Idaho State Police Forensic Services Validation Form

Section 1: Initial Validation Approval

Validation Title: Screening of Suspected Overdose Samples with Randox MultiSTAT Analyzer

Analytical Method(s): Not yet in analytical methods. Will be added into next revision as AM #31

Requestor/Discipline: Celena Shrum/Toxicology

Primary Staff Involved (list vendor if validation is external): John Garner, Melissa (Nikka) Bradley, and Galina (Gala) Giso

Resources/Materials Needed: Analyzer, sample kits, UPS, microcentrifuge, pipettes, tips, microcentrifuge tubes, gloves.

Safety Considerations: **Note: All general safety precautions outlined in the Safety Manual should be followed for this method.**

Radioactive hazards

None.

Microbiological hazards

Follow universal and general laboratory precautions. Because of the possibility of being exposed to various microbiological hazards, appropriate measures should be taken to avoid any direct contact with the blood specimens. Follow universal precautions. Gloves, lab coats, and safety glasses must be worn while handling all human blood products. A Hepatitis B vaccination series is recommended for health care and laboratory workers who are exposed to human fluids and tissues.

Mechanical hazards

There are only minimal mechanical hazards when performing this procedure using standard safety practices. Analysts/technicians should read and follow the manufacturer's information regarding safe operation of the equipment. Generally, mechanical and electronic maintenance and repair should be performed only by qualified technicians.

Protective equipment

Standard safety precautions should be utilized when performing this procedure. These precautions may include use of lab coat, safety glasses, durable gloves, and a chemical or biological fume

hood. Refer to the laboratory safety manual for details related to specific activities, reagents, or agents.

Personal hygiene

Follow universal and general laboratory precautions. Care should be taken in handling any biological specimen. Routine use of gloves and proper hand washing should be practiced. Refer to the laboratory safety manual for details related to specific activities, reagents, or agents.

Disposal of wastes

Waste materials must be disposed of in compliance with laboratory, Federal, State, and Local regulations. Solvents and reagent waste should always be put in an appropriate container clearly marked for waste products. Chemical waste is disposed by an outside contractor, as needed. All disposable items that come in direct contact with the blood specimens are to be placed in a biohazard autoclave bag.

Technical Justification/Benefit of Validation: This screening method will allow ISPFS to quickly screen coroner samples and be able to report back to the coroner(s) the possibility of overdose.

Validation Proposal and References (add information here or attach files): The Evidence MultiSTAT analyser is an immunoanalyser which performs the screening of drugs of abuse in human samples including post-mortem blood. The Idaho State Police forensic laboratory in Meridian performed a validation of the Randox Evidence Multi-Stat instrument (serial number: 052-23-0383) for the purposes of screening post-mortem samples obtained from coroners. Randox Drugs of Abuse Blood Assays were used for the validation

Suitability and Performance Requirements/Criteria (list the parameters you are testing and what results expected/needed to consider the validation successful): The following samples will be run a minimum of 5 times (on at least 5 different days):

- A negative (blank blood)
- A positive control that is 2X the cutoff
- A negative control that is 50% of the cutoff
- 2 case samples (aliquots will be obtained from previous batches)

The parameters used to assess the limit of detection will be those defined in the kits (listed below):

Assay	Cut Off
Fentanyl	1 ng/ml
AB-PINACA	2 ng/ml
ETG	500 ng/ml
Methamphetamine	50 ng/ml
Barbiturates	50 ng/ml
Benzodiazepines	20 ng/ml
AB-CHMINACA	5 ng/ml
Methadone	10 ng/ml
Opiate	80 ng/ml
Phencyclidine	5 ng/ml
BZG/Cocaine	25 ng/ml
Oxycodone	10 ng/ml
Tramadol	5 ng/ml
Cannabinoids (THC)	10 ng/ml
TCA	60 ng/ml
Amphetamine	50 ng/ml
Buprenorphine	2 ng/ml
6-MAM	10 ng/ml
alpha-PVP	5 ng/ml
Pregabalin	1000 ng/ml

The analysts that participate in the validation will not be required to do any further training, competency testing or mock court for this method and will be considered as being ready to run casework for this analysis.

