TEXAS FORENSIC SCIENCE COMMISSION

Justice Through Science

FINAL REPORT ON COMPLAINT NO. 20.55 CARRIE WOOD (EXPERTOX; FORENSIC TOXICOLOGY)

April 14, 2023

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I. COMMISSION BACKGROUND

A. History and Mission of the Texas Forensic Science Commission

The Texas Forensic Science Commission ("Commission") was created during the 79th Legislative Session in 2005 with the passage of HB-1068. The Act amended the Code of Criminal Procedure to add Article 38.01, which describes the composition and authority of the Commission.[1] During subsequent legislative sessions, the Texas Legislature further amended the Code of Criminal Procedure to clarify and expand the Commission's jurisdictional responsibilities and authority.[2]

The Commission has nine members appointed by the Governor of Texas.[3] Seven of the nine commissioners are scientists or medical doctors and two are attorneys (one prosecutor nominated by the Texas District and County Attorney's Association and one criminal defense attorney nominated by the Texas Criminal Defense Lawyer's Association).[4] The Commission's Presiding Officer is Jeffrey Barnard, MD. Dr. Barnard is the Chief Medical Examiner of Dallas County and Director of the Southwestern Institute of Forensic Sciences in Dallas.

B. Commission Jurisdiction

1. Investigations of Professional Negligence or Professional Misconduct Resulting from Complaints and Laboratory Self-Disclosures

Texas law requires the Commission to "investigate in a timely manner, any allegation of professional negligence or professional misconduct that would substantially affect the integrity of the results of a forensic analysis conducted by crime laboratory."[5] The term "forensic analysis" is

[1] TEX. CODE CRIM. PROC. art. 38.01.
[2] *See e.g.*, Acts 2013, 83rd Leg. ch. 782 (S.B. 1238) §§ 1-4 (2013); Acts 2015, 84th Leg. ch. 1276 (S.B. 1287) §§ 1-7 (2015); TEX. CODE CRIM. PROC. art 38.01 § 4-a(b).
[3] TEX. CODE OF CRIM. PROC. art. 38.01 § 3.
[4] *Id.*
[5] TEX. CODE CRIM. PROC. art. 38.01 § 4(a)(3)(A).

defined as a medical, chemical, toxicological, ballistic, or other examination or test performed on physical evidence, including DNA evidence, for the purpose of determining the connection of the evidence to a criminal action.[6] The statute excludes certain types of analyses from the "forensic analysis" definition, such as latent print analysis, a breath test specimen, and the portion of an autopsy conducted by a medical examiner or licensed physician.[7]

Crime laboratories must also report professional negligence or professional misconduct to the Commission.[8] The statute does not define the terms "professional negligence" and "professional misconduct." The Commission has defined those terms in its administrative rules.[9]

2. Accreditation Jurisdiction

The Commission is charged with accrediting crime laboratories and other entities that conduct forensic analyses of physical evidence for use in criminal proceedings.[10] The term "crime laboratory" includes a public or private laboratory or other entity that conducts a forensic analysis subject to the statute.[11]

3. Licensing Jurisdiction

Under Texas law, a person may not act or offer to act as a forensic analyst unless the person holds a Forensic Analyst License issued by the Commission.[12] While accreditation is granted to the entities that perform forensic analysis, licensing is a credential obtained by the individuals who practice the forensic analysis. The licensing program took effect on January 1, 2019.

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[6] TEX. CODE CRIM. PROC. art. 38.35(a)(4).
[7] *See*, TEX. CODE CRIM. PROC. art. 38.35 (a)(4)(A)-(F) and (f) *(for a complete list of statutory exclusions)*.
[8] TEX. CODE CRIM. PROC. art. 38.01 § 4(a)(1)-(2). *(Additionally, pursuant to the Forensic Analyst Licensing Program Code of Professional Responsibility, members of crime lab management shall make timely and full disclosure to the Texas Forensic Science Commission of any non-conformance that may rise to the level of professional negligence or professional misconduct.) See,* 37 Tex. Admin. Code § 651.219(c)(5) (2018).
[9] 37 Tex. Admin. Code § 651.302 (7) and (8) (2020).
[10] TEX. CODE CRIM. PROC. art. 38.01 § 4-d(b).
[11] TEX. CODE CRIM. PROC. art. 38.35 § (a)(1).
[12] TEX. CODE CRIM. PROC. art. 38.01§ 4-a(b); 37 Tex. Admin Code § 651.201(c) (2018).

The law defines the term "forensic analyst" as "a person who on behalf of a crime laboratory [accredited by the Commission] technically reviews or performs a forensic analysis or draws conclusions from or interprets a forensic analysis for a court or crime laboratory.[13] Pursuant to its licensing authority, the Commission may take disciplinary action against a license holder or applicant for a license on a determination by the Commission that a license holder or applicant for a license has committed professional misconduct or has violated Texas Code of Criminal Procedure Article 38.01 or an administrative rule or other order by the Commission.[14] If the Commission determines a license holder has committed professional misconduct or has violated an administrative rule or order by the Commission, the Commission may: (1) revoke or suspend the person's license; (2) refuse to renew the person's license; (3) reprimand the license holder; or (4) deny the person a license.[15] The Commission may place on probation a person whose license is suspended.[16] Disciplinary proceedings and the process for appealing a disciplinary action by the Commission are governed by the Judicial Branch Certification Commission.[17]

C. Jurisdiction Applicable to this Complaint.

The subject laboratory, ExperTox, Inc. ("ExperTox") and the individual analyst, Dr. Ernest Lykissa, ("Dr. Lykissa"), which are the subject of this complaint and investigation, were subject to the Commission's investigative, accreditation and licensing jurisdiction described above.

