.S. Department of Justice. The opinions, findings, and conclusions or recommendations expressed in this publication, program, or exhibition are those of the author(s) and do not necessarily reflect those of the Department of Justice.