The discipline lead will evaluate the case comparison samples. The results shall be consistent with the scope of the screening method, based on cross reactivities and the cutoffs or a reasonable explanation for the discrepancy should be noted.

The proposed method is as follows:

Drug Screening Using Randox Evidence MultiSTAT

1.0 Background/References

1.1 Background

The Randox Evidence MultiSTAT analyzer is an automated analyzer that utilizes Biochip Array Technology (BAT). Competitive chemiluminescent immunoassays are used for the Biochip Arrays. A light signal is generated and detected by the instrument using digital imaging technology and then compared to that from a calibration curve to determine if an analyte is present in the sample at or above the cutoff concentration. The results reported are purely qualitative.

1.2 References

1.2.1 Randox Evidence MultiSTAT User Manual (August 2019)

1.2.2 Randox Evidence MultiSTAT Drugs of Abuse Array Blood Product Insert

Scope

2.1 This Biochip Array Technology is applied for the qualitative screening for drugs in blood specimens. The outcome of the assay is intended as only a preliminary analytical test result. The presence of a particular drug compound must be verified through analysis with a confirmatory instrument such as a liquid chromatograph equipped with a mass selective detector.

As indicated in the table below, each assay in use has an established administrative threshold or cutoff. For this reason, a negative result does not indicate that no drug is present, only that the concentration is less than the administrative cutoff. For this reason, there may be situations where confirmation of an analyte may be pursued even if a negative result is indicated for the compound or a class of compounds in question.

2.2

Assay	Cutoff
6-MAM	10 ng/mL
AB-CHMINACA	5 ng/mL
AB-PINACA	2 ng/mL
Alpha-PVP	5 ng/mL
Amphetamine	50 ng/mL
Barbiturates	50 ng/mL
Benzodiazepines	20 ng/mL
BZE/Cocaine	25ng/mL
Buprenorphine	2 ng/mL
Cannabinoids	10 ng/mL
Ethylglucuronide (ETG)	500 ng/mL
Fentanyl	1 ng/mL
Methadone	10 ng/mL
Methamphetamine	50 ng/mL
Pregabalin	1000 ng/mL
Opiate	80 ng/mL
Oxycodone	10 ng/mL
Phencyclidine	5 ng/mL
Tramadol	5 ng/mL
Tricyclic Antidepressant (TCA)	60 ng/mL

Equipment/Reagents

3.1 Equipment

3.1.1 Sample Preparation Supplies

3.1.1.1 Air-displacement pipettes and appropriate tips.

3.1.1.2 Microcentrifuge

3.1.1.3 Microcentrifuge tubes

3.1.3 Randox Evidence MultiSTAT Analyzer

3.2 Reagents

3.2.1 Randox Evidence MultiSTAT Drugs of Abuse Array- Blood (Remember to check expiration date prior to use.)

3.2.1.1 Assay Kits:

- Blood Test Cartridges
- Blood Cutoff
- Blood Positive Control
- Blood Sample Diluent
- Reconstitution Buffer

- Sample Droppers

3.2.2 Processing of New Assay Supplies

3.2.2.1 When a new kit is opened, check the expiration date prior to opening to ensure the kit is not expired, then proceed with the Batch Update.

3.2.2.2 Set Up the Batch Update for the New Kit

3.2.2.2.1 Insert the USB to the USB port located on the bottom right-hand side of the analyzer.

3.2.2.2.2 Select the import data button on the screen.

3.2.2.2.3 Select the batch update then select OK.

3.2.2.2.4 The batch update will now be complete.

3.2.2.2.5 For each assay kit, an initial Batch QC must be run on the analyzer prior to running case samples. This will consist of running the provided Cutoff and positive control material. The Batch QC is good for 30 days. The Batch QC should be repeated at 30-day intervals (if the kit is not used up within the 30 days). If a Batch QC fails, the sample should be run again. If it fails again, the discipline lead should be contacted to determine how to proceed.

