



DEA TOX

DRUG ENFORCEMENT ADMINISTRATION
TOXICOLOGY TESTING PROGRAM



The Drug Enforcement Administration Toxicology Testing Program (DEA TOX) began in May 2019 as a surveillance program that aims to detect novel psychoactive substances (NPS) within the United States and connect the abuse of newly emerging NPS to toxidromes that cannot be explained by routine drug screens. DEA TOX currently holds a contract with the Clinical Toxicology and Environmental Biomonitoring Lab at the University of California, San Francisco for comprehensive analyses of voluntarily submitted samples to identify these synthetic drugs. For more information regarding DEA TOX, please visit: https://www.deadiversion.usdoj.gov/dea_tox/index.html.

SPECIAL REPORT: KRATOM-RELATED DETECTIONS

Kratom (*Mitragyna speciosa*) is a tropical tree native to Southeast Asia with leaves containing active alkaloids. Kratom-related products are increasingly sold online and in retail outlets throughout the United States. However, some of these products differ significantly in composition from botanical kratom; examples include concentrated 7-hydroxymitragynine products or products containing the synthetic derivative dihydro-7-hydroxy mitragynine (MGM-15). To date, the human safety profile of these concentrated and synthetic products remains unknown.

This special report summarizes all DEA TOX cases involving kratom-related detections through April 2026.

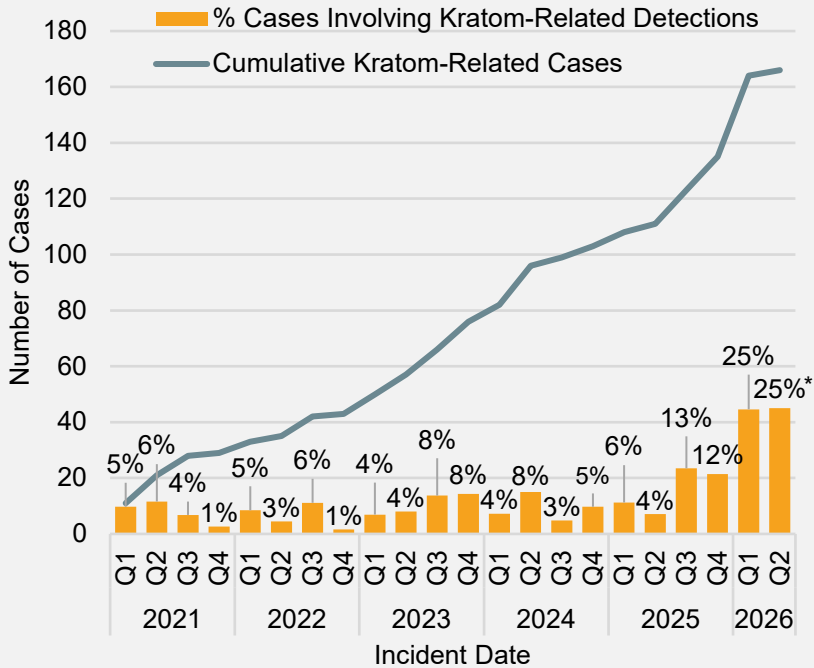
This report contains information to benefit scientists. Most samples analyzed by the program are whole blood, thus this report has a general focus on the whole blood findings. In addition, a single case (i.e., incident) may contain multiple samples (e.g., whole blood, plasma).