At the time of the forensic analysis that is the subject of this complaint and investigation and during the course of the Commissions' investigation in this matter, ExperTox was accredited

[13] TEX. CODE CRIM. PROC. art. 38.01 § 4-a(a)(2).
[14] TEX. CODE CRIM. PROC. art. 38.01 § 4-c; 37 Tex. Admin Code § 651.216(b) (2019).
[15] *Id.* at 651.216(b)(1)-(4).
[16] *Id.* at (c).
[17] TEX. CODE CRIM. PROC. art. 38.01 § 4-c(e); 37 Tex. Admin. Code § 651.216(d) (2019).

by the College of American Pathologists ("CAP") under CAP's Forensic Drug Testing Program, a Commission-recognized accrediting body, and Dr. Lykissa served in the role of Vice President, and Laboratory Director at ExperTox in Deer Park, Texas (the location where the forensic analysis that is the subject of this complaint and investigation occurred).[18]

On or about and between October 2—October 24, 2019, ExperTox performed the hair analysis that is the subject of this report. Dr. Lykissa subsequently authored an interpretive opinion regarding the hair analysis. Since the Commission's investigation in this matter, ExperTox has undergone significant changes in leadership and has changed the focus and scope of its laboratory work, including accepting Dr. Lykissa's resignation and hiring a new Laboratory Director and Quality Director. ExperTox hired Dr. James Bourland, Ph.D., F-ABFT, NRCC-TC as the new Laboratory Director on October 5, 2022. In addition, ExperTox created and filled the position of Quality Supervisor to oversee validation studies, quality management and quality assurance programs at the laboratory.

Dr. Lykissa never obtained his full forensic analyst license by the Commission at any time relevant to this complaint, although he was allegedly performing forensic analysis and required to be licensed prior to November 9, 2022, the date the Commission removed CAP as an accrediting body. The Commission granted Dr. Lykissa a provisional license in the discipline of Toxicology

[18] Effective November 9, 2022, the Commission withdrew its recognition of the national accrediting bodies CAP and the Substance Abuse and Mental Health Services Administration (SAMHSA) for accreditation of crime laboratories performing forensic analysis in criminal actions. As a result of the Commission's withdrawal of recognition of CAP and SAMHSA as accrediting bodies, ExperTox and four other Texas-accredited laboratories who were solely accredited by CAP's Forensic Drug Testing program were no longer recognized by the Commission to perform forensic analysis for criminal actions (effective 11/9/2022) or were otherwise already exempt from accreditation and licensing requirements in Texas. The Commission found the testing performed by CAP and SAMHSA laboratories is typically not initiated for the principal purpose of determining the connection of physical evidence to a criminal action, but rather is within contexts such as community supervision, clinical, medical practice or other purposes unrelated to determining the connection of physical evidence to a criminal action. *See*, **Section VII.** of this report for further description on the accreditation program changes. Neither CAP, SAMHSA, nor any of the affected laboratories filed comments or otherwise objected to Commission's rulemaking removing these accreditation programs.

(Interpretive) on February 10, 2021, shortly after it discussed this complaint at the Commission's January 2021 quarterly meeting. Dr. Lykissa's provisional license expired on February 9, 2022. After the expiration of his provisional license, Dr. Lykissa completed a statistics course which is required for full licensure. However, the course was insufficient to satisfy the requirement,[19] and this precluded Dr. Lykissa from obtaining a forensic analyst license.

D. Limitations of this Report

The Commission's authority contains important statutory limitations. For example, no finding by the Commission constitutes a comment upon the guilt or innocence of any individual.[20] The Commission's written reports are not admissible in civil or criminal actions nor does the Commission have the authority to subpoena documents or testimony.[21] Information the Commission receives during any investigation is dependent upon the willingness of stakeholders to submit relevant documents and respond to questions. The information gathered in this report is not subject to the standards for admission of evidence in a courtroom. For example, no individual testified under oath, was limited by either the Texas or Federal Rules of Evidence (e.g., against the admission of hearsay) or was subject to cross-examination under a judge's supervision.

II. BACKGROUND AND SUMMARY OF COMPLAINT

A. Complaint and Investigative Decision by the Commission

This report contains observations and recommendations regarding a complaint filed by Assistant District Attorney Carrie Wood ("ADA Wood"), formerly a member of the Conviction Integrity Unit of the Philadelphia District Attorney's Office. The Commission accepted the

[19] A three-semester credit hour (or equivalent) college-level statistics course is required by any applicant who applied for licensure *after* January 1, 2019. The course Dr. Lykissa submitted for approval included less than the required credit hours.
[20] *Id.* at § 4(g) (2019).
[21] *Id.* at § 11 (2019).

complaint for investigation and formed an investigative panel at its January 29, 2021 quarterly meeting. The Investigative Panel consists of Sarah Kerrigan, Ph.D., Nancy Downing, Ph.D., Mark Daniel, Esq., and Brazos County Elected District Attorney Jarvis Parsons, Esq.

B. Summary of the Complaint

The complaint alleges that ExperTox, through an intermediary collection laboratory in Philadelphia named Arcpoint, was engaged to conduct hair testing as part of an investigation into sexual assault allegations and the potential pursuit of criminal charges. ExperTox produced a laboratory report containing results of hair testing and a written interpretive report providing Dr. Lykissa's opinion on the pharmacological effects of detected substances. According to the complaint, the Assistant District Attorney assigned to the criminal investigation, Rachel Black ("ADA Black"), became concerned with quality and reliability of ExperTox's work based on telephone conversations with Dr. Lykissa, and contacted ADA Wood regarding her concerns. ADA Wood instructed ADA Black to obtain documents regarding the analysis from ExperTox and submit them to another laboratory, NMS Labs, Inc. in Horsham, Pennsylvania, for review. NMS Labs, Inc. is also subject to the Commission's jurisdiction, with laboratory facilities in Pennsylvania and Texas.