3.2.2.3 Prepare the Cutoff Reagent

3.2.2.3.1 Gently tap the Cutoff vial on the bench to ensure that all material moves to the bottom.

3.2.2.3.2 Carefully lift (do not remove) the rubber stopper, avoiding any loss of material.

3.2.2.3.3 Pipette 1mL of Reconstitution Buffer to the vial and lower the rubber stopper.

3.2.2.3.4 Wait 2 minutes.

3.2.2.3.5 Gently swirl the vial and invert 3 times to ensure that all of the material is dissolved.

3.2.2.3.6 Let sit for at least 30 minutes (out of bright light) before using.

3.2.2.3.7 Remove and discard the rubber stopper then write the date of reconstitution on the bottle or cap.

3.2.2.3.8 Once reconstituted, the cutoff material is stable for 14 days when stored at 2-8 degrees Celsius. The vial should be stored upright.

3.2.2.4 Prepare the Positive Control

3.2.2.4.1 Gently tap the Cutoff vial on the bench to ensure that all material moves to the bottom.

3.2.2.4.2 Carefully lift (do not remove) the rubber stopper, avoiding any loss of material.

3.2.2.4.3 Pipette 1mL of Reconstitution Buffer to the vial and lower the rubber stopper.

3.2.2.4.4 Wait 2 minutes.

3.2.2.4.5 Gently swirl the vial and invert 3 times to ensure that all of the material is dissolved.

3.2.2.4.6 Let sit for at least 30 minutes (out of bright light) before using.

3.2.2.4.7 Remove and discard the rubber stopper then write the date of reconstitution on the bottle or cap.

3.2.2.4.8 Once reconstituted, the cutoff material is stable for 14 days when stored at 2-8 degrees Celsius. The vial should be stored upright.

3.2.2.5 Prepare the Blood Case Samples

3.2.2.5.1 Place blood tubes on rocker and allow them to reach ambient temperature before being analyzed.

Procedure

4.1 Remove cartridges (only the ones you will be using that day), Cutoff Reagent, and Positive Control (if applicable) from the box. Let sit for at least 30 minutes before using. Do not open the test cartridge bag until immediately prior to using.

4.2 Prepare Case Sample (Note: samples should be analyzed immediately following preparation)

4.2.1 Pipette 150 µl of sample blood into a labeled microcentrifuge tube containing 450 µl of sample diluent. Use the pipette to draw liquid up and down to mix the sample and the diluent.

4.2.2 Centrifuge at 13,000rpm for 10 minutes. This step may be repeated if the sample is particularly thick and does not appear to separate after the initial spin step.

4.3 Perform the initial Batch QC (if this has not yet been done or if the last Batch QC was longer than 30 days prior). The batch QC is done the same as the samples, but it is done using the positive control.

4.4 Eject the drawers and place the tip cartridge into the appropriate spot. Push it in gently until it clicks.

4.5 Remove the cartridge from the bag and pierce the foil covering the left well of the cartridge with a pipette tip.

4.6 Pipette 200 µl of cutoff into the left well.

4.7 Pipette 200 µl of sample (or positive control if doing a Batch QC) into the right well. When removing sample from microcentrifuge tube, make sure to draw the liquid from the top of the sample.

4.8 Insert the cartridge into the drawer in the appropriate spot and close the drawer (the cartridge will click when it is in properly). Close the front cover.

4.9 Follow the prompts on the screen to start the testing. It should take approximately 25 minutes.

4.10 When the testing is complete, discard the tip and test cartridge in a biohazard container. Power down the instrument when not in use or at the end of the day.

4.11 Analysis Documentation

4.11.1 The results (paper or electronic) for each case sample will be included with the analyst's notes. Positive or negative results for each assay will be recorded in the ILIMS system and will appear on the reports.

