DEA TOX

DRUG ENFORCEMENT ADMINISTRATION

TOXICOLOGY TESTING PROGRAM

QUARTERLY REPORT

First Quarter – 2023

U.S. Department of Justice
Drug Enforcement Administration
Diversion Control Division
Drug and Chemical Evaluation Section

Contents

Introduction

The Drug Enforcement Administration's Toxicology Testing Program (DEA TOX) began in May 2019 as a surveillance program aimed at detecting new psychoactive substances within the United States. In response to the ongoing synthetic drug epidemic, the Drug Enforcement Administration (DEA) awarded a contract with the University of California at San Francisco (UCSF) to analyze biological samples generated from overdose victims of synthetic drugs.

In many cases, it can be difficult to ascertain the specific substance responsible for the overdose. The goal of DEA TOX is to connect symptom causation to the abuse of newly emerging synthetic drugs (e.g. synthetic cannabinoids, synthetic cathinones, synthetic opioids, other hallucinogens, etc.).

DEA has reached out to local health departments, law enforcement partners, poison centers, drug court laboratories, hospitals, and other medical facilities to offer testing of leftover or previously collected samples for analysis of synthetic drugs. DEA TOX is interested in patients thought to have ingested a synthetic drug, where the traditional drug screen has produced little or no viable options to explain the symptoms exhibited by the patient (alcohol and THC are exempted). DEA TOX may approve testing of unused biological samples or on occasion non-biological samples from a medical facility or law enforcement partner only.

Requests for testing may be submitted directly to DEA TOX (**DEATOX@DEA.GOV**). Upon explicit approval of the request for testing of specific samples, the originating laboratory is invited to send their samples to the Clinical Toxicology and Environmental Biomonitoring (CTEB) Laboratory at UCSF. DEA covers the full cost of analysis for each sample approved for testing. Using liquid chromatography quadrupole time-of-flight mass spectrometry, synthetic drugs identified within the samples are confirmed and quantified.

The CTEB laboratory currently maintains a comprehensive drug library consisting of 1218 drugs, of which 962 are new psychoactive substances.

This publication presents the results of cases analyzed and completed by the CTEB laboratory from January 1, 2023 through March 31, 2023. Confirmed levels denoted in the tables below with a defined range represent the low and high concentrations reported when the frequency of detection is greater than one.

Summary

Between January 1, 2023 and March 31, 2023, 176 biological samples from 168 cases originating from 14 states namely, California (2), Illinois (6), Indiana (1), Kansas (3), Kentucky (78), Louisiana (1), Maryland (6), Missouri (3), Nebraska (11), Oregon (8), Tennessee (35), Texas (3), Utah (6), and Washington (13) were submitted to DEA TOX. These samples were analyzed for NPS, TID, prescription or OTC drugs, DSS, and P/A/I. The biological samples submitted consisted of 28 serum, 21 plasma, 116 whole blood, 10 urine, and 1 tissue samples. Fifteen drug product samples were also analyzed in quarter one of 2023, originating from Louisiana (2), Oregon (1), and Washington (12).

DEA TOX identified and confirmed a total of 1,288 drugs and metabolites that consisted of 139 NPS detections, 513 TID detections, 485 prescription or OTC drug detections, 5 DSS, and 146 P/A/I detections during this reporting period (Fig. 1A)[1]. While some drugs identified could be placed in more than one category, for purposes of this report and for consistency, DEA TOX placed such substances in a single category only. Many prescription drugs that are commonly abused and encountered are listed as TID. Substances that are not approved by the Food and Drug Administration for medical use within the U.S. are considered NPS.

A breakdown of the 1,288 total drug and metabolite confirmations demonstrated 109 different drugs, which consisted of 21 NPS, 16 TID, 61 prescription or OTC drugs, 5 DSS, and 6 P/A/I (Fig. 1B).

Of the cases submitted this quarter, 67 out of the 168 cases (39.9%) detected at least one NPS. In addition, 112 out of the 168 cases (66.6%) contained fentanyl.

Fig. 1A Detection frequency

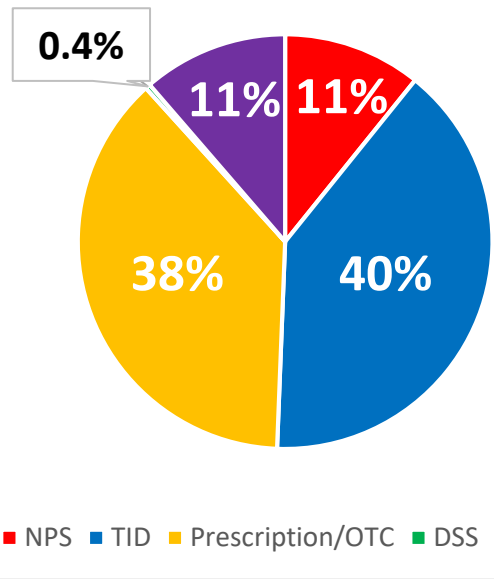
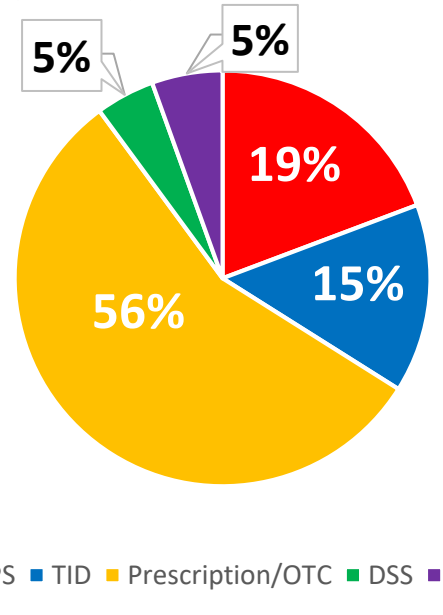


Fig. 1B Types of Drugs Detected



New Psychoactive Substances

DEA TOX confirmed 118 detections of 21 NPS[§] (Table 1) from six different classes of drugs (Figure 2A) in biological samples in the first quarter of 2023. The total encounters for each NPS class are summarized in Figure 2B. An additional 21 NPS detections from drug products are described in Table 6.