Detected Kratom-Related Analytes

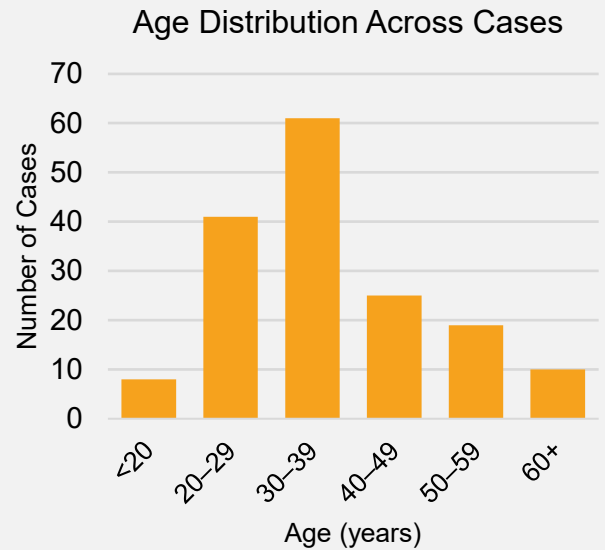
  Mitragynine	  Speciociliatine
  7-Hydroxymitragynine	  Speciogynine
  Mitragynine Pseudoindoxyl	  Corynantheidine
 16-Carboxymitragynine	  Paynantheine
 9-O-Desmethylnitragynine (9-Hydroxy Corynantheidine)	 Dihydro-7-hydroxy Mitragynine (MGM-15)

 = expected metabolite  = marketed/identified in drug products  = found in botanical kratom (*M. speciosa*)

166 cases involved a kratom-related detection.



* Data for 2026 Q2 are not finalized. Cases occurring before 2021 are not displayed. Bars indicate the percentage of DEA TOX cases that involved a kratom-related detection with an incident date occurring in the corresponding quarter.

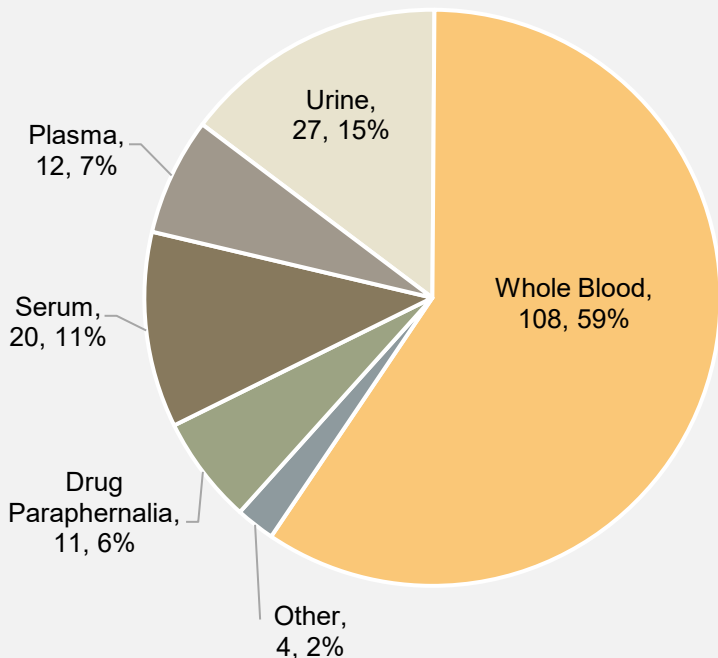


- 72% male, 27% female
- Average age: 36 years old
- Submitted from 23 states
- 111 cases (67%) were fatal

Demographic information was not provided for three cases.

Cases were comprised of **182 samples** with ≥ 1 kratom-related detection(s).

Number and Percent of Samples by Matrix



- 171 samples (94%) involved co-detection of one or more *non*-kratom-related substances. (Median = 7; Range = 0–22)

Top 10 *Non*-Kratom-Related Co-Detections in Whole Blood Samples

<u>n</u>	<u>%</u>	<u>Analyte</u>
61	56%	Caffeine
49	45%	Cotinine
37	34%	Fentanyl
31	29%	Nicotine
28	26%	Naloxone
27	25%	Diphenhydramine
27	25%	Acetaminophen
26	24%	Gabapentin
25	23%	Norfentanyl
25	23%	4-ANPP