4.11.2 The positive control results (paper or electronic) for the initial Batch QC (and subsequent Batch QCs if done) will be stored centrally in the lab in which they were performed or stored on a network drive.

4.11.3 The data from the run will be stored electronically, and if it is on a computer, will be backed up at least every two months.

4.12 Limitation of method and reporting results

4.12.1 In addition to listing the results of the assays (positive or negative), the reports shall have a statement explaining that the results reported are from a preliminary screen; the screen results are merely an indication of drugs that may be present in the sample and the weight or confidence in screening results cannot be given the same as a confirmatory test.

Discipline Approval to Proceed

Discipline Lead/Signature: Celena Shrum
Title/Discipline: Toxicology Discipline Lead
Date: 6/21/2023

Quality Approval to Proceed

Quality Approver/Signature: Tina Mattox
Title: Lab Improvement Manager
Date: 6/21/2023

Section 2: Progress Reports

(Optional Section: Document any intermediate progress, obstacles, changes in the plan, timeframe, etc)

A few minor changes in the proposed method were made during the validation process. Per the Randox scientist, the samples do not need to be spun down prior to adding them to the diluent and spinning, so that step was removed. We were also told that to prolong the life of the instrument, it should be shut down when not in use, so that was added to the method as well.

Section 3: Completed Validation Approval

Validation Executive Summary: (add information here or attach files)

The executive summary is included at the end.

Validation Write-Up: (add information here or attach files)

The runs were done by John Garner, Melissa (Nikka) Bradley, and Galina (Gala) Giso from 6/29/2023-7/6/2023.

All the data was provided to and analyzed by Celena Shrum (Toxicology Discipline Lead). The results of all the controls (negative blood, positive control, negative control)

were consistent with the scope of the screening method, based on cross reactivities and the cutoffs. The full list of results is included at the end.

There were some differences noted with the case comparison samples. One sample that had previously been test had methamphetamine confirmed at ~128ng/mL but did not screen positive for methamphetamine using the Randox analyzer. Most of the samples we receive that are positive for methamphetamine are believed to be the illicit (+/-) form of the drug. The assay is calibrated again the S(+)-methamphetamine and has 100% cross-reactivity for it. The cross-reactivity for the (+/-) form of the drug is 41.7%, and the expected concentration that would produce a positive result is 120ng/mL. Considering the uncertainty associated with the concentration of methamphetamine in our confirmation method (+/- 27%), I would expect that any sample that has methamphetamine confirmed with our methods over 160ng/mL to screen positive using the Randox MultiSTAT Analyzer, if it is strictly in the +/- form. For DUI cases, this number would not be sufficient, however, as this instrument is being used to screen suspected overdose samples, and the concentrations associated with methamphetamine overdoses are much larger than this, this increased cutoff for methamphetamine is appropriate. No case comparison samples were run that had amphetamine at a concentration that would be expected to screen positive on the Randox instrument. However, since that assay is also calibrated against the S(+) form and we would expect to see the (+/-) form for most cases, it is safe to assume that a concentration higher than the listed 50ng/mL cutoff would be required for the sample to screen positive on the Randox instrument.

There was a case comparison sample that was analyzed and screened positive for cannabinoids. The sample showed a response of ~3.1ng/mL for carboxy-THC with the LC/MS/MS screen method. The cutoff for the Randox method is 10ng/mL so it was not apparent why the sample screened positive at that level but since we had detected the carboxy-THC in our testing, and since the assay does react with other cannabinoids, we did not consider this a false positive.

Suitability and Performance Assessment (provide assessment of how the validation met the requirements and criteria set forth in Section 1): The results of all the controls (negative blood, positive control, negative control) were consistent with the scope of the screening method, based on cross reactivities and the cutoffs. Discrepancies between expected results and obtained results for case samples were explained and/or addressed. As such, all the drugs included in the panel/the instrument is approved to be used for suspected overdose cases.