Figure 2A. Number of Substances Identified for Each NPS Class

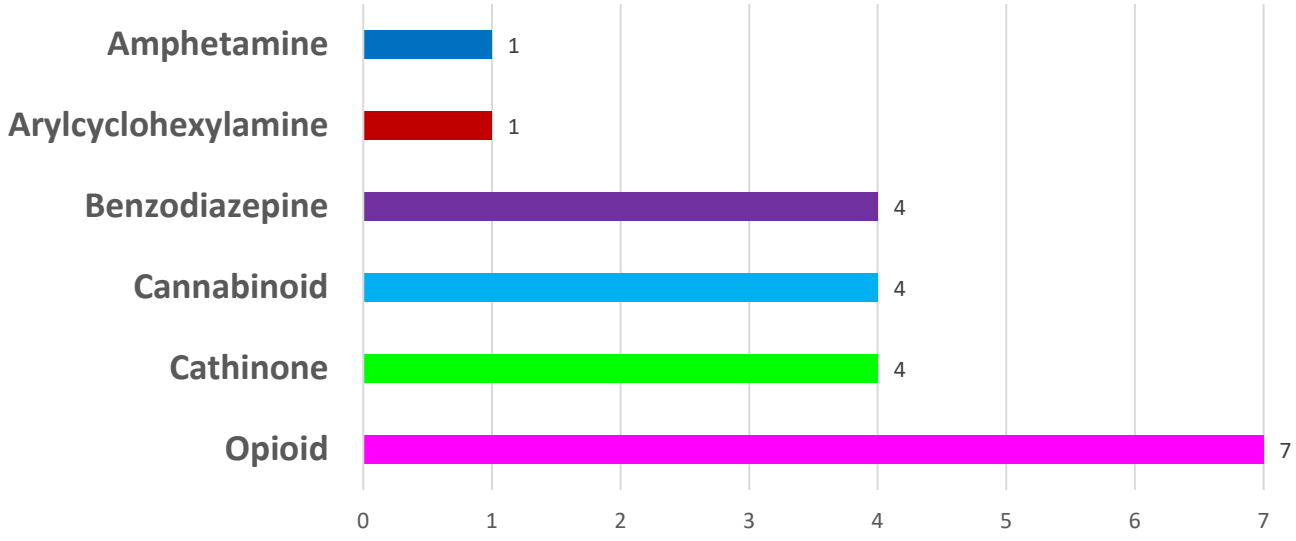


Figure 2B. Total Encounters for Each NPS Class

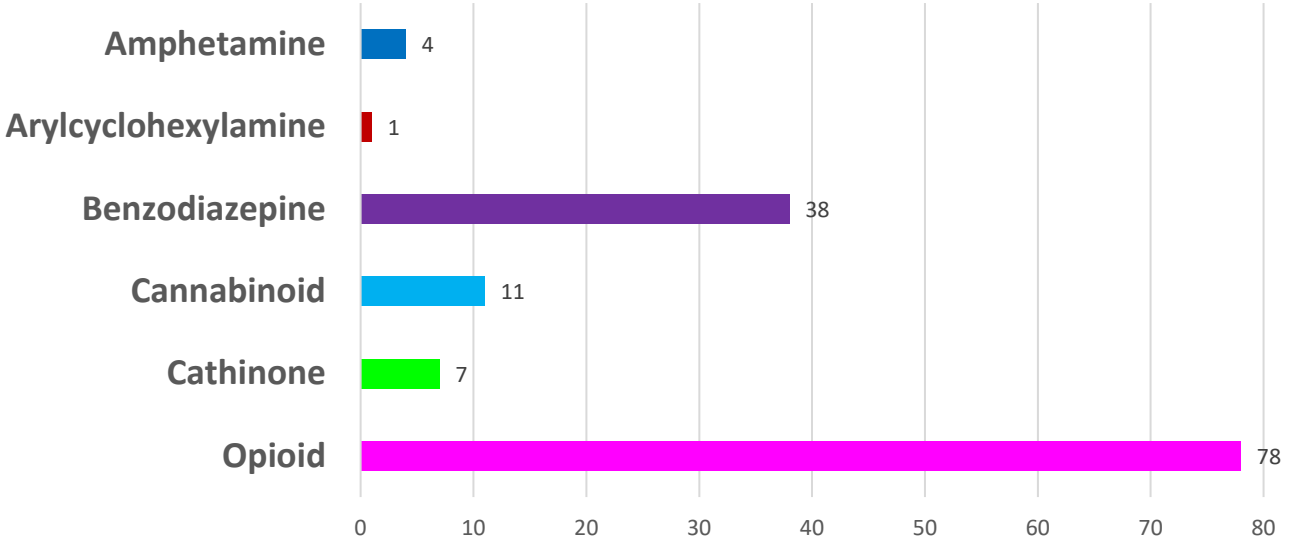


Table 1. NPS detected in Biological Samples – First Quarter 2023

Drug Class	Drug	Freq.	States Found*	Confirmed Levels (ng/mL)**			
				S	P	WB	U
Amphetamine (1)	HHMA	1	CA			49.1	
	MDMA	3	CA, WA (2)	188-362		912	
Arylcyclohexylamine (1)	Deschloro *N*-Ethyl Ketamine (O-PCE)	1	UT			151	
Benzodiazepine (4)	8-Amino Clonazolam	8	IL (2), MD, NE, TN (4)		0.2-6.2	0.2-12.5	
	Bromazolam	25	IL (4), KY (2), MD, MO (3), TN (10), TX (2), WA (3)	2.9-100	4.4-207	1.5-427	11
	Clonazolam	1	IL		2.9		
	Flualprazolam	3	TN (3)			1.4-12.8	
	Flubromazepam	1	MO			0.5	
Cannabinoid (4)	11-nor-9-carboxy-delta-8-THC	5	KY (3), LA, TX		95.1-575		257
	ADB-BUTINACA	3	KY (3)		4.9-12.0	2.4	
	MDMB-4en-PINACA	1	KY			2.1	
	MDMB-4en-PINACA Acid Metabolite	1	KY			25.1	
	MDMB-4en-BUTINACA	1	KY			1	
Cathinone (4)	alpha-PiHP	2	TN (2)			0.9-2.5	
	N,*N*-Dimethylpentylone	1	TN			83.4	
	Pentylone	1	TN			10.7	
	Eutylone	3	TN (3)			0.7-4.6	

