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FORENSIC TESTING PROGRAM

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Blood Cannabinoids Analysis
Test No. 23-5662 Summary Report

Each sample set contained blood samples from three separate cases, where each individual is suspected of being under the influence of cannabinoids. Participants were requested to analyze the blood samples and report the presence of any cannabinoids, any quantitative data obtained (including uncertainty), and the methods used. Data were returned from 25 participants and are compiled into the following tables:

This report contains the data received from the participants in this test. Since these participants are located in many countries around the world, and it is their option how the samples are to be used (e.g., training exercise, known or blind proficiency testing, research and development of new techniques, etc.), the results compiled in the Summary Report are not intended to be an overview of the quality of work performed in the profession and cannot be interpreted as such. The Summary Comments are included for the benefit of participants to assist with maintaining or enhancing the quality of their results. These comments are not intended to reflect the general state of the art within the profession.

Participant results are reported using a randomly assigned "WebCode". This code maintains participant's anonymity, provides linking of the various report sections, and will change with every report.

Manufacturer's Information

Each sample set contained a blood sample for three separate cases where an individual is suspected of being under the influence of cannabinoids. Each case sample consisted of one red-top glass vial containing whole human blood. Participants were asked to analyze the blood samples and report the presence of cannabinoids and associated quantitative data, including uncertainty.

SAMPLE PREPARATION: The human blood used in this test was from the same lot, which tested negative for a panel of common controlled substances prior to acquisition from a commercial supplier. A stock solution of cannabinoids was used to spike items. These solutions were obtained in sealed ampoules and were not opened until item preparation. Items were prepared separately using the following procedure.

ITEMS 1, 2, AND 3 (PREPARATION): Item preparation consisted of adding a predetermined amount of one or more cannabinoid stock solutions to human whole blood containing an appropriate amount of sodium fluoride; this mixture was stirred continuously. A specific volume was pipetted into each red-top vial. The vials were sealed and inverted to mix the preservatives in the vials with the blood solution. All vials were stored in a refrigerator immediately after item preparation and until the sample sets were prepared.

VERIFICATION: Laboratories that conducted predistribution analysis of the samples reported the expected cannabinoids. The reported concentration values were consistent amongst the predistribution laboratories. CTS notes that some labs do not have a validated method to test for hydroxy-THC and therefore do not report this analyte.

SAMPLE SET ASSEMBLY: Each sample set contained one vial of each of the three items placed into a Department of Transportation regulated shipping container. The sample packs were then returned to the refrigerator until shipment.

Preparation Concentration		
Item 1 Drug (Concentration)	**Item 2 Drug (Concentration)**	**Item 3 Drug (Concentration)**
THC (79 ng/mL) Carboxy THC (27 ng/mL) Hydroxy THC (4.2 ng/mL)	Carboxy THC (24.5 ng/mL)	THC (29.3 ng/mL) Carboxy THC (237.9 ng/mL) Hydroxy THC (17.1 ng/mL)
Please note that the preparation concentration is the value used for calculations during the test preparation phase and may not necessarily represent the final concentration of the samples. It is advised to wait for the Grand Mean statistics available in the Summary and Individual Reports before evaluating performance.		

Summary Comments

This test was designed to allow participants to assess their proficiency in the examination for the presence and concentration of cannabinoids in blood. The sample sets provided to participants contained three vials of human whole blood, each representing a separate case. Participants were asked to analyze the blood sample and report the presence of any cannabinoids, any quantitative data obtained (including uncertainty), and the methods used (Refer to the Manufacturer's Information for preparation details).

A total of 25 participants returned results. Of these, 22 screened all three items for the presence of cannabinoids and three did not screen any items.

Item 1
Of the 22 participants that reported screening results, 18 indicated that cannabinoids were detected. A total of 23 participants reported confirmatory results. The tally in the Confirmatory Response Summary table reveals that all participants reported the presence of THC, 20 reported Carboxy THC, and 10 confirmed the presence of Hydroxy THC. The breakdown of how each participant reported is as follows: 10 reported the presence of THC, Carboxy THC and Hydroxy THC, ten reported the presence of THC and Carboxy THC and three reported the presence of only THC.

Item 2
Of the 22 participants that reported screening results, 16 indicated that cannabinoids were detected. A review of confirmatory testing revealed that 19 participants reported the presence of Carboxy THC and four participants detected no drugs nor metabolites.

Item 3
All 22 participants that reported screening results indicated that cannabinoids were detected. A total of 25 participants reported confirmatory results. The tally in the Confirmatory Response Summary table reveals that THC and Carboxy THC were reported by 23 participants and 15 participants reported the presence of Hydroxy THC. The breakdown of how each participant reported is as follows: 15 reported the presence of THC, Carboxy THC and Hydroxy THC, six reported the presence of THC and Carboxy THC, and four reported the presence of a single cannabinoid.

For all three items, the most common screening method was immunoassay and for confirmatory testing, LC/MS/MS was reported most frequently to analyze the samples. The majority of the population used a single determination for their quantitative analysis reporting procedures. The raw data was used to calculate the grand mean and standard deviation for each item and are supplied to assist the participants and accrediting bodies in their performance evaluations. If a participant did not report raw data but indicated their result was a mean or single determination, it was added to the raw data table for statistical purposes.

Cannabinoid Screening Results - Item 1

TABLE 1A

Were cannabinoids detected?

WebCode	Response
2HH6N7	Yes, Cannabinoids were detected.
3FNXHZ	Yes, Cannabinoids were detected.
8N4D4R	No screening performed
8RPT3Z	No, Cannabinoids were not detected.
9YHKNY	Yes, Cannabinoids were detected.
BZR93V	Yes, Cannabinoids were detected.
C4LPRU	No screening performed
EN84JN	Yes, Cannabinoids were detected.
FMPJ4J	Yes, Cannabinoids were detected.
FQJD2K	No screening performed
JVMH6G	Yes, Cannabinoids were detected.
LDVJRE	Yes, Cannabinoids were detected.
MU2ZLJ	Yes, Cannabinoids were detected.
MYWRUF	Yes, Cannabinoids were detected.
T3WYR9	Yes, Cannabinoids were detected.
TEJTTA	No, Cannabinoids were not detected.
UXQD9B	Yes, Cannabinoids were detected.
VBKJUC	Yes, Cannabinoids were detected.
VE2RHB	Yes, Cannabinoids were detected.
VR6ATB	Yes, Cannabinoids were detected.
VWLHGB	No, Cannabinoids were not detected.
XNFMC8	Yes, Cannabinoids were detected.
YF6LQ8	Yes, Cannabinoids were detected.
YT6JD4	No, Cannabinoids were not detected.
ZA9DK4	Yes, Cannabinoids were detected.

Cannabinoid Screening Response Summary for Item 1	**Participants: 25**

Were cannabinoids detected in this Item?

Response	Total
Yes	18
No	4
No Screening	3
No Response	0

Confirmatory Results - Item 1

TABLE 1B

Item Contents and Preparation Concentration: THC (79 ng/mL)
Carboxy THC (27 ng/mL)
Hydroxy THC (4.2 ng/mL)

What Cannabinoids were detected in Item 1?