Uncertainty of Measurement (address any UM considerations based on the completed validation): N/A

Competency (new or additional competency needed upon completion?): The analysts that participate in the validation will not be required to do any further training, competency testing or mock court for this method and will be considered as being ready to run casework for this analysis.

Discipline Lead Approval

Discipline Leader/Signature: Celena Shrum 
Title: Toxicology Discipline Lead
Date: 07/20/2023

Quality Approval

Quality Approver/Signature: Tina Mattox 
Title: Lab Improvement Manager
Date: 7/20/2023

EXECUTIVE SUMMARY

Screening Suspected Overdose Blood Samples with Randox MultiSTAT Analyzer

Overview

Idaho State Police Forensic Services (ISPFS) established and validated a method for the screening of suspected overdose samples using the Randox MultiSTAT Analyzer. This method is a preliminary screen, the screen results are an indication of drugs that may be present in a sample. The weight or confidence in screening results cannot be given the same as a confirmatory test. This is not a quantitative method and quantitative results cannot be reported from this method. If these results are reported it must be clear on the report that it is an indicator the drug is present in the sample, not a confirmation of the drug in the sample.

Results/Conclusions

Ten blood samples that were previously analyzed using the current ISPFS LC/MS/MS screening and confirmation methods were analyzed with the Randox MultiSTAT Analyzer. In addition to the case comparison samples, positive controls, negative controls, and negative blood samples were also analyzed.

The results of all the controls were consistent with the scope of the screening method, based on cross reactivities and the cutoffs.

There were some differences noted with the case comparison samples. One sample that had previously been test had methamphetamine confirmed at ~128ng/mL but did not screen positive for methamphetamine using the Randox analyzer. Most of the samples we receive that are positive for methamphetamine are believed to be the illicit (+/-) form of the drug. The assay is calibrated again the S(+)-methamphetamine and has 100% cross-reactivity for it. The cross-reactivity for the (+/-) form of the drug is 41.7%, and the expected concentration that would produce a positive result is 120ng/mL. Considering the uncertainty associated with the concentration of methamphetamine in our confirmation method (+/- 27%), I would expect that any sample that has methamphetamine confirmed with our methods over 160ng/mL to screen positive using the Randox MultiSTAT Analyzer, if it is strictly in the +/- form. For DUI cases, this number would not be sufficient, however, as this instrument is being used to screen suspected overdose samples, and the concentrations associated with methamphetamine overdoses are much larger than this, this increased cutoff for methamphetamine is appropriate. No case comparison samples were run that had amphetamine at a concentration that would be expected to screen positive on the Randox instrument. However, since that assay is also calibrated against the S(+) form and we would expect

to see the (+/-) form for most cases, it is safe to assume that a concentration higher than the listed 50ng/mL cutoff would be required for the sample to screen positive on the Randox instrument.

There was a case comparison sample that was analyzed and screened positive for cannabinoids. The sample showed a response of ~3.1ng/mL for carboxy-THC with the LC/MS/MS screen method. The cutoff for the Randox method is 10ng/mL so it was not apparent why the sample screened positive at that level but since we had detected the carboxy-THC in our testing, and since the assay does react with other cannabinoids, we did not consider this a false positive.

Results of Case Comparison Samples

Run Date	Analyst	Sample Name	Analyte	Result	Expected Result	Notes
6/29/2023	GG	P2023-1391-1	FENTANYL	POS	POS	
			ABPINACA	Neg	Neg	
			ETHYLGLUCURONIDE	Neg	Neg	
			METHAMPHETAMINE	Neg	POS*	
			BARBITURATE	Neg	Neg	
			BENZODIAZEPINE	Neg	Neg	
			ABCHMINACA	Neg	Neg	
			METHADONE	Neg	Neg	
			OPIATE	Neg	Neg	
			PCP	Neg	Neg	
			BZG	Neg	Neg	
			OXYCODONE	Neg	Neg	
			TRAMADOL	Neg	Neg	
			THC	Neg	Neg	
			TRYCYCLICANTIDEPRESSANTS	Neg	Neg	
			AMPHETAMINE	Neg	Neg	Amphetamine concentration is ~12ng/mL, so it was not expected to screen as positive.
			BUPRENORPHINE	Neg	Neg	
			6MAM	Neg	Neg	
			PREGABALIN	Neg	Neg	
			ALPHAPVP	Neg	Neg	