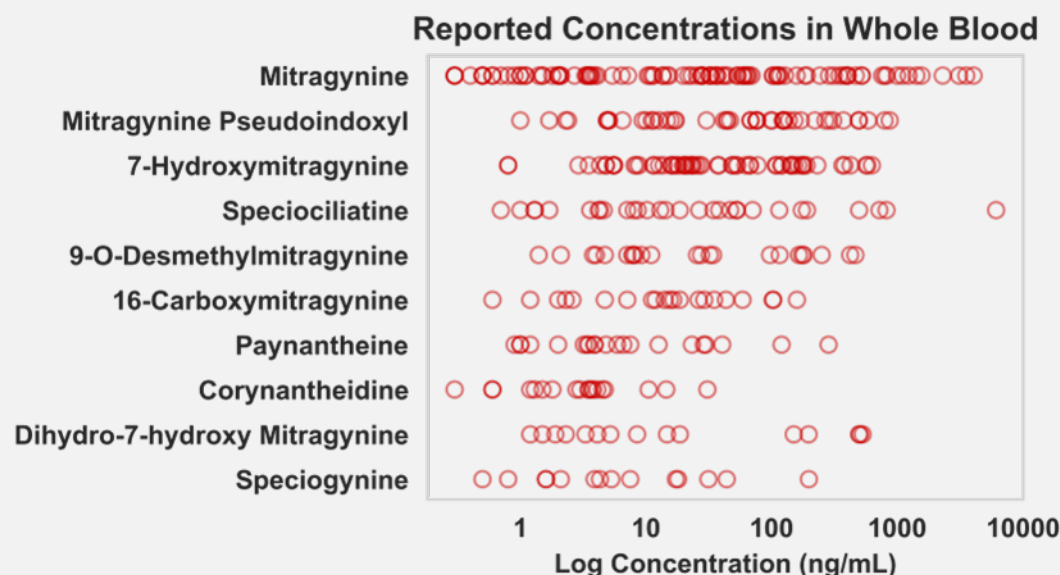
Mitragynine (n = 51), mitragynine pseudoindoxyl (n = 47), and 7-hydroxymitragynine (n = 42) were the top 3 kratom-related detections in whole blood samples from cases with incidents occurring in 2025–2026 (n = 54).

Frequency of kratom-related co-detections in whole blood samples (2025–2026)

Intersecting (i.e., crossing) squares show the number of corresponding co-analyte detections in whole blood samples. For example, 7-hydroxymitragynine was detected in 42 samples; of these 42 samples, mitragynine and dihydro-7-hydroxy mitragynine were co-detected in 39 and 15 samples, respectively (highlighted in orange box).

	Mitragynine	Mitragynine Pseudoindoxyl	7-Hydroxymitragynine	Speciociliatine	9-O-DesmethyImitragynine	16-Carboxymitragynine	Paynantheine	Corynantheidine	Dihydro-7-hydroxy Mitragynine	Speciogynine
Mitragynine	54	51								
Mitragynine Pseudoindoxyl	44	47								
7-Hydroxymitragynine	39	42	42							
Speciociliatine	30	30	26	30						
9-O-DesmethyImitragynine	23	23	21	20	23					
16-Carboxymitragynine	21	21	19	17	17	21				
Paynantheine	21	21	20	19	18	18	21			
Corynantheidine	19	19	19	15	17	16	17	19		
Dihydro-7-hydroxy Mitragynine	15	15	15	9	10	10	9	11	15	
Speciogynine	14	14	12	14	7	7	8	4	0	14

Reported concentrations in all whole blood samples with kratom-related detections