WebCode	Analytes Reported	Qualitative Only	Reported Concentration	Uncertainty	Units
2HH6N7	THC		22	± 4	ng/mL
	Carboxy THC		22	± 4	ng/mL
	Hydroxy THC		2.0	± 0.4	ng/mL
3FNXHZ	THC		26		ng/mL
	Carboxy THC	✓			
8N4D4R	THC		15.715		µg/l
	Carboxy THC		22.255		µg/l
9YHKNY	THC		24	±4	ng/mL
	Carboxy THC		25	±5	ng/mL
	Hydroxy THC		2.5	±0.4	ng/mL
BZR93V	THC		25.96	4.93	ng/mL
	Carboxy THC		23.42	4.68	ng/mL
C4LPRU	THC		23.0	2.9	ng/mL
	Carboxy THC		18.8	3.2	ng/mL
	Hydroxy THC		1.7	0.2	ng/mL
EN84JN	THC		>20		ng/mL
FMPJ4J	THC		17.0	3.6	ng/mL
	Carboxy THC	✓			
	Hydroxy THC		1.4	0.3	ng/mL
FQJD2K	THC		20		ug/L
	Carboxy THC		19		ug/L
JVMH6G	THC		25	7	ng/mL
	Carboxy THC		24		ng/mL
LDVJRE	THC	✓			
	Carboxy THC	✓			
MU2ZLJ	THC		26	26.6	%
	Carboxy THC	✓			
	Hydroxy THC		2.2	19.5	%
MYWRUF	THC		23	5	ng/mL
	Carboxy THC	✓			

TABLE 1B: Confirmatory Results - Item 1

What Cannabinoids were detected in Item 1?					
WebCode	**Analytes Reported**	**Qualitative Only**	**Reported Concentration**	**Uncertainty**	**Units**
T3WYR9	THC		17		ng/mL
	Carboxy THC		20		ng/mL
TEJTTA	THC	✓			
UXQD9B	THC		>20		ng/mL
VBKJUC	THC		21	± 4	ng/mL
	Carboxy THC		23	± 4	ng/mL
	Hydroxy THC		2.2	± 0.4	ng/mL
VE2RHB	THC	✓			
	Carboxy THC	✓			
VR6ATB	THC		20.63	3.72	ng/mL
	Carboxy THC		19.18	3.27	ng/mL
	Hydroxy THC		1.69	0.22	ng/mL
VWLHGB	THC		35	5	ng/mL
	Carboxy THC		24	6	ng/mL
	Hydroxy THC		2.6	0.4	ng/mL
XNFMC8	THC		26	5	ng/mL
	Carboxy THC		17	3	ng/mL
	Hydroxy THC		1.8	0.3	ng/mL
YF6LQ8	THC		18	3	ng/mL
	Carboxy THC		16	3	ng/mL
	Hydroxy THC		1.6	0.3	ng/mL
ZA9DK4	THC		15	5	ng/mL
	Carboxy THC		18	6	ng/mL

Confirmatory Response Summary for Item 1	**Participants: 23**
THC:	23 (100.0%)
Carboxy THC:	20 (87.0%)
Hydroxy THC:	10 (43.5%)
No Drugs/Metabolites Detected Utilizing Confirmatory Methods:	0 (0.0%)

Raw Data - Item 1

TABLE 1C

Item 1 Raw Data - THC
Preparation concentration: 79 ng/mL

WebCode	List of Raw Data determinations (ng/mL)			Participant Mean
2HH6N7	22.834			22.830
3FNXHZ	26.050	29.560		27.810
8N4D4R	15.715			15.720
9YHKNY	24.499			24.500
BZR93V	25.960			25.960
C4LPRU	23.060			23.060
EN84JN	24.220	24.270		24.250
FMPJ4J	19.300	17.700	14.000	17.000
FQJD2K	20.530	20.380		20.460
JVMH6G	25.250			25.250
MU2ZLJ	25.620	27.220		26.420
MYWRUF	24.020	23.430		23.730
T3WYR9	17.400			17.400
UXQD9B	26.250	24.280		25.270
VBKJUC	21.884			21.880
VR6ATB	20.630			20.630
VWLHGB	35.490			35.490
XNFMC8	25.570			25.570
YF6LQ8	17.590			17.590
ZA9DK4	15.000			15.000

Statistical Analysis for Item 1 - THC				**Participants with Quantitative Data: 20**
Grand Mean	22.79	Number of Participants Included	20	Number of Participants without Raw Data or Data that was Not Reported in ng/mL 0
Standard Deviation	4.85	Number of Participants Excluded	0	

TABLE 1C: Raw Data - Item 1

Item 1 Raw Data - Carboxy THC
Preparation concentration: 27 ng/mL

WebCode	List of Raw Data determinations (ng/mL)		Participant Mean
2HH6N7	22.973		22.970
8N4D4R	22.555		22.560
9YHKNY	25.183		25.180
BZR93V	23.420		23.420
C4LPRU	18.890		18.890
FQJD2K	19.300	20.290	19.800
JVMH6G	24.570		24.570
T3WYR9	20.160		20.160
VBKJUC	23.148		23.150
VR6ATB	19.180		19.180
VWLHGB	24.330		24.330
XNFMC8	17.020		17.020
YF6LQ8	15.910		15.910
ZA9DK4	18.000		18.000

Statistical Analysis for Item 1 - Carboxy THC					**Participants with Quantitative Data: 14**
Grand Mean	21.08	Number of Participants Included	14	Number of Participants without Raw Data or Data that was Not Reported in ng/mL	0
Standard Deviation	3.02	Number of Participants Excluded	0		

TABLE 1C: Raw Data - Item 1

Item 1 Raw Data - Hydroxy THC
Preparation concentration: 4.2 ng/mL

WebCode	List of Raw Data determinations (ng/mL)			Participant Mean
2HH6N7	2.0870			2.0870
9YHKNY	2.5350			2.5350
C4LPRU	1.7300			1.7300
FMPJ4J	1.3000	1.5000	1.4000	1.4000
MU2ZLJ	2.2300	2.2000		2.2150
VBKJUC	2.2400			2.2400
VR6ATB	1.6900			1.6900
VWLHGB	2.6600			2.6600
XNFMC8	1.8300			1.8300
YF6LQ8	1.6400			1.6400

Statistical Analysis for Item 1 - Hydroxy THC

Participants with Quantitative Data: 10

Grand Mean	2.00	Number of Participants Included	10	Number of Participants without Raw Data or Data that was Not Reported in ng/mL	0
Standard Deviation	0.41	Number of Participants Excluded	0		

Reporting Procedures - Item 1

TABLE 1D - Item 1

Quantitative Reporting Procedures	
WebCode	***If quantitative analysis was performed, the reported concentrations are:***
2HH6N7	A single determination.
3FNXHZ	Lowest value to two significant figures
8N4D4R	The mean of duplicate/several determinations.
9YHKNY	A single determination.
BZR93V	A single determination.
C4LPRU	A single determination.
EN84JN	The mean of duplicate/several determinations.
FMPJ4J	The mean of duplicate/several determinations.
FQJD2K	The mean of duplicate/several determinations.
JVMH6G	A single determination.
MU2ZLJ	The mean of duplicate/several determinations.
MYWRUF	The lowest value truncated to 2 significant figures
T3WYR9	A single determination.
UXQD9B	The mean of duplicate/several determinations.
VBKJUC	A single determination.
VR6ATB	A single determination.
VWLHGB	A single determination.
XNFMC8	A single determination.
YF6LQ8	A single determination.
ZA9DK4	A single determination.