The original ExperTox hair analysis report ("Original Report") dated October 25, 2019, was submitted to the Commission with ADA Wood's complaint. ExperTox reported detecting delta-9-tetrahydrocannabinol (THC) and lidocaine in the hair of the survivor. Of particular note, the original hair analysis report contained a caveat statement that read: "Results are for CLINICAL USE ONLY, NOT FOR FORENSIC PURPOSES." (*See,* **Exhibit A, ExperTox Original Report**.) The complaint also included a letter report ("Interpretive Toxicology Report") dated February 25, 2020, in which Dr. Lykissa provided the statement: "It is my professional opinion

that these amounts of THC and lidocaine detected in [the survivor's] hair, constitute evidence of potential combined enhanced pharmacological effect to her ability to control her Mental and Physical faculties. If these drugs were administered to her without her consent, then that could constitute a drug facilitated assault by the perpetrator." (*See*, **Exhibit B, ExperTox Interpretive Report**.)

The complaint also included a draft report of observations by expert toxicologist Dr. Sherri Kacinko from NMS Labs that strongly criticized various aspects of the testing, reports, and statements made by Dr. Lykissa in the case. (*See*, **Exhibit C**, **NMS Report**.)

C. Initial Response by Dr. Lykissa and his Pre-Investigation Appearance at the Texas Forensic Science Commission Quarterly Meeting January 29, 2021.

On January 12, 2021, Commission staff notified Dr. Lykissa of the complaint via email, providing him a copy of the complaint and corresponding attachments. On January 13, 2021, Dr. Lykissa responded by email stating it "is with great surprise" that he received notification from the Commission that the Commission was involved in a case that "was clearly labeled as Only for Clinical Purposes and not Forensic." In the email reply, he further stated his intention to be virtually present for the Commission's hearing to discuss the complaint.

Dr. Lykissa appeared via Zoom at the quarterly Commission meeting held on January 29, 2021. (*See*, **Exhibit D**, **Link to Quarterly Meeting Video**.) In his statements at the Commission's meeting, Dr. Lykissa said he told prosecutors ExperTox did not have a validated method for detecting lidocaine in hair, so any results would only indicate the presence of the substance, but not the quantity. Dr. Lykissa stated the testing was positive for the presence of lidocaine, but that he conducted the testing using "…a clinical method."

Dr. Lykissa told the Commission that the baseline portion of the hair detected no THC and a small amount of lidocaine, and that the portion of the hair tested for the presence of drugs detected

THC and lidocaine. He further stated that he told the prosecutor, "I do not want to testify in this case. I cannot offer you anything scientifically valid," and claimed he stressed to the prosecutor to "please read the caveat I bolded for you" that stated, "Results are for CLINICAL USE ONLY, NOT FOR FORENSIC PURPOSES." Lykissa and ADA Black's respective recollection of events differ. (*See*, **Exhibit E**, **ADA Black Affidavit**.)

During the meeting, the Commission's General Counsel read Dr. Lykissa an excerpt from the ExperTox Interpretive Report dated February 25, 2020, signed by Dr. Lykissa, that relayed his professional opinion that the "amounts of THC and lidocaine detected in [the survivor's] hair, constitute evidence of potential serious combined enhanced pharmacological effect on her ability to control her mental and physical faculties. If these drugs were administered to her without her consent, then that could constitute a drug facilitated assault by the perpetrator."

After some discussion of his overall experience and expertise in forensic toxicology and pharmacology, Dr. Lykissa stated, "as far as I am concerned, this test should not have been used…even though I wrote the report."

Dr. Lykissa also stated that initially he was unaware the testing was requested in connection with a criminal action because he received it from a collector, Arcpoint Laboratory in Philadelphia, and was not informed about the purpose of the testing. The testing requested was described as a "date rape panel" pursuant to court order, which should at least flag the possibility the request was in the context of a criminal proceeding. To the extent there was a question, Dr. Lykissa's subsequent communications with the prosecutor removed all ambiguity. Indeed, until recently ExperTox's own website made the following claim: "Law enforcement, criminal justice and legal professionals have found their single source forensic toxicology solution in ExperTox."[22] [The

[22] https://www.expertox.com/html/services/legal.php (*last accessed July 8, 2022*).

website's express representation that criminal justice stakeholders were a key part of ExperTox's client base undermines Dr. Lykissa's assertions that the laboratory's testing sometimes "ended up" in criminal proceedings, but that this was unbeknownst to him.]

The Commission notes the ExperTox website no longer makes the claim referenced above. The current website emphasizes the purpose of the laboratory's test results and removes confusion about the purpose of the testing being criminal forensic analysis, viz: "ExperTox's test results may exclusively be used for diagnostic, clinical, or civil purposes. Nothing in our test results constitute forensic analyses for use in criminal matters."

D. Second "Forensically Validated" Report

At the time of Dr. Lykissa's January 2021 quarterly meeting appearance, the Commission was unaware that ExperTox produced a second version of the original report and subsequently provided it to the District Attorney's Office. Shortly after Dr. Lykissa's appearance, however, the Commission learned that the laboratory produced a "forensically validated" or "court admissible" version of the Original Report for an additional fee.[23] The District Attorney's Office provided a copy of the second "forensically validated" report to Commission staff. Commission staff closely examined the second report and determined the only difference between the Original Report and the second version was the omission of the phrase "CLINICAL USE ONLY, NOT FOR FORENSIC PURPOSES." (*See*, **Exhibit F: ExperTox "Forensic" Report**.) All other information contained in the Original Report and second, "forensically validated" report, including the dates of analysis, are identical. Both the Original Report and the "Forensic" Report include a representation that the results were reviewed by Dr. Lykissa and another ExperTox analyst.