*Methamphetamine concentration is ~128ng/mL. Cross reactivity for +/- methamphetamine is 41.7%, and gives a positive response at 120ng/mL.
However, with uncertainty of measurment for the concentration of the sample in the confirmation factored (94.72-161.58 ng/mL),
the actual sample concentration may have fallen below the 120ng/mL required to produce a positive result.

Run Date	Analyst	Sample Name	Analyte	Result	Expected Result	Notes
6/29/2023	GG	P2023-1616-1	FENTANYL	Neg	Neg	
			ABPINACA	Neg	Neg	
			ETHYLGLUCURONIDE	Neg	Neg	
			METHAMPHETAMINE	Neg	Neg	
			BARBITURATE	Neg	Neg	
			BENZODIAZEPINE	Neg	Neg	
			ABCHMINACA	Neg	Neg	
			METHADONE	Neg	Neg	
			OPIATE	Neg	Neg	
			PCP	Neg	Neg	
			BZG	Neg	Neg	
			OXYCODONE	Neg	Neg	
			TRAMADOL	Neg	Neg	
			THC	Neg	Neg	
			TRYCYCLICANTIDEPRESSANTS	Neg	Neg	
			AMPHETAMINE	Neg	Neg	
			BUPRENORPHINE	Neg	Neg	
			6MAM	Neg	Neg	
			PREGABALIN	Neg	Neg	
			ALPHAPVP	Neg	Neg	

Run Date	Analyst	Sample Name	Analyte	Result	Expected Result	Notes
6/30/2023	NB	M2023-1905-6	FENTANYL	Neg	Neg	
			ABPINACA	Neg	Neg	
			ETHYLGLUCURONIDE	Neg	Neg	
			METHAMPHETAMINE	POS	POS	
			BARBITURATE	Neg	Neg	
			BENZODIAZEPINE	Neg	Neg	
			ABCHMINACA	Neg	Neg	
			METHADONE	Neg	Neg	
			OPIATE	Neg	Neg	
			PCP	Neg	Neg	
			BZG	POS	POS	
			OXYCODONE	Neg	Neg	
			TRAMADOL	Neg	Neg	
			THC	POS*	Neg	
			TRYCYCLICANTIDEPRESSANTS	Neg	Neg	
			AMPHETAMINE	Neg	Neg	Amphetamine concentration is ~21ng/mL, so it was not expected to screen as positive.
			BUPRENORPHINE	Neg	Neg	
			6MAM	Neg	Neg	
			PREGABALIN	Neg	Neg	
			ALPHAPVP	Neg	Neg	

*c-THC concentration is ~3.1ng/mL. Cutoff for screen is 10ng/mL. Assay detects other cannabinoids as well,
not just c-THC, which is all that was detected in LC/MS/MS screen.

Run Date	Analyst	Sample Name	Analyte	Result	Expected Result	Notes
6/30/2023	NB	P2023-1283-1	FENTANYL	POS	POS	
			ABPINACA	Neg	Neg	
			ETHYLGLUCURONIDE	Neg	Neg	
			METHAMPHETAMINE	Neg	Neg	
			BARBITURATE	Neg	Neg	
			BENZODIAZEPINE	Neg	Neg	
			ABCHMINACA	Neg	Neg	
			METHADONE	Neg	Neg	
			OPIATE	Neg	Neg	
			PCP	Neg	Neg	
			BZG	Neg	Neg	
			OXYCODONE	Neg	Neg	
			TRAMADOL	Neg	Neg	
			THC	Neg	Neg	
			TRYCYCLICANTIDEPRESSANTS	Neg	Neg	
			AMPHETAMINE	Neg	Neg	
			BUPRENORPHINE	Neg	Neg	
			6MAM	Neg	Neg	
			PREGABALIN	Neg	Neg	
			ALPHAPVP	Neg	Neg	