Response Summary for Item 1	**Participants: 20**
A single determination:	12 (60.0%)
The mean of duplicate/several determinations:	6 (30.0%)
Other:	2 (10.0%)

Methods of Analysis - Item 1

TABLE 1E - Item 1

WebCode	Method	Screening	Confirmatory	Quantitation
2HH6N7	Immunoassay LC/MS/MS	✓	✓	✓
3FNXHZ	GC/MS/MS		✓	✓
8N4D4R	LC/MS/MS		✓	✓
8RPT3Z	Immunoassay LC-QTOF-MS GC/MS	✓ ✓ ✓		
9YHKNY	Immunoassay LC/MS/MS	✓	✓	✓
BZR93V	LC/MS/MS GC/MS	✓	✓	✓
C4LPRU	LC/MS/MS		✓	✓
EN84JN	Immunoassay LC/MS/MS	✓	✓	✓
FMPJ4J	LC/MS/MS	✓		✓
FQJD2K	GC/MS/MS		✓	✓
JVMH6G	LC/MS/MS	✓	✓	✓
LDVJRE	Immunoassay GC/MS	✓	✓	
MU2ZLJ	LC/MS/MS	✓	✓	✓
MYWRUF	GC/MS/MS		✓	✓
T3WYR9	Immunoassay GC/MS	✓	✓	✓
TEJTTA	Immunoassay GC/MS	✓ ✓	✓	
UXQD9B	Immunoassay LC/MS/MS	✓	✓	✓
VBKJUC	Immunoassay LC/MS/MS	✓	✓	✓
VE2RHB	GC/MS	✓	✓	
VR6ATB	LC/MS/MS	✓	✓	✓
VWLHGB	Immunoassay LC/MS/MS	✓	✓	✓

TABLE 1E: Methods of Analysis - Item 1

WebCode	Method	Screening	Confirmatory	Quantitation
XNFMC8	LC/MS/MS		✓	✓
	Immunoassay	✓		
YF6LQ8	Immunoassay	✓		
	LC/MS/MS		✓	✓
YT6JD4	Immunoassay	✓		
ZA9DK4	LC/MS/MS	✓	✓	

Response Summary for Item 1 - Methods of Analysis **Participants: 25**

	Screening	Confirmatory	Quantitation
Immunoassay:	13	0	0
GC/MS:	3	5	2
LC/MS:	0	0	0
LC/MS/MS:	6	14	14
Other:	1	3	3

Additional Comments for Item 1

TABLE 1F

WebCode	Item Comments
2HH6N7	ELISA screening panel includes: amphetamine, benzodiazepines, buprenorphine, cannabinoids, carisoprodol, cocaine and metabolites, fentanyl, methadone, methamphetamine, opiates, oxycodone/oxymorphone, phencyclidine, and zolpidem. Following a positive cannabinoid screen, confirmation/quantitation of Delta(9)-tetrahydrocannabinol (THC), 11-nor-9-carboxy-Delta(9)-tetrahydrocannabinol (carboxy-THC), and 11-hydroxy-Delta(9)-tetrahydrocannabinol (11-OH-THC) is performed using THC-D3, carboxy-THC-D3, and 11-OH-THC-D3 as internal standards, respectively. LOD for THC and 11-OH-THC is 0.5 ng/mL; LOD for carboxy-THC is 2.5 ng/mL. LOQ for THC and 11-OH-THC is 1 ng/mL; LOQ for carboxy-THC is 5 ng/mL.
8RPT3Z	Immunoassay cutoff is 25 ng/ml of Carboxy THC.
9YHKNY	Sample screened via ELISA for cannabinoids only. Following a positive cannabinoid screen, confirmation/quantitation of d-9-THC, carboxy-THC, and hydroxy-THC performed using d-9-THC-D3, carboxy-THC-D3, and hydroxy-THC-D3, respectively, as internal standards. LOD for d-9-THC and hydroxy-THC is 0.5 ng/mL; LOQ is 1 ng/mL. LOD for carboxy-THC is 2.5 ng/mL; LOQ is 5 ng/mL.
BZR93V	Screening date of 10/16/2023 with a confirmation date of 10/19/2023.
EN84JN	Upper limit of quantitation is 20 ng/mL; reported as greater than 20 ng/mL. THC confirmation only.
FQJD2K	Hydroxy-THC also detected <LLOQ (<5.0ug/L) Cannabinol also detected, Raw data = 0.83ug/L and 0.88ug/L
JVMH6G	Confirmatory/Quantitation performed on 10/19/2023
LDVJRE	CARBOXY-THC-D3 as Internal Standard
MU2ZLJ	Additional testing date : 2023-10-19
T3WYR9	OH-THC LOD is 2 ng/mL; OH-THC indicated below LOD (1.53 ng/mL)
TEJTTA	1- The sample was diluted with DIW (1:3) before conducting the immunoassay screening.
UXQD9B	Upper limit of quantitation is 20 ng/mL; reported as greater than 20 ng/mL. THC confirmation only.
VBKJUC	The sample was screened via ELISA for cannabinoids only. The following internal standards are used: THC-D3, Carboxy THC-D3, and Hydroxy THC-D3. The limit of detection for THC and Hydroxy THC is 0.5 ng/mL. The limit of detection for Carboxy THC is 2.5 ng/mL. The limit of quantitation for THC and Hydroxy THC is 1 ng/mL. The limit of quantitation for Carboxy THC is 5 ng/mL.
VE2RHB	LoD: 50 ng/mL; internal standard aprobarbital. The lab does neither have a validated method for hydroxy-THC in blood nor a suitable reference material for the afore metioned analyte.
VR6ATB	Analysis Dates: 10/31/23-11/28/23
VWLHGB	Screen: Immunoassay Target Analyte: Carboxy THC, Immunoassay Screening Cut-Off: 25 ng/mL. Confirmation: Internal Standard (THC): THC-D3, Limit-of-Detection (THC): 1 ng/mL. Confirmation: Internal Standard (Hydroxy THC): 11-OH-THC-D3, Limit-of-Detection (Hydroxy THC): 1 ng/mL. Confirmation: Internal Standard (Carboxy THC): THC-COOH-D9, Limit-of-Detection (Carboxy THC): 4 ng/mL
XNFMC8	Analysis by high performance liquid chromatography/tandem mass spectrometry in whole blood for: Cannabinoids confirmation panel: Analyte Quantitative Range (ng/mL) Delta-9-THC 0.5 – 50 11-hydroxy-Delta-9-THC 0.5 – 50 11-nor-9-carboxy-Delta-9-THC 5.0 - 500 Measurement uncertainty is reported at a 95.45% level of confidence for all quantitative blood drug analyses. Analysis by immunoassay screening in whole blood for: Assay Cutoff* (ng/mL) Meth /Amphetamines 20 Meprobamate 100 Barbiturates 50 Methadone 10 Benzodiazepines 10 Opiates 10 Buprenorphine 1 Opioids 10 Cannabinoids 10 Phencyclidine 5 Benzoylecgonine 50 TCA 25 Dextromethorphan 5 Tramadol 5 Fentanyl 1 Zolpidem 10 * Results within 20% of these concentrations are also reported as preliminarily positive. [Participant submitted data in a format that could not be reproduced in this report.]

TABLE 1F: Additional Comments for Item 1

WebCode	Item Comments
ZA9DK4	Internal Standards used: THC-COOH-D3, 11-OH-THC-D3, THC-D3 Lower limit of quantitation: 2 ng/mL Upper Limit of quantitation: 100 ng/mL.

Cannabinoid Screening Results - Item 2

TABLE 2A

Were cannabinoids detected?