Table 1 (Continued). NPS in Biological Samples – First Quarter 2023

Drug Class	Drug	Freq.	States Found*	Confirmed Levels (ng/mL)**			
				S	P	WB	U
Opioid (7)	5-Amino Isotonitazene	1	MD			0.4	
	7-OH Mitragynine	3	KY, TN, WA	33.7		4.8-27.6	
	Acetyl Fentanyl	4	CA, TN (3)			0.5-4.7	
	Brorphine	3	TN (3)			0.1-2.3	
	Despropionyl *para*-fluorofentanyl	11	LA, TN (10)	0.6		0.1-6.5	
	Metonitazene	7	IL, TN (6)		3.3	1-6.8	
	Mitragynine	5	KY, NE, TN (2), WA	273		23.1-397	
	para-Fluorofentanyl	21	CA, KY (3), LA, NE (2), TN (12), WA (2)	2.5-3.7	1.4	0.4-25.4	
	Protonitazene	2	NE, TN			0.9-2.5	

* CA – California; IL – Illinois; KY – Kentucky; LA – Louisiana; MD – Maryland; MO – Missouri; NE – Nebraska; TN – Tennessee; TX – Texas; UT – Utah; WA – Washington

**S – Serum; P – Plasma; WB – Whole Blood; U – Urine

§ - Parent drugs or metabolites are only counted once for the number of drugs detected in Tables 1-5. If only a metabolite is encountered in the absence of a parent drug, it will still be counted as a unique drug. Both parent drugs and metabolites are counted as detections.

Traditional Illicit Drugs

DEA TOX confirmed 487 detections of 16 TIDs[§] (Table 2) in biological samples in the first quarter of 2023. An additional 26 TID detections from drug products are described in Table 6.

Table 2. TID Detected in Biological Samples – First Quarter 2023

Drug Class	Drug	Freq.	States Found*	Confirmed Levels (ng/mL)**			
				S	P	WB	U
Amphetamine (2)	4-OH Methamphetamine	1	OR				71.5
	Amphetamine	38	CA, OR, KS, KY (12), MD (1), NE (5), TN (10), UT, WA (6)	86.4-299	27.2	4.4-230	
	Methamphetamine	59	CA, KS, KY (17), IL, NE (7), OR (2), TN (17), UT (3), WA (10)	4.5-3180	0.5-379	2.8-2500	1010
Arylcyclo-hexylamine (1)	Ketamine	14	CA, KY (10), OR, TX (2)		18.8-152	246-636	47.8
Cannabinoid (1)	11-nor-9-carboxy-delta-9-THC	14	KY (6), MO (3), OR (4), TN	63.1-200	44.4	34.8-200	1190
	Delta-9-THC	10	TN (10)	5.3-55.4		57.4-239	
Cocaine (1)	Benzoylecgonine	48	KY (27), LA, NE (3), OR (6), TN (9), WA (2)	39.5-557	5.5-361	0.5-16900	3.1-94000
	Cocaethylene	6	KY, LA, NE (2), OR, TN				
	Cocaine	25	KY (8), LA, NE (4), OR (3), TN (7), WA (2)	0.6-2980	100	0.1-14800	
	Ecgonine Methyl Ester	29	KY (18), LA, NE (2), OR (4), TN (2), WA (2)				
Lysergamide (1)	LSD	3	KY			0.5-3.2	

Table 2 (Continued). TID in Biological Samples – First Quarter 2023

Drug Class	Drug	Freq.	States Found*	Confirmed Levels (ng/mL)**			
				S	P	WB	U
Opioids (10)	6-Acetyl Morphine	2	KS, WA	1.6		3.4	
	Beta-hydroxy Fentanyl	17	CA, KY (5), MO, NE (2), OR, TN (6), WA	1.8	3.7-10.2	0.3-2.6	3.5
	Codeine	10	KY (2), KS, LA, TN (6)			0.2-15.8	
	Desmethyl-cis-tramadol	2	TN (2)			0.1-1	
	Fentanyl	99	CA (2), IL, IN, KS, KY (28), LA, MO, NE (8), OR (7), TN (31), TX (3), UT (3), WA (12)	3.2-88.1	0.1-93.5	0.2-791	2.2-24.6
	Hydrocodone	4	KY, MO, NE, TN			8.9-50.3	
	Hydromorphone	10	KY (7), TN, TX (2)			0.4-11.3	25.6
	Morphine	10	KS, KY, NE, TN (7)			1.2-130	
	Norfentanyl	72	CA (2), IL, IN, KS, KY (20), LA, MO, NE (6), OR, TN(24), TX, UT (3), WA (10)	1-13.5	0.2-38.1	0.1-11.2	5.8-360
	Oxycodone	7	KY (4), MD, TN (2)			0.6-7.9	235
	Oxymorphone	1	TN			6.3	
	Tramadol	6	NE, TN (5)			0.2-6.7	

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Prescription and Over the Counter Drugs

DEA TOX confirmed 475 detections of 61 prescription or OTC drugs§ (Table 3) in the first quarter of 2023. Drugs for the prescription/OTC drugs panel are not typically quantitated unless specifically requested thus "Confirmed Levels" are not provided. An additional 10 detections from drug products are described in Table 6.