Run Date	Analyst	Sample Name	Analyte	Result	Expected Result	Notes
7/3/2023	GG	M2023-1613-1	FENTANYL	Neg	Neg	
			ABPINACA	Neg	Neg	
			ETHYLGLUCURONIDE	Neg	Neg	
			METHAMPHETAMINE	Neg	Neg	
			BARBITURATE	Neg	Neg	
			BENZODIAZEPINE	Neg	Neg	
			ABCHMINACA	Neg	Neg	
			METHADONE	Neg	Neg	
			OPIATE	Neg	Neg	
			PCP	Neg	Neg	
			BZG	Neg	Neg	
			OXYCODONE	Neg	Neg	
			TRAMADOL	Neg	Neg	
			THC	Neg	Neg	
			TRYCYCLICANTIDEPRESSANTS	Neg	Neg	
			AMPHETAMINE	Neg	Neg	
			BUPRENORPHINE	Neg	Neg	
			6MAM	Neg	Neg	
			PREGABALIN	Neg	Neg	
			ALPHAPVP	Neg	Neg	

Run Date	Analyst	Sample Name	Analyte	Result	Expected Result	Notes
7/3/2023	GG	P2023-0331-1	FENTANYL	Neg	Neg	
			ABPINACA	Neg	Neg	
			ETHYLGLUCURONIDE	Neg	Neg	
			METHAMPHETAMINE	Neg	Neg	
			BARBITURATE	Neg	Neg	
			BENZODIAZEPINE	Neg	Neg	
			ABCHMINACA	Neg	Neg	
			METHADONE	Neg	Neg	
			OPIATE	Neg	Neg	
			PCP	Neg	Neg	
			BZG	Neg	Neg	
			OXYCODONE	Neg	Neg	
			TRAMADOL	Neg	Neg	
			THC	Neg	Neg	
			TRYCYCLICANTIDEPRESSANTS	Neg	Neg	
			AMPHETAMINE	Neg	Neg	
			BUPRENORPHINE	Neg	Neg	
			6MAM	Neg	Neg	
			PREGABALIN	Neg	Neg	
			ALPHAPVP	Neg	Neg	

Run Date	Analyst	Sample Name	Analyte	Result	Expected Result	Notes
7/5/2023	GG	P2023-0330-1	FENTANYL	Neg	Neg	
			ABPINACA	Neg	Neg	
			ETHYLGLUCURONIDE	Neg	Neg	
			METHAMPHETAMINE	POS	POS	
			BARBITURATE	Neg	Neg	
			BENZODIAZEPINE	Neg	Neg	
			ABCHMINACA	Neg	Neg	
			METHADONE	Neg	Neg	
			OPIATE	Neg	Neg	
			PCP	Neg	Neg	
			BZG	Neg	Neg	
			OXYCODONE	Neg	Neg	
			TRAMADOL	Neg	Neg	
			THC	Neg	Neg	
			TRYCYCLICANTIDEPRESSANTS	Neg	Neg	
			AMPHETAMINE	Neg	Neg	Amphetamine concentration is ~23ng/mL, so it was not expected to screen as positive.
			BUPRENORPHINE	Neg	Neg	
			6MAM	Neg	Neg	
			PREGABALIN	Neg	Neg	
			ALPHAPVP	Neg	Neg	