WebCode	Response
2HH6N7	Yes, Cannabinoids were detected.
3FNXHZ	Yes, Cannabinoids were detected.
8N4D4R	No screening performed
8RPT3Z	No, Cannabinoids were not detected.
9YHKNY	Yes, Cannabinoids were detected.
BZR93V	Yes, Cannabinoids were detected.
C4LPRU	No screening performed
EN84JN	Yes, Cannabinoids were detected.
FMPJ4J	Yes, Cannabinoids were detected.
FQJD2K	No screening performed
JVMH6G	Yes, Cannabinoids were detected.
LDVJRE	No, Cannabinoids were not detected.
MU2ZLJ	Yes, Cannabinoids were detected.
MYWRUF	Yes, Cannabinoids were detected.
T3WYR9	Yes, Cannabinoids were detected.
TEJTTA	No, Cannabinoids were not detected.
UXQD9B	Yes, Cannabinoids were detected.
VBKJUC	Yes, Cannabinoids were detected.
VE2RHB	No, Cannabinoids were not detected.
VR6ATB	Yes, Cannabinoids were detected.
VWLHGB	No, Cannabinoids were not detected.
XNFMC8	Yes, Cannabinoids were detected.
YF6LQ8	Yes, Cannabinoids were detected.
YT6JD4	No, Cannabinoids were not detected.
ZA9DK4	Yes, Cannabinoids were detected.

Cannabinoid Screening Response Summary for Item 2	**Participants: 25**

Were cannabinoids detected in this Item?

Response	Total
Yes	16
No	6
No Screening	3
No Response	0

Confirmatory Results - Item 2

TABLE 2B

Item Contents and Preparation Concentration: Carboxy THC (24.5 ng/mL)

What Cannabinoids were detected in Item 2?					
WebCode	**Analytes Reported**	**Qualitative Only**	**Reported Concentration**	**Uncertainty**	**Units**
2HH6N7	Carboxy THC		16	± 3	ng/mL
3FNXHZ	Carboxy THC	✓			
8N4D4R	Carboxy THC		20.010		µg/l
9YHKNY	Carboxy THC		19	±4	ng/mL
BZR93V	Carboxy THC		21.67	4.33	ng/mL
C4LPRU	Carboxy THC		15.7	2.6	ng/mL
EN84JN	No Drugs/Metabolites detected utilizing confirmatory methods.				
FMPJ4J	Carboxy THC	✓			
FQJD2K	Carboxy THC		16		ug/L
JVMH6G	Carboxy THC		18		ng/mL
LDVJRE	Carboxy THC	✓			
MU2ZLJ	Carboxy THC	✓			
MYWRUF	Carboxy THC	✓			
T3WYR9	Carboxy THC		<20		ng/mL
TEJTTA	No Drugs/Metabolites detected utilizing confirmatory methods.				
UXQD9B	No Drugs/Metabolites detected utilizing confirmatory methods.				
VBKJUC	Carboxy THC		18	± 4	ng
VE2RHB	No Drugs/Metabolites detected utilizing confirmatory methods.				
VR6ATB	Carboxy THC		15.83	2.70	ng/mL
VWLHGB	Carboxy THC		19	5	ng/mL
XNFMC8	Carboxy THC		14	2	ng/mL
YF6LQ8	Carboxy THC		12	2	ng/mL
ZA9DK4	Carboxy THC		12	4	ng/mL

Confirmatory Response Summary for Item 2		Participants: 23
Carboxy THC:	19 (82.6%)	
No Drugs/Metabolites Detected Utilizing Confirmatory Methods:	4 (17.4%)	

Raw Data - Item 2

TABLE 2C

Item 2 Raw Data - Carboxy THC
Preparation concentration: 24.5 ng/mL

WebCode	List of Raw Data determinations (ng/mL)		Participant Mean
2HH6N7	16.947		16.950
8N4D4R	20.010		20.010
9YHKNY	19.685		19.690
BZR93V	21.670		21.670
C4LPRU	15.710		15.710
FQJD2K	16.580	16.570	16.580
JVMH6G	18.760		18.760
T3WYR9	15.340		15.340
VBKJUC	18.595		18.600
VR6ATB	15.830		15.830
VWLHGB	19.310		19.310
XNFMC8	13.580		13.580
YF6LQ8	12.120		12.120
ZA9DK4	12.000		12.000

Statistical Analysis for Item 2 - Carboxy THC				**Participants with Quantitative Data: 14**
Grand Mean	16.87	Number of Participants Included	14	Number of Participants without Raw Data or Data that was Not Reported in ng/mL 0
Standard Deviation	2.98	Number of Participants Excluded	0	

Reporting Procedures - Item 2

TABLE 2D - Item 2

Quantitative Reporting Procedures	
WebCode	***If quantitative analysis was performed, the reported concentrations are:***
2HH6N7	A single determination.
8N4D4R	The mean of duplicate/several determinations.
9YHKNY	A single determination.
BZR93V	A single determination.
C4LPRU	A single determination.
FQJD2K	The mean of duplicate/several determinations.
JVMH6G	A single determination.
MU2ZLJ	The mean of duplicate/several determinations.
T3WYR9	A single determination.
VBKJUC	A single determination.
VR6ATB	A single determination.
VWLHGB	A single determination.
XNFMC8	A single determination.
YF6LQ8	A single determination.
ZA9DK4	A single determination.

Response Summary for Item 2	**Participants: 15**
A single determination:	12 (80.0%)
The mean of duplicate/several determinations:	3 (20.0%)
Other:	0 (0.0%)

Methods of Analysis - Item 2

TABLE 2E - Item 2

WebCode	Method	Screening	Confirmatory	Quantitation
2HH6N7	Immunoassay LC/MS/MS	✓	✓	✓
3FNXHZ	GC/MS/MS		✓	✓
8N4D4R	LC/MS/MS		✓	✓
8RPT3Z	Immunoassay LC-QTOF-MS	✓ ✓		
9YHKNY	Immunoassay LC/MS/MS	✓	✓	✓
BZR93V	LC/MS/MS GC/MS	✓	✓	✓
C4LPRU	LC/MS/MS		✓	✓
EN84JN	Immunoassay LC/MS/MS	✓	✓	✓
FMPJ4J	LC/MS/MS	✓	✓	
FQJD2K	GC/MS/MS		✓	✓
JVMH6G	LC/MS/MS	✓	✓	✓
LDVJRE	Immunoassay GC/MS	✓	✓	
MU2ZLJ	LC/MS/MS	✓	✓	✓
MYWRUF	GC/MS/MS		✓	
T3WYR9	Immunoassay GC/MS	✓	✓	✓
TEJTTA	Immunoassay GC/MS	✓ ✓	✓	
UXQD9B	Immunoassay LC/MS/MS	✓	✓	✓
VBKJUC	Immunoassay LC/MS/MS	✓	✓	✓
VE2RHB	GC/MS	✓	✓	
VR6ATB	LC/MS/MS	✓	✓	✓
VWLHGB	Immunoassay LC/MS/MS	✓	✓	✓

TABLE 2E: Methods of Analysis - Item 2

WebCode	Method	Screening	Confirmatory	Quantitation
XNFMC8	LC/MS/MS		✓	✓
	Immunoassay	✓		
YF6LQ8	Immunoassay	✓		
	LC/MS/MS		✓	✓
YT6JD4	Immunoassay	✓		
ZA9DK4	LC/MS/MS	✓	✓	

Response Summary for Item 2 - Methods of Analysis			Participants: 25
	Screening	Confirmatory	Quantitation
Immunoassay:	13	0	0
GC/MS:	2	5	2
LC/MS:	0	0	0
LC/MS/MS:	6	15	13
Other:	1	3	2