Table 3. Prescription or OTC drugs detected in Biological Samples – First Quarter 2023

Drug Class	Drug	Freq.	States Found*
Anesthetic (1)	Bupivacaine	1	KY
	Lidocaine	19	CA, KS, KY (7), LA, MD, TN (5), TX, WA (2)
Antibiotic (1)	Sulfomethoxazole	2	KY, WA
Anticonvulsant (5)	Gabapentin	25	CA, KS, KY (14), NE (2), OR, TN (5), WA
	Lamotrigine	9	CA, KY (4), MD, TN (2), WA
	Levetiracetam	8	KY (7), WA
	Oxcarbazepine	1	MD
	Topiramate	1	KY
Antidepressant (13)	Amitriptyline	1	MD
	Bupropion	1	TN
	Citalopram	3	KY, MD, OR
	Doxepin	5	KY (4), TN
	Duloxetine	3	KY (2), WA
	Fluoxetine	1	KY
	mCPP**	9	KY (6), TN (2), WA
	Mirtazapine	5	KY (2), TN (2), WA
	Nordoxepin	5	KY (4), TN
	Norfluoxetine	1	KY
	Nortriptyline	1	KY
	Protriptyline	1	MD
	Selegiline	1	TN
	Sertraline	5	KY (2), KS, TN, UT
	Trazodone	14	KY (9), OR, TN (2), UT, WA
	Venlafaxine	1	KY
	Zolpidem	1	NE
Antidiarrhea (1)	Loperamide	2	TN (2)

**mCPP is an expected metabolite of trazadone

Table 3 (Continued). Prescription or OTC drugs in Biological Samples – First Quarter 2023

Drug Class	Drug	Freq.	States Found*
Antihistamine (8)	Brompheniramine	1	KY
	Chlorpheniramine	2	KY (2)
	Diphenhydramine	46	CA, IL, KY (19), LA, MD, NE, OR, TN (21)
	Doxylamine	7	KY (4), TN, TX (2)
	Hydroxyzine	12	KY (10), NE, TN
	Norpseudoephedrine	5	KY (5)
	Promethazine	8	KY (4), LA, MD, TN, TX
	Pseudoephedrine	4	MD, TN (3)
Antipsychotic (4)	Aripiprazole	4	IL, KS, KY (2)
	Haloperidol	1	KY
	Olanzapine	4	KY (3), NE
	Quetiapine	5	KY (3), TN(2)
Antiretroviral (1)	Emtricitabine	2	KY (2)
Anxiolytic (1)	Buspirone	1	TN
Benzodiazepine (6)	7-amino Clonazepam	13	KY (7), MD, NE, TN (4)
	Alpha-hydroxy Alprazolam	4	KY, MO, TX (2)
	Alprazolam	11	CA, KY (2), MO (2), NE (2), TN (3), TX
	Chlordiazepate	1	KY
	Clonazepam	8	KY (6), TN (2)
	Diazepam	10	KY (5), LA, NE (2), TN (2)
	Lorazepam	18	IN, KY (13), NE (2), OR, TX
	Midazolam	25	IL, KY (21), OR, TN, TX
	Nordiazepam	10	KY (5), LA, NE (2), TN (2)
	Oxazepam	3	KY (2), LA
	Temazepam	5	KY (3), LA, TN
Bronchodilator (1)	Albuterol	1	TN
Cardiovascular (8)	Amiodarone	6	KY, MD (2), NE, TN (2)
	Atenolol	1	KY
	Atorvastatin	3	MD, NE, WA
	Carvedilol	2	KY, MD
	Clonidine	1	KY
	Diltiazem	1	TN
	Labetalol	2	KY, UT
	Metoprolol	3	NE, TN (2)
Cough Suppressant (2)	Dextromethorphan	14	KY (6), LA, MD, TN (3), TX (2), WA
	Dextrorphan	13	KY (6), LA, MD, TN (3), TX (2), WA

Table 3 (Continued). Prescription or OTC drugs in Biological Samples – First Quarter 2023

Drug Class	Drug	Freq.	States Found*
Diuretic (1)	Furosemide	1	TN
Muscle Relaxant (2)	Cyclobenzaprine	6	KY (3), NE, TN, WA
	Methocarbamol	1	KY
Opioid (3)	Buprenorphine	9	KY (7), NE, OR
	EDDP	6	IL, KY (3), NE, TN
	Methadone	7	IL, KY (3), MD, NE, TN
	Naloxone	46	CA, IL, IN, KS, KY (20), NE (5), OR (4), TN (11), TX (2)
	Norbuprenorphine	6	KY (4), NE, OR
Pain Reliever (2)	Acetaminophen	6	IN, OR, TX, UT (2), WA
	Naproxen	2	KY, OR
Stimulant	Methylphenidate	2	KY, UT

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Dietary Supplement Stimulants

DEA TOX confirmed 3 detections of 3 DSS (Table 4) in biological samples in the first quarter of 2023. An additional two detections in drug products are described in Table 6.

Table 4. DSS Detected in Biological Samples – First Quarter 2023

Drug Class	Drug	Freq.	States Found*
Stimulant	Hordenine	1	KY
	Yohimbine	1	KY
Hormone	Melatonin	1	KY

*KY – Kentucky

Precursors/Additives/Impurities

DEA TOX confirmed 133 detections of five P/A/I§ (Table 5) in biological samples in the first quarter of 2023. An additional 13 detections from drug products are described in Table 6.

Table 5. P/A/I Detected in Biological Samples – First Quarter 2023

Drug Class	Drug	Freq.	States Found*	Confirmed Levels (ng/mL)**			
				S	P	WB	U
Adulterant	Quinine	35	IL, KY (9), MD, NE (2), TN (22)		95.7-1430	0.1-2080	
	Phenacetin	1	NE			3.3	
	Xylazine	19	KY (2), MD, TN (16)			0.4-44.5	
Impurity	*N*,*N*-dimethylamphetamine	22	KS, KY (3), NE (6), OR, TN (6), UT, WA (4)	134-646		0.3-16.7	2.7
Precursor	4-ANPP	56	CA, KS, KY (12), LA, MO, NE (5), OR (6), TN (22), UT, WA (6)	1.2-10.9	7.9	0.1-243	

* CA – California; IL – Illinois; KS – Kansas; KY – Kentucky; LA – Louisiana; MD – Maryland; MO – Missouri; NE – Nebraska; OR – Oregon; TN – Tennessee; UT – Utah; WA - Washington
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Drug Products

DEA TOX confirmed 72 detections of 14 drugs (Table 6) in 17 drug product samples analyzed in the first quarter of 2023.