[23] On February 1, 2021, Dr. Kacinko emailed ADA Black indicating she watched Dr. Lykissa's appearance at the Jan. 2021 Commission quarterly meeting. She noted there was an additional ExperTox report without the disclaimer that Lykissa did not mention.

E. Facts of Underlying Criminal Investigation

Law enforcement arrested the suspect, a former Philadelphia police officer, in the underlying criminal investigation on September 27, 2019, and charged him with sexual assault. In a bail motion hearing on October 17, 2019, the prosecutor announced to the court a pending hair analysis due to survivor allegations of drugging by the defendant.

In the next hearing on November 1, 2019, the prosecution stated the video of the episode depicted a "visibly altered woman" and that a hair test dated October 25, 2019, "was positive for more than one drug the complaining witness did not voluntarily consume." The prosecutor noted that one of those drugs (lidocaine) was found in a bottle in the suspect's nightstand during a search of his home. Based upon ExperTox's hair test results, the prosecutor announced her intention to amend the charges to include a more serious allegation of "rape by the administration of drugs and intoxicants to the complainant without her knowledge for the purpose of preventing resistance," a first-degree felony.[24]

The court held a preliminary hearing on the case on January 15 and 16, 2020. During that hearing, an investigating officer testified to finding a bottle of lidocaine in the suspect's bedroom nightstand. The prosecutor then offered the ExperTox "forensically validated" report and certified in good faith that she would have a doctor testify to relevance of the scientific data at trial. As noted, this version of the analytical report omitted the caveat "for clinical use only, not for forensic purposes."

The prosecutor stated the government's theory was that, based on the hair test results, "the defendant gave [the victim] THC in addition to the lidocaine." The prosecutor acknowledged that

[24] *See*, 18 Pa. C.S. § 3121(a)(4), A person commits a felony of the first degree when the person engages in sexual intercourse with a complainant, "where the person has substantially impaired the complainant's power to appraise or control his or her conduct by administering or employing, without the knowledge of the complainant, drugs, intoxicants or other means for the purpose of preventing resistance."

lidocaine is not typical in sexual assault cases (unlike GHB) but stated that this fact does not bar prosecuting the defendant "if he put that in her drink, if he put that on a [sex toy] without her knowledge and it increased her level of intoxication."

The record indicates that the incident being prosecuted in the case was videotaped and, following its viewing at the preliminary hearing, the court dismissed the charges for lack of evidence.

III. INVESTIGATION

A. Initial Document Request from the Commission to ExperTox

On March 22, 2021, Commission staff requested Dr. Lykissa's response to certain questions regarding the frequency and content of ExperTox's reports utilized in criminal proceedings. Staff also requested a list of controlled substances for which ExperTox offers hair analysis. (*See*, **Exhibit G, Letter to Dr. Lykissa 3.22.21**.) On March 29, 2021, Lykissa provided the requested information. (*See*, **Exhibit H, ExperTox Response to TFSC 3.29.21**.) ExperTox did not answer the questions directly:

> For example, in the Wood Carrie case in Philadelphia, the DA asked me to testify on this case for which I declined since the test had been performed for Clinical Use only. The reason been [sic] that we did not have a Forensically validated hair testing method for Lidocaine at this time, only for clinical testing. Then the DA literally begged me to write something down hypothetically for the Lidocaine and THC combined effect on someone's mental state which reluctantly I did (my wrong decision) sent her the standard report I issue to the Medical Centers in the Houston area to Medical Doctors handling critical care patients. I also recall telling her that the Lidocaine detected in the baseline segment was disproving the claim of the plaintiff that the Lidocaine was administered by the defendant. Only the THC was pertinent. I also advised her to talk to NMS for supportive testimony. The complaint was filed with your Commission by the Defense Attorney who demanded from my assistants, for me to consult with her which I declined.

B. Documents Reviewed and Interview Request

The Panel and Commission staff interviewed several witnesses, including:

1. Rachel Black, the former Assistant District Attorney assigned to investigate and prosecute the underlying criminal case.

2. Dr. Sherri Kacinko, a forensic toxicologist at NMS Labs, who was retained by the District Attorney's Office to examine the data underlying ExperTox's report.

3. Dr. Khushroo Shroff, President and CEO of Arcpoint Laboratory in Philadelphia, a facility used for the collection of the specimens used in the ExperTox analysis.

4. Dr. Ernest Lykissa, a toxicologist at ExperTox Laboratories in Deer Park, unlicensed by the Commission at the time of the subject analysis of this complaint.

Commission staff reviewed various documents, correspondence, and transcripts of court hearings (*See*, **Exhibit I, List of Documents Reviewed**.**)**

C. Interview of Dr. Lykissa

On July 12, 2022, Commission staff and the investigative panel members interviewed Dr. Lykissa.[25] He acknowledged the lidocaine results (3.9 pg/mg) were reported despite being well below the laboratory SOP reporting cut-off of 100 pg/mg. He also acknowledged the single point calibration used in the analysis violated the laboratory SOP requiring a five-point calibration curve and admitted the single point calibration was not a scientifically valid method for obtaining a quantitative result. Dr. Lykissa also discussed the laboratory's prior validation of the method and the lack of validation studies supplied despite numerous prior requests by the Commission.[26] After the interview, a representative from ExperTox submitted a document entitled "Lidocaine Analysis in Pharma Samples," however, *this document is not a validation study*. To date, Dr. Lykissa has not submitted any relevant validation studies for lidocaine performed before the hair testing was

[25] Just prior to the interview, Dr. Lykissa was discharged from an eleven-day stay at Memorial Hermann Southeast for treatment of residual health effects of a recent coronavirus infection, including acute atrial fibrillation, radiation treatment, and sepsis. Dr. Lykissa was still convalescing at the time of the interview and was later re-admitted to Memorial Hermann Southeast for the same medical concerns on August 4, 2022.