Additional Comments for Item 2

TABLE 2F

WebCode	Item Comments
2HH6N7	ELISA screening panel includes: amphetamine, benzodiazepines, buprenorphine, cannabinoids, carisoprodol, cocaine and metabolites, fentanyl, methadone, methamphetamine, opiates, oxycodone/oxymorphone, phencyclidine, and zolpidem. Following a positive cannabinoid screen, confirmation/quantitation of Delta(9)-tetrahydrocannabinol (THC), 11-nor-9-carboxy-Delta(9)-tetrahydrocannabinol (carboxy-THC), and 11-hydroxy-Delta(9)-tetrahydrocannabinol (11-OH-THC) is performed using THC-D3, carboxy-THC-D3, and 11-OH-THC-D3 as internal standards, respectively. LOD for THC and 11-OH-THC is 0.5 ng/mL; LOD for carboxy-THC is 2.5 ng/mL. LOQ for THC and 11-OH-THC is 1 ng/mL; LOQ for carboxy-THC is 5 ng/mL.
8RPT3Z	Immunoassay cutoff is 25 ng/ml of Carboxy THC.
9YHKNY	Sample screened via ELISA for cannabinoids only. Following a positive cannabinoid screen, confirmation/quantitation of d-9-THC, carboxy-THC, and hydroxy-THC performed using d-9-THC-D3, carboxy-THC-D3, and hydroxy-THC-D3, respectively, as internal standards. LOD for d-9-THC and hydroxy-THC is 0.5 ng/mL; LOQ is 1 ng/mL. LOD for carboxy-THC is 2.5 ng/mL; LOQ is 5 ng/mL.
BZR93V	Screening date of 10/16/2023 with a confirmation date of 10/19/2023.
EN84JN	THC confirmation only.
JVMH6G	Confirmatory/Quantitation performed on 10/27/2023
LDVJRE	CARBOXY-THC-D3 as Internal Standard
MU2ZLJ	Additional testing date : 2023-10-23
T3WYR9	COOH-THC LOQ is 20 ng/mL
TEJTTA	1- The sample was diluted with DIW (1:3) before conducting the immunoassay screening.
UXQD9B	THC confirmation only.
VBKJUC	The sample was screened via ELISA for cannabinoids only. The following internal standards are used: THC-D3, Carboxy THC-D3, and Hydroxy THC-D3. The limit of detection for THC and Hydroxy THC is 0.5 ng/mL. The limit of detection for Carboxy THC is 2.5 ng/mL. The limit of quantitation for THC and Hydroxy THC is 1 ng/mL. The limit of quantitation for Carboxy THC is 5 ng/mL.
VE2RHB	LoD: 50 ng/mL; internal standard aprobarbital. The lab does neither have a validated method for hydroxy-THC in blood nor a suitable reference material for the afore metioned analyte.
VR6ATB	Analysis Dates: 10/31/23-11/28/23
VWLHGB	Screen: Immunoassay Target Analyte: Carboxy THC, Immunoassay Screening Cut-Off: 25 ng/mL. Confirmation: Internal Standard (THC): THC-D3, Limit-of-Detection (THC): 1 ng/mL. Confirmation: Internal Standard (Hydroxy THC): 11-OH-THC-D3, Limit-of-Detection (Hydroxy THC): 1 ng/mL. Confirmation: Internal Standard (Carboxy THC): THC-COOH-D9, Limit-of-Detection (Carboxy THC): 4 ng/mL
XNFMC8	Analysis by high performance liquid chromatography/tandem mass spectrometry in whole blood for: Cannabinoids confirmation panel: Analyte Quantitative Range (ng/mL) Delta-9-THC 0.5 – 50 11-hydroxy-Delta-9-THC 0.5 – 50 11-nor-9-carboxy-Delta-9-THC 5.0 - 500 Measurement uncertainty is reported at a 95.45% level of confidence for all quantitative blood drug analyses. Analysis by immunoassay screening in whole blood for: Assay Cutoff* (ng/mL) Meth /Amphetamines 20 Meprobamate 100 Barbiturates 50 Methadone 10 Benzodiazepines 10 Opiates 10 Buprenorphine 1 Opioids 10 Cannabinoids 10 Phencyclidine 5 Benzoylecgonine 50 TCA 25 Dextromethorphan 5 Tramadol 5 Fentanyl 1 Zolpidem 10 * Results within 20% of these concentrations are also reported as preliminarily positive. [Participant submitted data in a format that could not be reproduced in this report.]
ZA9DK4	Internal Standards used: THC-COOH-D3, 11-OH-THC-D3, THC-D3 Lower limit of quantitation: 2 ng/mL Upper Limit of quantitation: 100 ng/Ml

Cannabinoid Screening Results - Item 3

TABLE 3A

Were cannabinoids detected?

WebCode	Response
2HH6N7	Yes, Cannabinoids were detected.
3FNXHZ	Yes, Cannabinoids were detected.
8N4D4R	No screening performed
8RPT3Z	Yes, Cannabinoids were detected.
9YHKNY	Yes, Cannabinoids were detected.
BZR93V	Yes, Cannabinoids were detected.
C4LPRU	No screening performed
EN84JN	Yes, Cannabinoids were detected.
FMPJ4J	Yes, Cannabinoids were detected.
FQJD2K	No screening performed
JVMH6G	Yes, Cannabinoids were detected.
LDVJRE	Yes, Cannabinoids were detected.
MU2ZLJ	Yes, Cannabinoids were detected.
MYWRUF	Yes, Cannabinoids were detected.
T3WYR9	Yes, Cannabinoids were detected.
TEJTTA	Yes, Cannabinoids were detected.
UXQD9B	Yes, Cannabinoids were detected.
VBKJUC	Yes, Cannabinoids were detected.
VE2RHB	Yes, Cannabinoids were detected.
VR6ATB	Yes, Cannabinoids were detected.
VWLHGB	Yes, Cannabinoids were detected.
XNFMC8	Yes, Cannabinoids were detected.
YF6LQ8	Yes, Cannabinoids were detected.
YT6JD4	Yes, Cannabinoids were detected.
ZA9DK4	Yes, Cannabinoids were detected.

Cannabinoid Screening Response Summary for Item 3	**Participants: 25**

Were cannabinoids detected in this Item?

Response	Total
Yes	22
No	0
No Screening	3
No Response	0

Confirmatory Results - Item 3

TABLE 3B

Item Contents and Preparation Concentration: THC (29.3 ng/mL)
Carboxy THC (237.9 ng/mL)
Hydroxy THC (17.1 ng/mL)

What Cannabinoids were detected in Item 3?

WebCode	Analytes Reported	Qualitative Only	Reported Concentration	Uncertainty	Units
2HH6N7	THC		16	± 3	ng/mL
	Carboxy THC		0.17	± 0.03	µg/mL
	Hydroxy THC		6	± 1	ng/mL
3FNXHZ	THC		18		ng/mL
	Carboxy THC	✓			
8N4D4R	THC		13.155		µg/l
	Carboxy THC		184.690		µg/l
8RPT3Z	THC		18	4	ng.ml
	Carboxy THC		0.17	0.05	ug/ml
	Hydroxy THC		10	2	ng/ml
9YHKNY	THC		15	±3	ng/mL
	Carboxy THC		0.17	±0.03	µg/mL
	Hydroxy THC		7	±2	ng/mL
BZR93V	THC		18.90	3.59	ng/mL
	Carboxy THC		251.52	50.30	ng/mL
C4LPRU	THC		16.8	2.1	ng/mL
	Carboxy THC		156.1	26.5	ng/mL
	Hydroxy THC		7.8	1.1	ng/mL
EN84JN	THC		16.9	1.8	ng/mL
FMPJ4J	THC		17.3	3.6	ng/mL
	Carboxy THC	✓			
	Hydroxy THC		5.8	1.3	ng/mL
FQJD2K	THC		16		ug/L
	Carboxy THC		182		ug/L
	Hydroxy THC		9.6		ug/L
JVMH6G	THC		16	4	ng/mL
	Carboxy THC		170		ng/mL
LDVJRE	THC	✓			
	Carboxy THC	✓			