Table 6. Drugs Detected in Drug Products – First Quarter 2023

Drug Class	Drug Subclass	Drug	Freq.	States Found*	Level (mg)
New Psychoactive Substances	Opioid	Butyryl Fentanyl	1	WA	Trace
		Despropionyl *para*-fluoro fentanyl	1	WA	0.5
		N-boc Norfentanyl	2	WA	Trace
		para-Bromofentanyl	1	WA	Trace
		para-Chlorofentanyl	1	WA	Trace
		para-Fluorofentanyl	3	WA	Trace-14
		Acetyl Fentanyl	12	WA	Trace
Traditional Illicit Drugs	Amphetamine	Methamphetamine	2	WA	Trace
	Cocaine	Benzoylecgonine	1	WA	Trace
		Cocaine	1	WA	0.6
	Opioid	Beta-Hydroxy Fentanyl	2	WA	Trace
		Codeine	2	LA	17-22
		Fentanyl	12	WA	1.4-45.8
		Norfentanyl	6	WA	Trace
Prescription Drugs	Anesthetic	Lidocaine	2	WA	Trace-10.6
	Benzodiazepine	Diazepam	2	WA	8-9.8
	Pain Reliever	Acetaminophen	6	LA (2), WA (4)	29.2-290
Precursors		4-ANPP	11	WA	0.06-9.7
		4-AP	2	WA	Trace
Stimulants		Caffeine	1	WA	NQ
		Nicotine	1	WA	Trace

* LA – Louisiana; WA – Washington

Select Drug Product Exhibits:

Table 7. Drug Product Exhibit #1

Drug Class	Drug	State Found*	Confirmed Levels: mg of drug/gram of drug product (%)	Actual Amount within Drug Product
Exhibit 1: Total Weight – 25.8 mg				
Opioid	Fentanyl	WA	378 (37.8%)	25.8 mg
Opioid	Acetyl Fentanyl		Trace	Trace
Opioid	Butyryl Fentanyl		Trace	Trace
Precursor	4-ANPP		Trace	Trace

Table 8. Drug Product Exhibit #2

Drug Class	Drug	State Found*	Confirmed Levels: mg of drug/gram of drug product (%)	Actual Amount within Drug Product
Exhibit 1: Total Weight – 225.0 mg				
Opioid	Fentanyl	WA	202 (20.2%)	45.5 mg
Anesthetic	Lidocaine		47 (4.7%)	10.6 mg
Precursor	4-ANPP		43 (4.3%)	9.7 mg
Opioid	Acetyl Fentanyl		Trace	Trace
Precursor	Beta-hydroxy fentanyl		Trace	Trace
Precursor	*N*-boc norfentanyl		Trace	Trace
Precursor	Norfentanyl		Trace	Trace
Opioid	*para*-Bromofentanyl		Trace	Trace

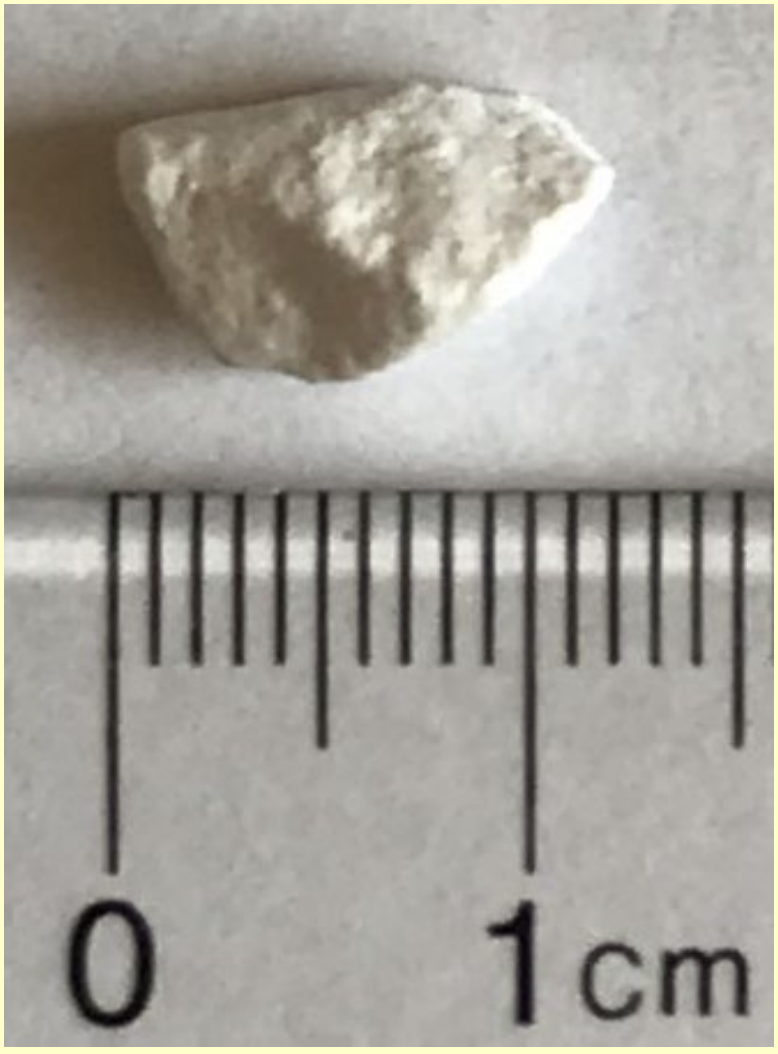


Table 9. Drug Product Exhibit #3

Drug Class	Drug	State Found*	Confirmed Levels: mg of drug/gram of drug product (%)	Actual Amount within Drug Product
Exhibit 1: Total Weight – 133.4 mg				
Opioid	Fentanyl	WA	343 (34.3%)	45.8 mg
Precursor	4-ANPP		8 (0.8%)	1.1 mg
Opioid	Acetyl fentanyl		Trace	Trace
Stimulant	Methamphetamine		Trace	Trace
Opioid	*para*-Fluorofentanyl		Trace	Trace
Opioid	*para*-Chlorofentanyl		Trace	Trace