[26] Before the interview, ExperTox submitted a 2017 and a 2018 "Acquisition Method Report" related to Agilent Technologies' "Masshunter" software as purported validation studies. Commission staff has repeatedly informed ExperTox of the legal requirement that staff be copied on all substantive communications with the laboratory's accrediting body. As of this writing, ExperTox has yet to confirm that all required information has been provided.

reported in this case. In response to a recent request from CAP, ExperTox provided documentation purporting to relate to validation of hair analysis for lidocaine. However, the information provided to CAP is incomplete and the validation summary is dated well after the testing discussed in this report (June 30, 2022).

Dr. Lykissa maintained his original report with the "Clinical Use Only" caveat was utilized because the request was not clearly forensic, despite being "Court Ordered" for a "Date Rape." The caveat was removed after discussions with the prosecutor, so it was clear at that time it was to be used in connection with a criminal action. Dr. Lykissa admitted he was not licensed by the Commission when any of the ExperTox reports in the Philadelphia case were issued.

IV. ROHRIG REPORT FINDINGS AND OBSERVATIONS

A. Expert Report Background

At its July 16, 2021 quarterly meeting, the Commission voted to retain forensic toxicology expert Dr. Timothy Rohrig to review the case and issue a written report detailing his observations and expert opinion on the complaint in this investigative matter.[27] ("Rohrig Report"). (*See,* **Exhibit K**, **Rohrig Report**.)

The Commission provided Dr. Rohrig with all documentation supplied by ExperTox during the investigation. Staff intentionally omitted the NMS report from materials sent to Dr. Rohrig. All observations set forth in this report are the independent impressions of Dr. Rohrig, based upon ExperTox's records and reports provided to the Commission.

[27] Dr. Rohrig is a forensic toxicologist who provides expert consultant services in forensic toxicology to a variety of stakeholders in the criminal justice system. (*See* Rohrig CV at **Exhibit J**.) He is not a forensic practitioner employed by an accredited crime laboratory in Texas, and thus he is neither required to be, nor is he eligible for, licensure under Texas law. *See*, Tex. Code Crim. Proc. Art 38.01.

After review of all materials provided to him, Dr. Rohrig's expert opinion was that the toxicology report should never have been issued, and that the "expert opinion" contained in the interpretive toxicology report was not founded in or supported by current scientific literature.

A detailed description of Dr. Rohrig's most pertinent findings and observations is outlined below. As a threshold matter, Dr. Rohrig found the overall evaluation of the data challenging due to illegible "screen shots" of sequence tables, poor quality chromatograms with difficult to read numerical values, and the absence of key raw data (e.g., area counts of ions) provided by ExperTox.

B. GHB Result

Dr. Lykissa reported Gamma-hydroxybutyrate ("GHB") was detected at a concentration of less than 50 pg/mg of hair. The analysis was conducted October 6-14, 2019. Dr. Rohrig's review revealed the following:

- Records for the GHB batch log do not indicate the GC/MS instrument used for the analysis.
- GHB results reflected on the handwritten batch log was ZERO, as compared to the reported result of "Detected" less than 50 pg.mg (suggesting the compound was detected above the limit of detection (LOD) but below the limit of quantification (LOQ) of 50 pg/mg).
- The GHB reported result of "Detected <50 pg/mg" is therefore in conflict with the "ZERO" written on the confirmation batch log.

C. Lidocaine Result

Dr. Lykissa reported lidocaine was detected at 3.9 pg/mg of hair (with a baseline detection at 0.43). The analysis was conducted October 16-24, 2019. Dr. Rohrig's review revealed the following:

- The effective date for the lidocaine Standard Operating Procedure ("SOP") was October 30, 2019, five days after the original testing was completed and the original

report published. *It therefore appears that the analytical work was performed under an unapproved SOP.*

- The laboratory's SOP for lidocaine provided that a 5-point calibration curve, including the origin, should be generated for each client sample. *Instead, the laboratory used a single point calibrator. This is not a forensically acceptable method to produce a quantitative value.*

- *Dr. Lykissa did not follow the laboratory's reporting criteria*. Both case and baseline samples should have been reported out as NEGATIVE, since both are below the apparent LOD/LOQ of the method (as established in an after-the-fact "Lidocaine Linearity Study" performed by ExperTox, discussed below).

- *The laboratory did not validate the lidocaine method* as required by CAP and pursuant to proper forensic laboratory practice. Even though the reports state the test was developed and validated by ExperTox, the laboratory used an assay that had no validation, or any evidence indicating establishment of any validation parameters for the batch containing the relevant case sample.

- Given the poor quality of the produced data and apparent missing key data points, i.e., ion abundance, it is not possible to assess whether the ion ratios are acceptable according to practice in forensic toxicology. The SOP states they must be within +/-30%; the printout suggests they are. However, the +/-30 % may not be acceptable given the abundances of the two ions are unknown.

- In both confirmation batches (case and baseline samples) the calibrators appear to be overloaded. Additionally, neither of these batches analyzed QC samples.

1. After-the-Fact Linearity Study (Lidocaine)

Though the Commission requested the applicable *validation study*, the laboratory produced a "Linearity Study" performed well after reported results in the case. The submitted study appears to have been performed on LCMS#4 on or about September 10, 2021.