TABLE 3B: Confirmatory Results - Item 3

What Cannabinoids were detected in Item 3?					
WebCode	**Analytes Reported**	**Qualitative Only**	**Reported Concentration**	**Uncertainty**	**Units**
MU2ZLJ	THC		15	26.6	%
	Carboxy THC	✓			
	Hydroxy THC		8.3	19.5	%
MYWRUF	THC		16	4	ng/mL
	Carboxy THC	✓			
T3WYR9	THC		11		ng/mL
	Carboxy THC		135		ng/mL
	Hydroxy THC		4.3		ng/mL
TEJTTA	Carboxy THC	✓			
UXQD9B	THC		19.2	2.0	ng/mL
VBKJUC	THC		15	± 3	ng/mL
	Carboxy THC		0.17	± 0.03	µg/mL
	Hydroxy THC		6	± 2	ng/mL
VE2RHB	Carboxy THC	✓			
VR6ATB	THC		15.43	2.78	ng/mL
	Carboxy THC		155.37	26.42	ng/mL
	Hydroxy THC		5.67	0.74	ng/mL
VWLHGB	THC		14	2	ng/mL
	Carboxy THC		190	50	ng/mL
	Hydroxy THC		8.1	1	ng/mL
XNFMC8	THC		13	2	ng/mL
	Carboxy THC		140	22	ng/mL
	Hydroxy THC		6.0	1.0	ng/mL
YF6LQ8	THC		12	2	ng/mL
	Carboxy THC		131	21	ng/mL
	Hydroxy THC		6.0	1.0	ng/mL
YT6JD4	THC	✓			
	Carboxy THC	✓			
	Hydroxy THC	✓			
ZA9DK4	THC		12	4	ng/mL
	Carboxy THC	✓	>100		ng/mL
	Hydroxy THC		6	2	ng/mL

Confirmatory Response Summary for Item 3		Participants: 25
THC:	23	(92.0%)
Carboxy THC:	23	(92.0%)
Hydroxy THC:	15	(60.0%)
No Drugs/Metabolites Detected Utilizing Confirmatory Methods:	0	(0.0%)

Raw Data - Item 3

TABLE 3C

Item 3 Raw Data - THC
Preparation concentration: 29.3 ng/mL

WebCode	List of Raw Data determinations (ng/mL)			Participant Mean
2HH6N7	16.481			16.480
3FNXHZ	19.290	18.270		18.780
8N4D4R	13.155			13.160
8RPT3Z	18.800			18.800
9YHKNY	15.791			15.790
BZR93V	18.900			18.900
C4LPRU	16.880			16.880
EN84JN	17.250	16.550		16.900
FMPJ4J	17.400	17.600	17.000	17.330
FQJD2K	15.750	16.790		16.270
JVMH6G	16.560			16.560
MU2ZLJ	15.340	15.580		15.460
MYWRUF	16.240	16.880		16.560
T3WYR9	11.850			11.850
UXQD9B	18.420	19.960		19.190
VBKJUC	15.434			15.430
VR6ATB	15.430			15.430
VWLHGB	14.990			14.990
XNFMC8	12.770			12.770
YF6LQ8	11.950			11.950
ZA9DK4	12.000			12.000

Statistical Analysis for Item 3 - THC

Participants with Quantitative Data: 21

Grand Mean	15.78	Number of Participants Included	21	Number of Participants without Raw Data or Data that was Not Reported in ng/mL	0
Standard Deviation	2.32	Number of Participants Excluded	0		

TABLE 3C: Raw Data - Item 3

Item 3 Raw Data - Carboxy THC
Preparation concentration: 237.9 ng/mL

WebCode	List of Raw Data determinations (ng/mL)		Participant Mean
2HH6N7	172.62		172.60
8N4D4R	184.69		184.70
8RPT3Z	174.88		174.90
9YHKNY	171.24		171.20
BZR93V	251.52		251.50
C4LPRU	156.17		156.20
FQJD2K	180.63	185.10	182.80
JVMH6G	174.40		174.40
T3WYR9	135.85		135.90
VBKJUC	174.94		174.90
VR6ATB	155.37		155.40
VWLHGB	195.13		195.10
XNFMC8	139.81		139.80
YF6LQ8	131.39		131.40

Statistical Analysis for Item 3 - Carboxy THC

Participants with Quantitative Data: 14

Grand Mean	171.49	Number of Participants Included	14	Number of Participants without Raw Data or Data that was Not Reported in ng/mL	0
Standard Deviation	29.97	Number of Participants Excluded	0		

TABLE 3C: Raw Data - Item 3

Item 3 Raw Data - Hydroxy THC
Preparation concentration: 17.1 ng/mL

WebCode	List of Raw Data determinations (ng/mL)			Participant Mean
2HH6N7	6.1460			6.1460
8RPT3Z	10.730			10.730
9YHKNY	7.4440			7.4440
C4LPRU	7.8600			7.8600
FMPJ4J	5.7000	5.5000	6.3000	5.8330
FQJD2K	9.4200	9.9700		9.6950
MU2ZLJ	7.9300	8.7000		8.3150
T3WYR9	4.3800			4.3800
VBKJUC	6.8760			6.8760
VR6ATB	5.6700			5.6700
VWLHGB	8.1500			8.1500
XNFMC8	5.9700			5.9700
YF6LQ8	5.9600			5.9600
ZA9DK4	6.0000			6.0000

Statistical Analysis for Item 3 - Hydroxy THC				Participants with Quantitative Data: 14
Grand Mean	7.07	Number of Participants Included	14	Number of Participants without Raw Data or Data that was Not Reported in ng/mL 0
Standard Deviation	1.73	Number of Participants Excluded	0	

Reporting Procedures - Item 3

TABLE 3D - Item 3

WebCode	Quantitative Reporting Procedures *If quantitative analysis was performed, the reported concentrations are:*
2HH6N7	A single determination.
3FNXHZ	Lowest value truncated to two significant figures
8N4D4R	The mean of duplicate/several determinations.
8RPT3Z	A single determination.
9YHKNY	A single determination.
BZR93V	A single determination.
C4LPRU	A single determination.
EN84JN	The mean of duplicate/several determinations.
FMPJ4J	The mean of duplicate/several determinations.
FQJD2K	The mean of duplicate/several determinations.
JVMH6G	A single determination.
MU2ZLJ	The mean of duplicate/several determinations.
MYWRUF	The lowest value truncated to two significant figures
T3WYR9	A single determination.
UXQD9B	The mean of duplicate/several determinations.
VBKJUC	A single determination.
VR6ATB	A single determination.
VWLHGB	A single determination.
XNFMC8	A single determination.
YF6LQ8	A single determination.
ZA9DK4	A single determination.