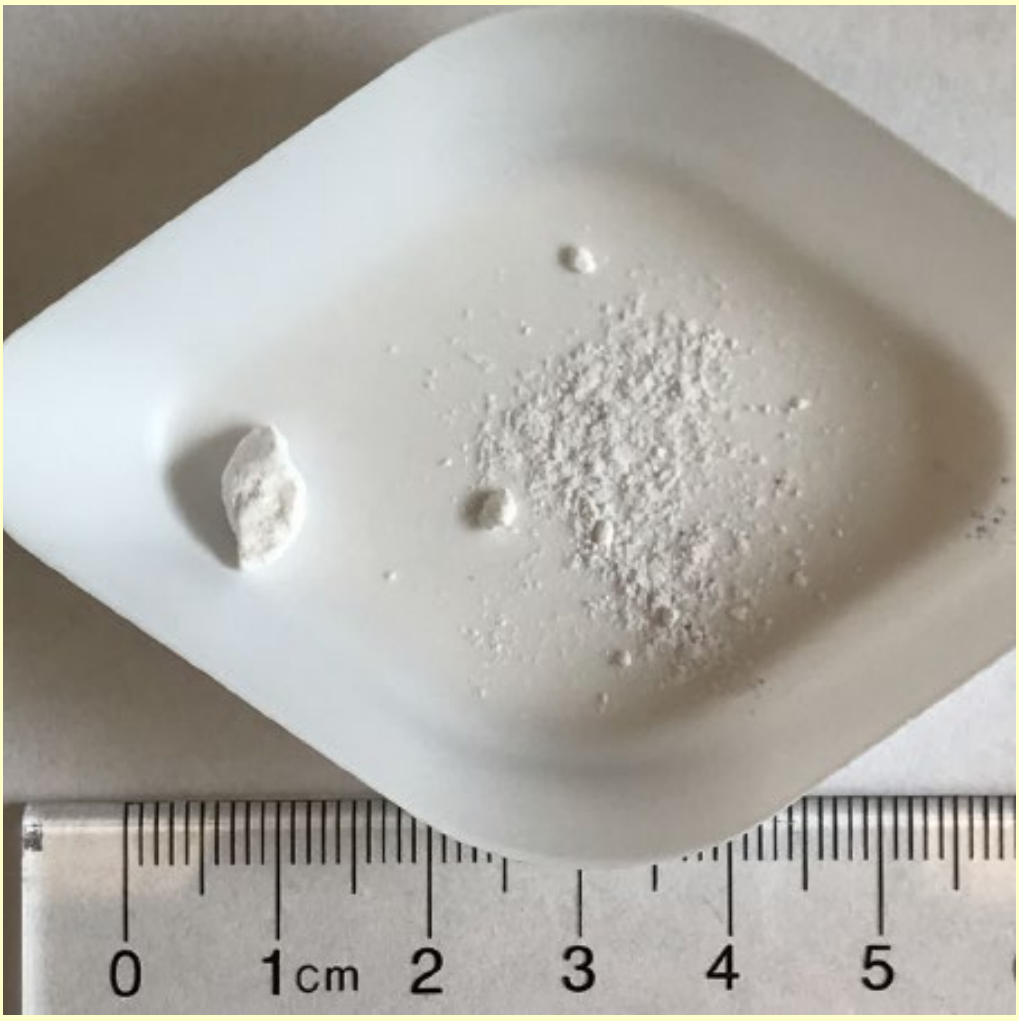


Table 10. Drug Product Exhibit #4

Drug Class	Drug	State Found*	Confirmed Levels: mg of drug/gram of drug product (%)	Actual Amount within Drug Product
Exhibit 1: Total Weight – 166.8 mg				
Opioid	*para*-Fluorofentanyl	WA	85 (8.5%)	14 mg
Opioid	Fentanyl		77 (7.7%)	13 mg
Precursor	4-ANPP		3 (0.3%)	0.5 mg
Precursor	Despropionyl *para*-fluorofentanyl		2 (0.2%)	0.3 mg
Opioid	Acetyl fentanyl		Trace	Trace
Precursor	Beta-hydroxy fentanyl		Trace	Trace
Precursor	Norfentanyl		Trace	Trace
Opioid	*para*-Fluoroacetyl fentanyl		Trace	Trace