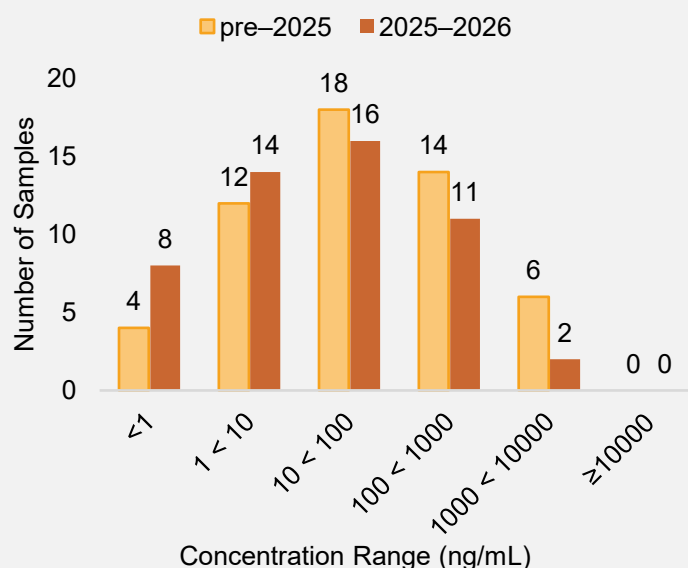


Dihydro-7-hydroxy mitragynine (MGM-15) was added to the library later than the other analytes and has already been detected in 18 samples (1 serum, 1 urine, 1 other, and 15 whole blood—detailed here) originating from 17 overdose cases.

In cases with incidents occurring in 2025–2026, whole blood samples tended to have **lower mitragynine concentrations and higher 7-hydroxymitragynine concentrations** than in those before 2025.

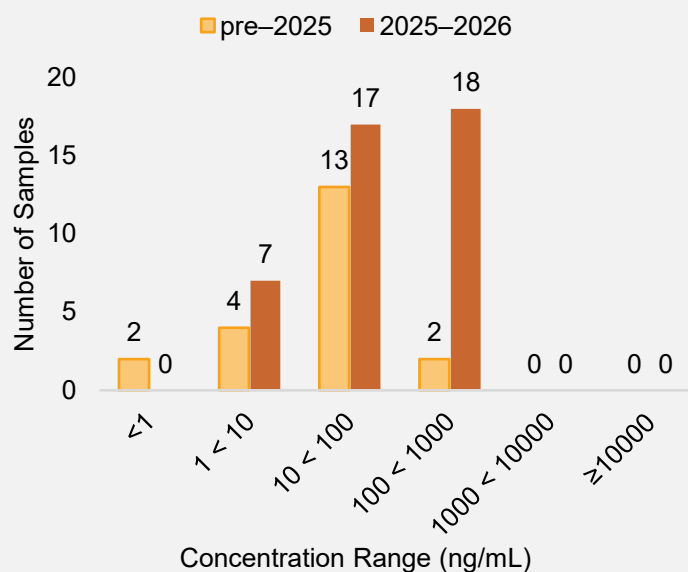
Mitragynine concentrations in whole blood samples

	pre-2025	2025–2026
Whole Blood Samples (n)	54	54
n (%) Samples Detected	54 (100%)	51 (94%)
Median Concentration (ng/mL)	50.3	15.3
Mean Concentration (ng/mL)	338	201
Maximum Concentration (ng/mL)	4050	3540



7-Hydroxymitragynine concentrations in whole blood samples

	pre-2025	2025–2026
Whole Blood Samples (n)	54	54
n (%) Samples Detected	21 (39%)	42 (78%)
Median Concentration (ng/mL)	20.8	50.9
Mean Concentration (ng/mL)	54.7	118
Maximum Concentration (ng/mL)	565	628



Relative 7-hydroxymitragynine and mitragynine concentrations in individual samples

Number of whole blood samples (n) in which:	pre-2025	2025–2026
Mitragynine was detected without 7-hydroxymitragynine	33	12
Mitragynine concentration was greater than 7-hydroxymitragynine	21	13
7-Hydroxymitragynine concentration was greater than mitragynine	0	26
7-Hydroxymitragynine was detected without mitragynine	0	3

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https://www.deadiversion.usdoj.gov/dea_tox/index.html.



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