Response Summary for Item 3	Participants: 21
A single determination:	13 (61.9%)
The mean of duplicate/several determinations:	6 (28.6%)
Other:	2 (9.5%)

Methods of Analysis - Item 3

TABLE 3E - Item 3

WebCode	Method	Screening	Confirmatory	Quantitation
2HH6N7	Immunoassay LC/MS/MS	✓	✓	✓
3FNXHZ	GC/MS/MS		✓	✓
8N4D4R	LC/MS/MS		✓	✓
8RPT3Z	Immunoassay LC-QTOF-MS LC/MS/MS	✓ ✓	✓	
9YHKNY	Immunoassay LC/MS/MS	✓	✓	✓
BZR93V	LC/MS/MS GC/MS	✓	✓	✓
C4LPRU	LC/MS/MS		✓	✓
EN84JN	Immunoassay LC/MS/MS	✓	✓	✓
FMPJ4J	LC/MS/MS	✓		✓
FQJD2K	GC/MS/MS		✓	✓
JVMH6G	LC/MS/MS	✓	✓	✓
LDVJRE	Immunoassay GC/MS	✓	✓	
MU2ZLJ	LC/MS/MS	✓	✓	✓
MYWRUF	GC/MS/MS		✓	✓
T3WYR9	Immunoassay GC/MS	✓	✓	✓
TEJTTA	Immunoassay GC/MS	✓ ✓	✓	
UXQD9B	Immunoassay LC/MS/MS	✓	✓	✓
VBKJUC	Immunoassay LC/MS/MS	✓	✓	✓
VE2RHB	GC/MS	✓	✓	
VR6ATB	LC/MS/MS	✓	✓	✓
VWLHGB	Immunoassay LC/MS/MS	✓	✓	✓

TABLE 3E: Methods of Analysis - Item 3

WebCode	Method	Screening	Confirmatory	Quantitation
XNFMC8	LC/MS/MS		✓	✓
	Immunoassay	✓		
YF6LQ8	Immunoassay	✓		
	LC/MS/MS		✓	✓
YT6JD4	Immunoassay	✓		
ZA9DK4	LC/MS/MS	✓	✓	

Response Summary for Item 3 - Methods of Analysis			Participants: 25
	Screening	Confirmatory	Quantitation
Immunoassay:	13	0	0
GC/MS:	2	5	2
LC/MS:	0	0	0
LC/MS/MS:	6	15	14
Other:	1	3	3

Additional Comments for Item 3

TABLE 3F

WebCode	Item Comments
2HH6N7	ELISA screening panel includes: amphetamine, benzodiazepines, buprenorphine, cannabinoids, carisoprodol, cocaine and metabolites, fentanyl, methadone, methamphetamine, opiates, oxycodone/oxymorphone, phencyclidine, and zolpidem. Following a positive cannabinoid screen, confirmation/quantitation of Delta(9)-tetrahydrocannabinol (THC), 11-nor-9-carboxy-Delta(9)-tetrahydrocannabinol (carboxy-THC), and 11-hydroxy-Delta(9)-tetrahydrocannabinol (11-OH-THC) is performed using THC-D3, carboxy-THC-D3, and 11-OH-THC-D3 as internal standards, respectively. LOD for THC and 11-OH-THC is 0.5 ng/mL; LOD for carboxy-THC is 2.5 ng/mL. LOQ for THC and 11-OH-THC is 1 ng/mL; LOQ for carboxy-THC is 5 ng/mL.
3FNXHZ	Additional analysis: Re-extraction of Item 3 on 11/17/23
8RPT3Z	Immunoassay cutoff is 25 ng/ml of Carboxy THC.
9YHKNY	Sample screened via ELISA for cannabinoids only. Following a positive cannabinoid screen, confirmation/quantitation of d-9-THC, carboxy-THC, and hydroxy-THC performed using d-9-THC-D3, carboxy-THC-D3, and hydroxy-THC-D3, respectively, as internal standards. LOD for d-9-THC and hydroxy-THC is 0.5 ng/mL; LOQ is 1 ng/mL. LOD for carboxy-THC is 2.5 ng/mL; LOQ is 5 ng/mL.
BZR93V	Screening date of 10/16/2023 with a confirmation date of 10/19/2023.
EN84JN	THC confirmation only.
FQJD2K	Cannabinol also detected <LLOQ (<0.5ug/L)
JVMH6G	Confirmatory/Quantitation performed on 10/19/2023
LDVJRE	CARBOXY-THC-D3 as Internal Standard
TEJTTA	1- The sample was diluted with DIW (1:3) before conducting the immunoassay screening.
UXQD9B	THC confirmation only.
VBKJUC	The sample was screened via ELISA for cannabinoids only. The following internal standards are used: THC-D3, Carboxy THC-D3, and Hydroxy THC-D3. The limit of detection for THC and Hydroxy THC is 0.5 ng/mL. The limit of detection for Carboxy THC is 2.5 ng/mL. The limit of quantitation for THC and Hydroxy THC is 1 ng/mL. The limit of quantitation for Carboxy THC is 5 ng/mL.
VE2RHB	LoD: 50 ng/mL; internal standard aprobarbital. The lab does neither have a validated method for hydroxy-THC in blood nor a suitable reference material for the afore metioned analyte.
VR6ATB	Analysis Dates: 10/31/23-11/28/23
VWLHGB	Screen: Immunoassay Target Analyte: Carboxy THC, Immunoassay Screening Cut-Off: 25 ng/mL. Confirmation: Internal Standard (THC): THC-D3, Limit-of-Detection (THC): 1 ng/mL. Confirmation: Internal Standard (Hydroxy THC): 11-OH-THC-D3, Limit-of-Detection (Hydroxy THC): 1 ng/mL. Confirmation: Internal Standard (Carboxy THC): THC-COOH-D9, Limit-of-Detection (Carboxy THC): 4 ng/mL
XNFMC8	Analysis by high performance liquid chromatography/tandem mass spectrometry in whole blood for: Cannabinoids confirmation panel: Analyte Quantitative Range (ng/mL) Delta-9-THC 0.5 – 50 11-hydroxy-Delta-9-THC 0.5 – 50 11-nor-9-carboxy-Delta-9-THC 5.0 - 500 Measurement uncertainty is reported at a 95.45% level of confidence for all quantitative blood drug analyses. Analysis by immunoassay screening in whole blood for: Assay Cutoff* (ng/mL) Meth /Amphetamines 20 Meprobamate 100 Barbiturates 50 Methadone 10 Benzodiazepines 10 Opiates 10 Buprenorphine 1 Opioids 10 Cannabinoids 10 Phencyclidine 5 Benzoylecgonine 50 TCA 25 Dextromethorphan 5 Tramadol 5 Fentanyl 1 Zolpidem 10 * Results within 20% of these concentrations are also reported as preliminarily positive. [Participant submitted data in a format that could not be reproduced in this report.]
YT6JD4	Confirmatory test was done by GC/MS/MS.

TABLE 3F: Additional Comments for Item 3

WebCode	Item Comments
ZA9DK4	Internal Standards used: THC-COOH-D3, 11-OH-THC-D3, THC-D3 Lower limit of quantitation: 2 ng/mL Upper Limit of quantitation: 100 ng/mL For this sample, THC-COOH was greater than 100ng/mL. Our calibration curve has the highest level as 100 ng/mL. Per common lab practice, we do not dilute samples and will report THC-COOH as >100 ng/mL.

