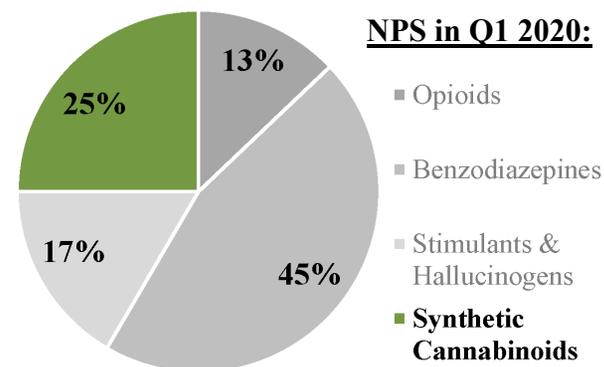


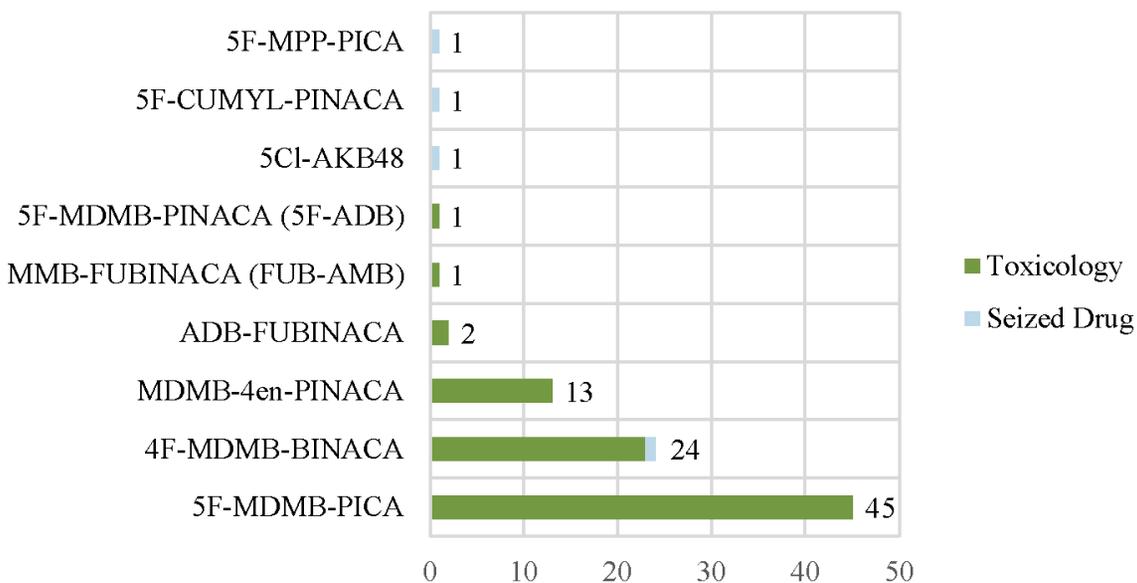
Purpose: This report provides up-to-date information regarding the status of synthetic cannabinoid prevalence and positivity within the United States.

Overview: Novel psychoactive substances (NPS), including synthetic cannabinoids, continue to pose great challenges for forensic scientists, clinicians, and public health and safety personnel. Synthetic cannabinoids have been implicated in an increasing number of emergency room admissions, death investigations, and intoxication events in corrections populations. Maintaining a current scope of analysis can be challenging, often requiring comprehensive analytical methodologies and reference materials for identifications.

Objective: This project employs novel approaches for the analysis of biological samples and seized drug materials using comprehensive non-targeted data acquisition by gas chromatography mass spectrometry (GC-MS) and liquid chromatography quadrupole time-of-flight mass spectrometry (LC-QTOF-MS). The scope of analysis contains more than 800 drugs, including a vast majority of NPS and their metabolites. This model allows for real-time identification of novel synthetic cannabinoids and further data analysis of important trends. This project was conducted in collaboration with the toxicology and criminalistics laboratories of NMS Labs. Forensic case types linked to these results include illicit drug investigations, medicolegal death investigations, and/or driving under the influence of drugs (DUID) investigations. The results in this report represent the total number of NPS identifications at CFSRE during this quarter, including those from sample-mining, data-mining, and/or esoteric testing.



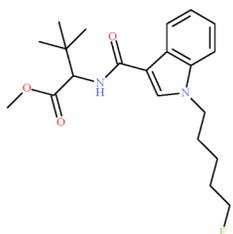
Synthetic Cannabinoid Positivity



Synthetic Cannabinoid Combinations

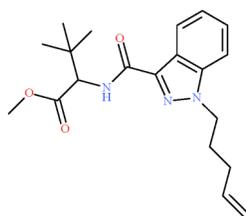
Combination	Frequency
5F-MDMB-PICA + 4F-MDMB-BINACA	5
5F-MDMB-PICA + 4F-MDMB-BINACA + MDMB-4en-PINACA	4
4F-MDMB-BINACA + MDMB-4en-PINACA	3
5F-MDMB-PICA + MDMB-4en-PINACA	2

Most Prevalent



5F-MDMB-PICA was the most prevalent synthetic cannabinoid identified for the fifth straight quarter.

Trending



The prevalence of **MDMB-4en-PINACA** continues to increase, now totaling more than 25 identifications.

Acknowledgements: This report was prepared by Alex J. Krotulski, PhD; Amanda L.A. Mohr, MSFS, D-ABFT-FT; and Barry K. Logan, PhD, F-ABFT at the Center for Forensic Science Research and Education (CFSRE) at the Fredric Rieders Family Foundation. NPS Discovery would like to acknowledge staff and scientists at CFSRE and NMS Labs for their involvements and contributions. For more information about our programs and reports, please contact NPS Discovery at npsdiscovery@cfsre.org or visit our website at www.npsdiscovery.org.