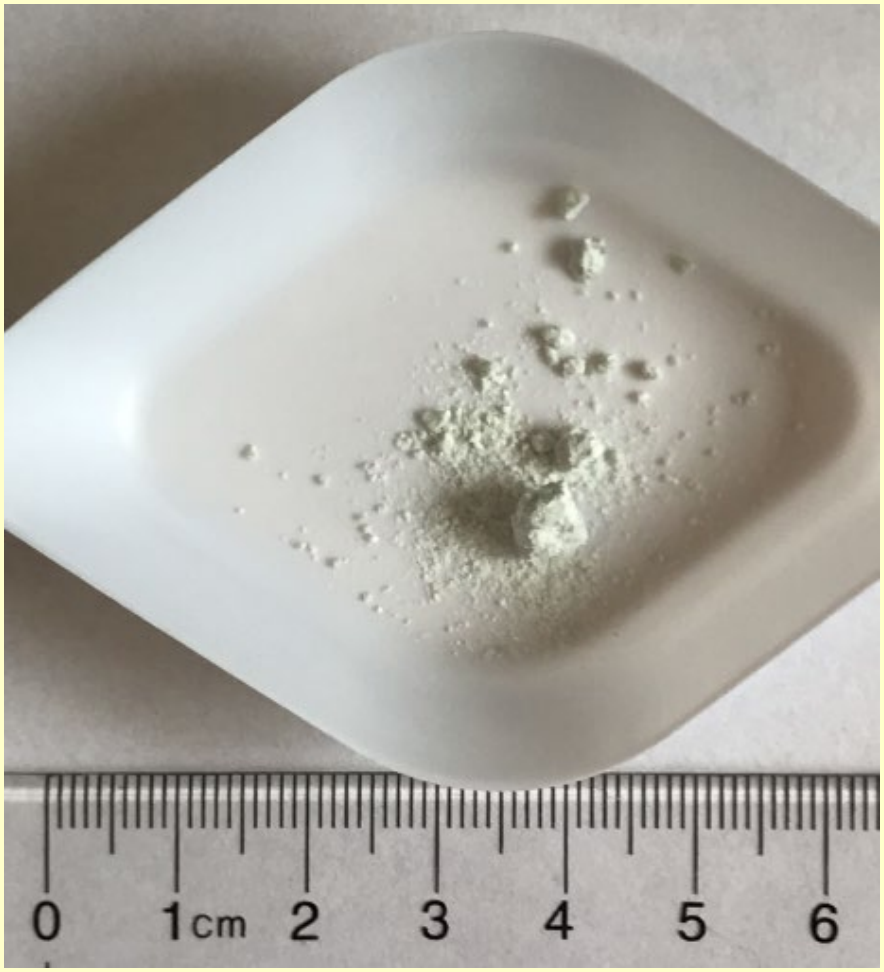


Table 11. Drug Product Exhibit #5

Drug Class	Drug	State Found*	Confirmed Levels: mg of drug/gram of drug product (%)	Actual Amount within Drug Product
Exhibit 1: Total Weight – 73.6 mg				
Pain reliever	Acetaminophen	WA	454 (45.4%)	33.4 mg
Opioid	Fentanyl		32 (3.2%)	2.4 mg
Precursor	4-ANPP		Trace	Trace
Opioid	Acetyl fentanyl		Trace	Trace

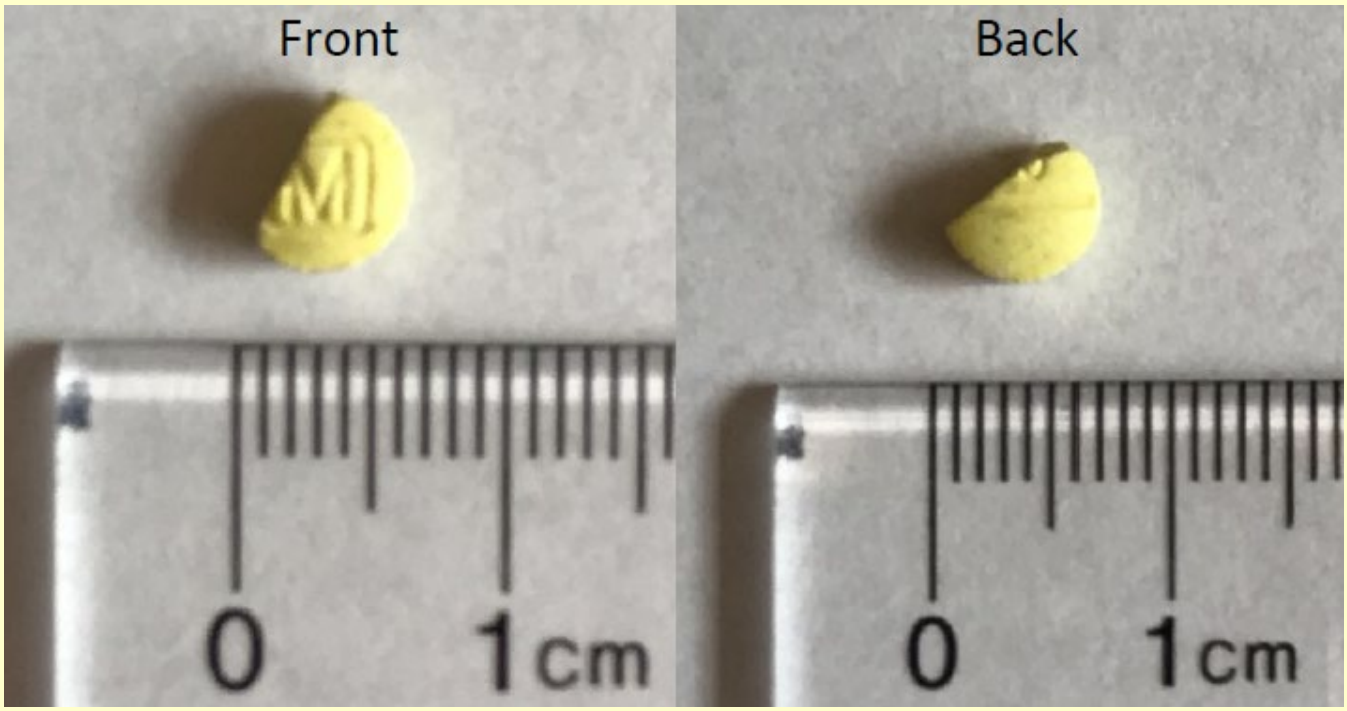
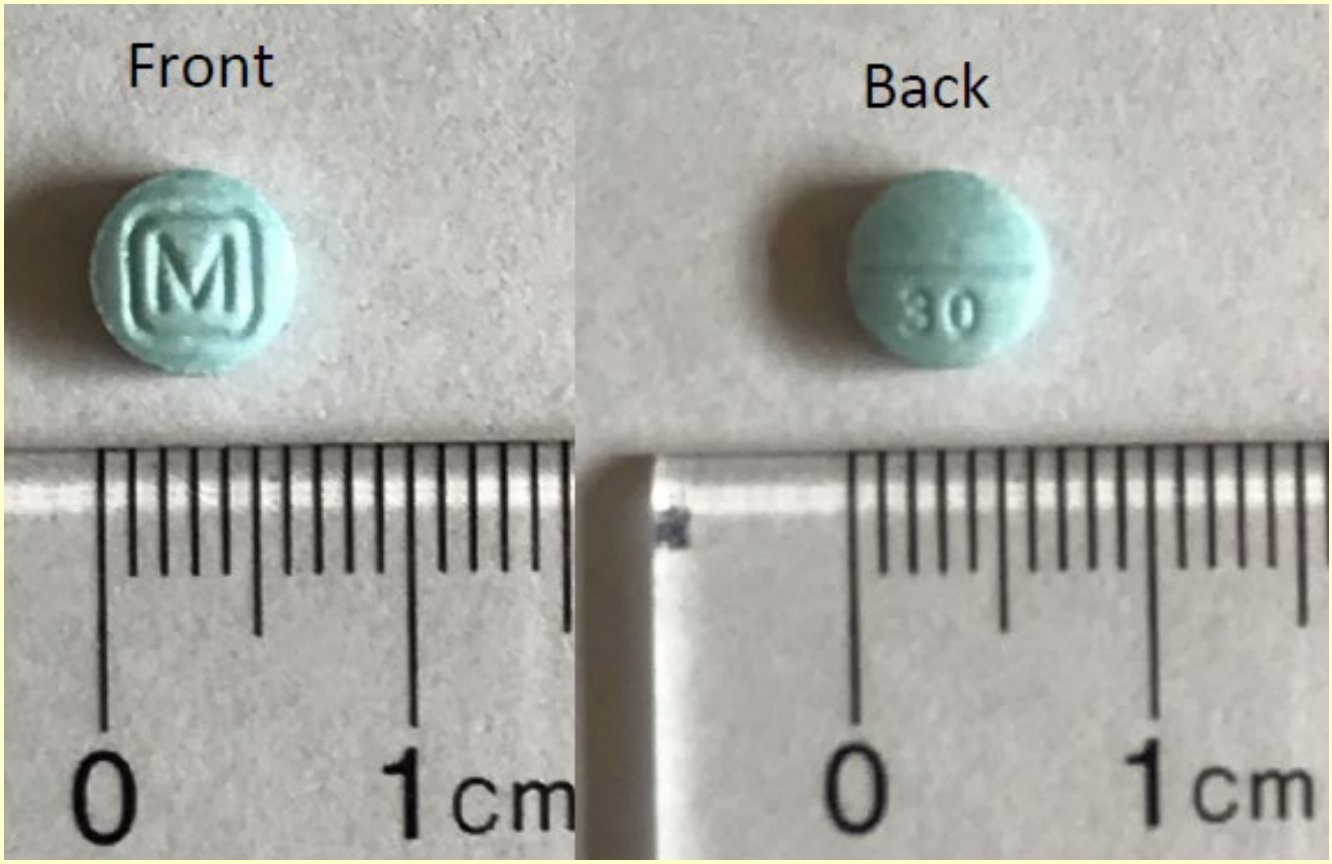