Additional Comments

TABLE 4

WebCode	Additional Comments
C4LPRU	In all instances of THC (Tetrahydrocannabinol) being reported throughout this entry, our laboratory would denote that as d-9-THC (delta-9-tetrahydrocannabinol).
VE2RHB	LoD: 50 ng/mL; internal standard aprobarbital. The lab does neither have a validated method for hydroxy-THC in blood nor a suitable reference material for the afore metioned analyte.
VWLHGB	Item #1 and Item #2 were below the screening cut-off (25 ng/mL for carboxy THC). Item #1 and Item #2 confirmation results were above the confirmation limit of detection (4 ng/mL).
YF6LQ8	Cannabinoids confirmation panel: Analyte Quantitative Range (ng/mL) Delta-9-THC 0.5 – 50 11-hydroxy-Delta-9-THC 0.5 – 50 11-nor-9-carboxy-Delta-9-THC 5.0 – 500 Measurement uncertainty is reported at a 95.45% level of confidence for all quantitative blood drug analyses. Analysis by immunoassay screening in whole blood for: Assay Cutoff* (ng/mL) Meth /Amphetamines 20 Barbiturates 50 Benzodiazepines 10 Buprenorphine 1 Cannabinoids 10 Benzoylecgonine 50 Dextromethorphan 5 Fentanyl 1 Meprobamate 100 Methadone 10 Opiates 10 Opioids 10 Phencyclidine 5 TCA 25 Tramadol 5 Zolpidem 10 * Results within 20% of these concentrations are also reported as preliminarily positive. [Participant submitted data in a format that could not be reproduced in this report.]

-End of Report-
(Appendix may follow)

Collaborative Testing Services ~ Forensic Testing Program

Test No. 23-5662: Blood Cannabinoids Analysis

DATA MUST BE SUBMITTED BY **Dec. 04, 2023, 11:59 p.m. EST** TO BE INCLUDED IN THE REPORT

Participant Code: U1234J WebCode: 27T7W4

Scenario:

Investigators have submitted three tubes of blood from separate cases to be examined; each was taken from a person suspected of being under the influence of cannabinoids. Using your laboratory's procedures, analyze each tube and report the concentration of any cannabinoid(s) present.

-Samples may contain methanol and ethanol as artifacts from production.

Items Submitted (Sample Pack BCAN):

Item 1: One vial of blood from Case 1
Item 2: One vial of blood from Case 2
Item 3: One vial of blood from Case 3

Screening Results for Item 1:

1-1). Were cannabinoids detected for Item 1?

- ○ No screening was performed for this item.
- ○ No, cannabinoids were not detected.
- ○ Yes, cannabinoids were detected.

Confirmatory Results and Quantitative Analysis for Item 1:

1-2). Was confirmatory analysis performed for this item? ○ Yes ○ No

1-3). What cannabinoid(s) were detected in Item 1? If quantitative determinations were performed, please record raw data in the provided spaces in ng/mL.

☐ No drugs/metabolites detected utilizing confirmatory methods.

Analyte	Qualitative Only?	Reported Concentration	Uncertainty	Units
	☐			( )

Raw Data (ng/mL):

1-4). If quantitative analysis was performed, are the reported concentrations above

- ○ A single determination?
- ○ The mean of duplicate / several determinations?
- ○ Other? (Specify):

1-5). For quantitative analysis, select the date analysis was performed (if analyzed across multiple days, report the first analysis date here and include additional dates in the Additional Comments section below).

Methods of Analysis for Item 1:

1-6). Please select the analysis method(s) performed and check whether it was used for screening, confirmatory testing, and/or quantitation.

Please list each method only once.

Method Used	Screening	Confirmatory	Quantitation
	☐	☐	☐

Additional Comments for Item 1:

1-7). Please include any relevant information such as internal standard(s) used, limits of detection, etc.

Please note: *Any additional formatting applied in the free form space below will not transfer to the Summary Report and may cause your information to be illegible. This includes additional spacing and returns that present your responses in lists and tabular formats.*

Screening Results for Item 2:

2-1). Were cannabinoids detected for Item 2?

- ○ No screening was performed for this item.
- ○ No, cannabinoids were not detected.
- ○ Yes, cannabinoids were detected.

Confirmatory Results and Quantitative Analysis for Item 2:

2-2). Was confirmatory analysis performed for this item? ○ Yes ○ No

2-3). What cannabinoid(s) were detected in Item 2? If quantitative determinations were performed, please record raw data in the provided spaces in ng/mL.

☐ No drugs/metabolites detected utilizing confirmatory methods.

Analyte	Qualitative Only?	Reported Concentration	Uncertainty	Units
	☐			( )

Raw Data (ng/mL):

2-4). If quantitative analysis was performed, are the reported concentrations above

- ○ A single determination?
- ○ The mean of duplicate / several determinations?
- ○ Other? (Specify):

2-5). For quantitative analysis, select the date analysis was performed (if analyzed across multiple days, report the first analysis date here and include additional dates in the Additional Comments section below).

Methods of Analysis for Item 2:

2-6). Please select the analysis method(s) performed and check whether it was used for screening, confirmatory testing, and/or quantitation.

Please list each method only once.

Method Used	Screening	Confirmatory	Quantitation
	☐	☐	☐

Additional Comments for Item 2:

2-7). Please include any relevant information such as internal standard(s) used, limits of detection, etc.

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Screening Results for Item 3:

3-1). Were cannabinoids detected for Item 3?

- ○ No screening was performed for this item.
- ○ No, cannabinoids were not detected.
- ○ Yes, cannabinoids were detected.

Confirmatory Results and Quantitative Analysis for Item 3:

3-2). Was confirmatory analysis performed for this item? ○ Yes ○ No

3-3). What cannabinoid(s) were detected in Item 3? If quantitative determinations were performed, please record raw data in the provided spaces in ng/mL.

☐ No drugs/metabolites detected utilizing confirmatory methods.

Analyte	Qualitative Only?	Reported Concentration	Uncertainty	Units
	☐			( )

Raw Data (ng/mL):

3-4). If quantitative analysis was performed, are the reported concentrations above

- ○ A single determination?
- ○ The mean of duplicate / several determinations?
- ○ Other? (Specify):

3-5). For quantitative analysis, select the date analysis was performed (if analyzed across multiple days, report the first analysis date here and include additional dates in the Additional Comments section below).

Methods of Analysis for Item 3:

3-6). Please select the analysis method(s) performed and check whether it was used for screening, confirmatory testing, and/or quantitation.

Please list each method only once.

Method Used	Screening	Confirmatory	Quantitation
	☐	☐	☐

Additional Comments for Item 3:

3-7). Please include any relevant information such as internal standard(s) used, limits of detection, etc.

Please note: *Any additional formatting applied in the free form space below will not transfer to the Summary Report and may cause your information to be illegible. This includes additional spacing and returns that present your responses in lists and tabular formats.*

Date Samples Received:

Additional Comments on Test

Please note: *Any additional formatting applied in the free form space below will not transfer to the Summary Report and may cause your information to be illegible. This includes additional spacing and returns that present your responses in lists and tabular formats.*

RELEASE OF DATA TO ACCREDITATION BODIES

The Accreditation Release is accessed by pressing the "Continue to Final Submission" button online and can be completed at any time prior to submission to CTS.

CTS submits external proficiency test data directly to ASCLD/LAB, ANAB, and/or A2LA. Please select one of the following statements to ensure your data is handled appropriately.

○ This participant's data is intended for submission to ASCLD/LAB, ANAB, and/or A2LA. (Accreditation Release section below must be completed.)
○ This participant's data is **not** intended for submission to ASCLD/LAB, ANAB, and/or A2LA.

Have the laboratory's designated individual complete the following steps
only if your laboratory is accredited in this testing/calibration discipline
by one or more of the following Accreditation Bodies.

Step 1: Provide the applicable Accreditation Certificate Number(s) for your laboratory

ANAB Certificate No.
(Include ASCLD/LAB Certificate here)

A2LA Certificate No.

Step 2: Complete the Laboratory Identifying Information in its entirety

Authorized Contact Person and Title

Laboratory Name

Location (City/State)