Several issues were noted with the "Linearity Study" including:

- The calibration curve did not include the origin, contrary to the SOP.

- Evaluation of the 100 pg/mg calibrator exhibited poor chromatography of the transition ion with a significant trailing shoulder (~50%).

- The Linearity Study was not signed off on for acceptance and/or approval in case work.

Even assuming acceptable chromatography (which it is not), the Limit of Detection ("LOD") and Limit of Quantitation ("LOQ") would be the lowest calibrator of 100 pg/mg. Results of this study should have been rejected. But even setting this point aside, the LOD/LOQ for the assay is 100pg/mg. Results reported in the instant case are far below the established limits of the assay even according to the "Linearity Study" conducted after-the-fact.

2. General Validation Issues

Additionally, the study did not address other important parameters of a properly validated method such as the precision and accuracy of the method, bias in the method, interference with other compounds, and the ion suppression/enhancement in the LCMS method (matrix effects).

D. THC Result

The laboratory reported delta 9-THC was detected at 7.5 pg/mg of hair (not detected in the baseline). Dr. Rohrig's review revealed the following:

- The validation study did not have any supporting data for determination of accuracy and precision of the method.
- The validation study lacked key components for a forensically accepted study, specifically bias in the method, interference with other compounds, and the ion suppression/enhancement in the LCMS method (matrix effects).
- Lykissa reported a quantitative result, with poor identification data for the case sample.
- It is unclear what acceptable range for controls were utilized.

E. Interpretive Toxicology Report by Dr. Lykissa

The Interpretive Toxicology Report dated February 25, 2020, issued by Dr. Lykissa states: "It is my professional opinion that these amounts of THC and Lidocaine detected in Ms. [redacted] hair, constitute evidence of potential serious combined pharmacological effect to her ability to control her Mental and Physical faculties."

Even assuming there were reliable data to indicate that THC and lidocaine were actually present in the sample, the interpretation provided by Dr. Lykissa regarding impairment of the complainant was not scientifically valid. THC may have a cognitive impact while the individual is acutely intoxicated. The presence of a drug(s) in a hair sample, however, only indicates general exposure to the drug and cannot be directly associated with intoxication on any particular day. Lidocaine is a local anesthetic and antiarrhythmic drug and is generally **not known** for its intoxicating or impairing effects.[28] It generally has low bioavailability, approximately 35%. Therefore, with oral administration most of the drug will not reach systemic circulation and will have little to no central effect. At high systemic intravenous (IV) doses, this medication may cause some adverse side effects including dizziness, confusion, and loss of consciousness. The incidence of CNS toxicity (i.e., depression) is dose-dependent and quite rare, with reported frequency of less than 1% following IV administration. A review of the relevant scientific literature does not suggest any clinically relevant potentiation, additive, or synergistic effect(s) of lidocaine with the co-administration of THC.

F. Non-Forensic Report v. Forensic Report

On August 27, 2021, the Commission requested ExperTox's policy related to the use of the disclaimer language "Results are for CLINICAL USE ONLY, NOT FOR FORENSIC PURPOSES." On March 29, 2021, Dr. Lykissa responded that the statement "is used as a disclaimer for establishing the validity of our published results only for the clinical practice that

[28] An isolated report suggests that lidocaine has been used to facilitate sexual assault [Suchan and Adamowicz 2013]. Fathy et al [2019] suggest that IV lidocaine may cause post-operative cognitive impairment. In commenting on Fathy et al [2019], van der Veen and Slagt [2019] states that the post-operative cognitive dysfunction is not due to the anesthetic technique or drug, but patient characteristics, such as age and frailty. The presence of lidocaine may be due to the sexual assault examination [coating of the speculum with lidocaine], topical treatment of minor injuries sustained in the time frame in question, and/or as a lubricant used during the alleged assault.

originally ordered these test reports…since they were not performed with forensic criteria. (i.e., valid forensic chain of custody, forensically validated methods)." (*See,* **Exhibit L, ExperTox SOP Response**.)

On September 16, 2021, representatives from ExperTox produced an SOP for Non-Forensic v. Forensic Reporting, purportedly signed by Dr. Lykissa on September 8, 2018, that states in pertinent part:

> "In our laboratory we find ourselves very often in situations where once we test a sample for exclusively clinical use, the results of such a test become legally significant and we are asked to elevate the status of a test from a clinical to a forensic, court defensible evidence. Herein will be an attempt to address the complexity that ensues once the drug test results become a legal issue, which is referred to as a forensic drug test."
>
> "The stellar discrepancy of a clinical test v. forensic is the lack of a valid forensic chain of custody. In addition, the original clinical report does not usually meet forensic criteria. Therefore, in order to remedy these discrepancies, we will review all documentation, received in the lab regarding the specimen, and generated by instrumental analyses. We may then contact the sample collecting facility and advise them that we need an affidavit signed by the collector that addresses the omissions of the clinical requisition form, and the need to generate a forensic chain of custody form. The sample tested needs to be retrieved if it resulted in positive drug findings and retested under forensic protocol per our SOP and reported as such."

Dr. Rohrig reviewed the responses and SOP. He noted the only difference between the original "non-forensic" laboratory report produced by ExperTox, and the "forensic report" subsequently issued was the removal of the disclaimer language. All other information on the face of the report was identical. The report without the disclaimer does not reflect an amended report.

Dr. Rohrig concluded: "This significant upcharge for a simple removal of the disclaimer, without retesting or review and no indication of an amendment/addendum should raise some ethical concerns." The Commission concurs with Dr. Rohrig's observations, both in terms of the

scientific concerns cited and the disturbing lack of professional responsibility demonstrated by Dr. Lykissa when he increased the fee charged in exchange for removal of disclaimer language.