Table 12. Drug Product Exhibit #6

Drug Class	Drug	State Found*	Confirmed Levels: mg of drug/gram of drug product (%)	Actual Amount within Drug Product
Exhibit 1: Total Weight – 94.4 mg				
Pain reliever	Acetaminophen	WA	355 (35.5%)	33.5 mg
Opioid	Fentanyl		30 (3.0%)	2.8 mg
Precursor	4-ANPP		Trace	Trace
Opioid	Acetyl fentanyl		Trace	Trace

Table 13. Drug Product Exhibit #7

Drug Class	Drug	State Found*	Confirmed Levels: mg of drug/gram of drug product (%)	Actual Amount within Drug Product
Exhibit 1: Total Weight – 107.4 mg				
Pain reliever	Acetaminophen	WA	310 (31.0%)	33.3 mg
Opioid	Fentanyl		17 (1.7%)	1.8 mg
Precursor	4-ANPP		Trace	Trace
Opioid	Acetyl fentanyl		Trace	Trace



Contact Information

We invite medical and law enforcement facilities to contact our program if you encounter an overdose of a suspected synthetic drug and desire to have any leftover biological samples (blood preferred) analyzed further for such synthetic substances.

- **Sample Qualifications:**
  - Patients thought to have ingested a synthetic drug, where the traditional drug screen has produced little or no viable options to explain the symptoms exhibited by the patient (alcohol and THC are exempted).
- **How to Contact Us and Send Your Samples:**
  - Once the above qualifications are satisfied:
    - Email DEATOX@DEA.GOV with a brief description of the case (including initial toxicology screen and history) and a request for testing.
    - DEA will respond to each inquiry, and if approved, will send the instructions for packing and shipping of sample(s) to UCSF.
      - The main reason for disapproval of a case would be the identification of substances including methamphetamine, heroin, fentanyl, cocaine, LSD, PCP etc. in a routine toxicology screening at your facility.
      - This program's goal is to connect symptom causation to abuse of newly emerging synthetic drugs (e.g. synthetic cannabinoids, synthetic cathinones, fentanyl-related substances, other hallucinogens etc.).
  - Ensure that you de-identify and label the sample with a numerical value, sex, date of birth or age, and the date and time the sample was collected in accordance with the labeling instructions (sent with shipping instructions).
  - Keep a master list of the patients and the numerical values you allocated to each sample at your institution.
- **Cost of Sample Analysis:**
  - DEA will cover the full cost of testing the patient samples.
    - The sender will only be responsible for paying for packing and shipping samples to UCSF.
- **Turn-around Time:**
  - Results are expected within three to four weeks of receipt of the sample at UCSF except in rare occurrences when a novel substance is identified.

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Clinical Toxicology
and Environmental Biomonitoring Laboratory

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