Run Date	Analyst	Sample Name	Analyte	Result	Expected Result	Notes
7/5/2023	JG	P2023-1381-1	FENTANYL	Neg	Neg	
			ABPINACA	Neg	Neg	
			ETHYLGLUCURONIDE	Neg	Neg	
			METHAMPHETAMINE	POS	POS	Methamphetamine concentration is ~384ng/mL
			BARBITURATE	Neg	Neg	
			BENZODIAZEPINE	Neg	Neg	
			ABCHMINACA	Neg	Neg	
			METHADONE	Neg	Neg	
			OPIATE	Neg	Neg	
			PCP	Neg	Neg	
			BZG	Neg	Neg	
			OXYCODONE	Neg	Neg	
			TRAMADOL	Neg	Neg	
			THC	Neg	Neg	
			TRYCYCLICANTIDEPRESSANTS	Neg	Neg	
			AMPHETAMINE	POS	POS	Amphetamine concentration is ~65ng/mL
			BUPRENORPHINE	Neg	Neg	
			6MAM	Neg	Neg	
			PREGABALIN	Neg	Neg	
			ALPHAPVP	Neg	Neg	

Run Date	Analyst	Sample Name	Analyte	Result	Expected Result	Notes
7/6/2023	JG	M2023-1896-1	FENTANYL	POS	POS	
			ABPINACA	Neg	Neg	
			ETHYLGLUCURONIDE	Neg	Neg	
			METHAMPHETAMINE	POS	POS	
			BARBITURATE	Neg	Neg	
			BENZODIAZEPINE	Neg	Neg	
			ABCHMINACA	Neg	Neg	
			METHADONE	POS	POS	
			OPIATE	Neg	Neg	
			PCP	Neg	Neg	
			BZG	Neg	Neg	
			OXYCODONE	Neg	Neg	
			TRAMADOL	Neg	Neg	
			THC	Neg	Neg	
			TRYCYCLICANTIDEPRESSANTS	Neg	Neg	
			AMPHETAMINE	Neg	Neg	
			BUPRENORPHINE	Neg	Neg	
			6MAM	Neg	Neg	
			PREGABALIN	Neg	Neg	
			ALPHAPVP	Neg	Neg	

Run Date	Analyst	Sample Name	Analyte	Result	Expected Result	Notes
7/6/2023	JG	P2023-0181-1	FENTANYL	Neg	Neg	
			ABPINACA	Neg	Neg	
			ETHYLGLUCURONIDE	Neg	Neg	
			METHAMPHETAMINE	Neg	Neg	
			BARBITURATE	Neg	Neg	
			BENZODIAZEPINE	Neg	Neg	
			ABCHMINACA	Neg	Neg	
			METHADONE	Neg	Neg	
			OPIATE	Neg	Neg	
			PCP	Neg	Neg	
			BZG	Neg	Neg	
			OXYCODONE	Neg	Neg	
			TRAMADOL	Neg	Neg	
			THC	POS	POS	
			TRYCYCLICANTIDEPRESSANTS	Neg	Neg	
			AMPHETAMINE	Neg	Neg	
			BUPRENORPHINE	Neg	Neg	
			6MAM	Neg	Neg	
			PREGABALIN	Neg	Neg	
			ALPHAPVP	Neg	Neg	

Results of Controls

Positive Control Results (2X Cutoff)

Run Date	Analyst	Result	Expected Result	Notes
6/30/2023	GG	POS for all	POS for all	
7/3/2023	GG	POS for all	POS for all	
7/5/2023	NB	POS for all	POS for all	
7/6/2023	JG	POS for all	POS for all	
7/7/2023	JG	POS for all	POS for all	

Negative Control Results (1/2X Cutoff)

Run Date	Analyst	Result	Expected Result
6/30/2023	GG	Negative for all	Negative for all
7/3/2023	GG	Negative for all	Negative for all
7/5/2023	NB	Negative for all	Negative for all
7/6/2023	JG	Negative for all	Negative for all
7/7/2023	JG	Negative for all	Negative for all

Negative Blood Results (Blank Blood)

Run Date	Analyst	Result	Expected Result
6/30/2023	GG	Negative for all	Negative for all
7/3/2023	GG	Negative for all	Negative for all
7/5/2023	NB	Negative for all	Negative for all
7/6/2023	JG	Negative for all	Negative for all
7/7/2023	JG	Negative for all	Negative for all