V. COMMISSION FINDINGS

A. Texas Licensing Requirement for Forensic Analysts

Beginning on January 1, 2019, a person may not act or offer to act as a forensic analyst in the State of Texas unless the person holds a forensic analyst license.[29] A "forensic analyst" is a person who on behalf of an accredited crime laboratory technically reviews or performs a forensic analysis or draws conclusions from or interprets a forensic analysis for a court or crime laboratory.[30]

"Forensic analysis" means a medical, chemical, toxicologic, ballistic, or other expert examination or test performed on physical evidence, including DNA evidence, for the purpose of determining the connection of the evidence to a criminal action.[31]

The hair analysis in this case occurred in October of 2019, well after the forensic analyst licensing requirement took effect. The initial report with the caveat language indicating the report was "not for forensic purposes" was released October 25, 2019. On or about and between October 2 to October 24, 2019, Dr. Lykissa conducted or reviewed the hair analysis in Deer Park, Texas and was not licensed by the Commission at that time.

Dr. Lykissa maintains he was not aware that the hair testing was sought in connection with a criminal matter because the sample was submitted by an intermediary collection agency and forwarded to his laboratory without accompanying information,[32] even though the testing request was for a "court ordered" "date rape" testing panel. For both the "forensic" report and the

[29] TEX. CODE CRIM. PROC. art. 38.01 § 4-a(b); 37 Tex. Admin. Code §651.201(c) (2018).
[30] *See*, *Id.* at § 4-a(a)(1).
[31] TEX. CODE CRIM. PROC. art. 38.35 § (a)(4).
[32] *See*, **Exhibit M, Transcript of Dr. Lykissa at the January 29, 2021, Commission quarterly meeting**.

interpretive report, the record is clear Dr. Lykissa knew he was dealing with forensic analysis of physical evidence and an interpretive opinion in connection with a criminal action.[33]

Internal Commission email correspondence indicates staff communicated the Texas licensing requirement both by email and in telephone conversation directly with Dr. Lykissa before the January 1, 2019 effective date. Records indicate that no person employed with ExperTox sought or received a license before engaging in the conduct discussed in this report despite receiving notifications of the licensing requirement.

The Commission finds Dr. Lykissa acted as forensic analyst without a forensic analyst license as required by Texas law during the period for which the analysis and interpretation was performed in this case.

B. Determination Regarding Professional Misconduct or Professional Negligence

"Professional misconduct" means the forensic analyst or crime laboratory, through a material act or omission, deliberately failed to follow the standard of practice that an ordinary forensic analyst or crime laboratory would have followed, and the deliberate act or omission would substantially affect the integrity of the results of a forensic analysis. An act or omission was deliberate if the forensic analyst or crime laboratory was aware of and consciously disregarded an accepted standard of practice required for a forensic analysis."

"Professional negligence" means the forensic analyst or crime laboratory, through a material act or omission, negligently failed to follow the standard of practice that an ordinary forensic analyst or crime laboratory would have followed, and the negligent act or omission would substantially affect the integrity of the results of a forensic analysis. An act or omission was

[33] "Criminal action" includes an investigation, complaint, arrest, bail, bond, trial, appeal, punishment, or other matter related to conduct proscribed by a criminal offense. TEX. CODE CRIM. PROC. art. 38.35 § (a)(2).

negligent if the forensic analyst or crime laboratory should have been but was not aware of an accepted standard of practice."

The term "would substantially affect the integrity of the results of a forensic analysis" does not necessarily require that a criminal case be impacted or a report be issued to the customer in error. The term includes acts or omissions that would call into question the integrity of the forensic analysis, the forensic analyst or analysts, or the crime laboratory as a whole, regardless of the ultimate outcome in the underlying criminal case.[34]

C. Professional Negligence Finding Against Dr. Lykissa: Dr. Lykissa Performed Forensic Analysis Without a Forensic Analyst License

The Commission finds Dr. Lykissa committed professional negligence by failing to follow the standard of practice that an ordinary forensic analyst would have followed in obtaining a forensic analyst license before performing forensic analysis in his laboratory located in Texas. This standard of practice was codified by the Texas Legislature in Article 38.01 of the Texas Code of Criminal Procedure, established by Commission rule in the Texas Administrative Code, and communicated to Dr. Lykissa, though he asserts he did not fully appreciate that the requirement applied to him until this investigation. The Commission finds Dr. Lykissa should have been aware of the need to obtain a license to perform forensic analysis as that term is defined in Article 38.01 of the Texas Code of Criminal Procedure, and his failure to obtain a license as required by law substantially affected the integrity of the results of the forensic analysis performed by Dr. Lykissa.

Dr. Lykissa represents and warrants that he will not, at any time now or in the future, practice forensic analysis as that term is defined in Article 38.01 of the Texas Code of Criminal Procedure from the date this report is finalized.

[34] 37 Tex. Admin. Code § 651.302 (10) (2020).

D. Professional Misconduct Finding: Testing Report(s) and the Interpretive Toxicology Report Issued by Dr. Lykissa Lack Scientific Foundation

Even more disturbing than the licensing violation is the poor quality of Dr. Lykissa's analytical and interpretive work. The hair testing results reported in the case discussed in this report are not supported by the data provided by the laboratory and are not supported by accepted scientific reporting criteria in the field of forensic toxicology. The reported results were not based in any reliable validation work and should not have been issued and constitute professional misconduct. The Commission further finds Dr. Lykissa's interpretive toxicology opinion regarding the pharmacological effects and implications for the suspect discussed in this report unfounded and unsupported by accepted scientific principles and applicable scientific literature in forensic toxicology.

The Texas Code of Professional Responsibility for Forensic Analysts and Crime Laboratory Management defines a framework for promoting integrity and respect for the scientific process and encouraging transparency in forensic analysis. The Code states that forensic analysts shall promote validation and guard against the use of non-valid methods in casework and the misapplication of validated methods.[35] The Code also states forensic analysts shall present accurate and complete data in reports, oral and written presentations and testimony based on good scientific practices and valid methods. These principles are also embodied in the Society of Forensic Toxicologists, Inc. Guiding Principles of Professional Responsibility.[36]

ExperTox's recognized accrediting body, CAP, performed a laboratory assessment of ExperTox in June 2018 and, when reviewing information regarding a different analyte (THC), CAP specifically advised Dr. Lykissa regarding the criteria that should be presented in a validation

[35] 37 Tex. Admin. Code § 651.219(b)(3), effective May 16, 2018.
[36] *See*, **Exhibit N, Society of Forensic Toxicologist Guiding Principles of Professional Responsibility**.

study. Dr. Lykissa was put on notice by CAP of issues with ExperTox's validation studies (or the lack thereof) for toxicology testing by the laboratory. CAP specifically required ExperTox to correct its prior validations, yet Dr. Lykissa continued to perform a toxicological analysis without appropriate validation of the method used in a felony criminal case where such factors as life, liberty, public safety, and the overall integrity of the criminal justice system are at stake.

Dr. Lykissa publicly admitted that he *did not have* a validated method for detecting lidocaine and would not be able to quantify the amount.[37] He also admitted that he could not offer "anything scientifically valid" with respect to the analysis.[38] "This test should not have been used…even though I wrote the [interpretive toxicology] report."[39] Dr. Lykissa reflected identical sentiments in a written response to the Commission's request for certain information by stating, "we did not have a forensically validated method hair testing method for Lidocaine at th[e] time" and when the "DA literally begged me to write something down hypothetically for the Lidocaine and THC combined effect on someone's mental state" …reluctantly I did (my wrong decision)."

The Commission finds Dr. Lykissa committed professional misconduct for deliberately failing to follow a standard of practice an ordinary forensic analyst would have followed, by failing to report forensic toxicology quantitative values utilizing a forensically validated method, contrary to industry and national accrediting body standards and the laboratory's own SOP.

The Commission further finds Dr. Lykissa committed professional misconduct by deliberately providing an interpretive toxicology report including a statement about pharmacological effects that lacked any scientific validity and by failing to show any understanding or consideration of the serious impact his actions had on the outcome of the

[37] *See*, **Exhibit D, Link to January 2021 Quarterly Meeting** at 52:00.
[38] *Id*. at 54:35.
[39] *Id*. at 58:15.

criminal case. There is no scientific basis to support the interpretive opinion offered by Dr. Lykissa regarding the so-called "serious combined enhanced pharmacological effects" of the substances in question. As Dr. Rohrig stated in his report to the Commission, a review of the relevant, published scientific literature does not suggest any clinically relevant potentiation, additive, or synergistic effect(s) of lidocaine with the co-administration of THC.

The Commission encourages stakeholders in the criminal justice system to submit any forensic analysis performed by Dr. Lykissa for review and re-analysis (where possible) by an independent accredited laboratory if needed to confirm results are scientifically supported. A list of ANSI National Accreditation Board ("ANAB") and American Association for Laboratory Accreditation ("A2LA") accredited laboratories in the discipline of forensic toxicology is maintained on the Commission's website.

E. Professional Negligence Finding Against Dr. Lykissa: Charging Extra for a "Forensic" Version of a Report Issued for Clinical Purposes

The Commission finds Dr. Lykissa committed professional negligence when he produced a "forensic" version of a clinical result for the payment of an additional fee with no other changes to the report. As detailed earlier in the report, the only difference between the original report and the second "forensically validated" report was the removal of the disclaimer language that potentially made the report inadmissible by a criminal court. All other information on the face of the report is identical. Dr. Lykissa performed no retesting and gave no indication that he amended or supplemented the report outside of removing the disclaimer.

In an email response to Dr. Rohrig's report, Dr. Lykissa maintained that the additional charge for the "forensically validated" report was attributable to "authoring the report, in lieu of a generic report listing findings with no explanation, performing a Lidocaine validation in hair, and

working with the DA for a period of 3 hours in preparation for the trial, and been (sic) available for testimony, which never occurred."

The response by Lykissa does not acknowledge that the invoice for the "Forensic Version of Reported DFSA" was dated December 2, 2019. (*See*, **Exhibit O, Invoice from ExperTox to Arcpoint.)** At that time, there had not been a report authored "in lieu of a generic report listing findings with no explanation" (the Dr. Lykissa Interpretive Report was dated February 25, 2020). Likewise, the laboratory had not performed a scientifically acceptable Lidocaine validation in hair by the December date. Further, while it may be permissible to charge for consultations before trial, those hours should not be hidden in a charge for the "forensic version" of a previously issued report.

The removal of the "Clinical Use Only, Not for Forensic Purposes" disclaimer with no substantive change to the forensic analysis or related method validation resulted in a misleading representation of the analytical findings. By charging an additional fee for a "Forensic Version of Reported DFSA", Dr. Lykissa implied the analysis was conducted pursuant to heightened requirements and oversight of the CAP Forensic Drug Testing Program, yet no such distinction existed.[40] The Commission recognizes that, since Dr. Lykissa was not licensed at the time of the analysis in this matter, he may not have been aware of the professional standards of practice articulated in the Texas Code of Professional Responsibility for Forensic Analysts that are applicable to this conduct (*e.g.*, disclosing limitations to guard against making invalid inferences or misleading the judge or jury; not issuing reports or withholding information for strategic or tactical litigation advantage; presenting accurate and complete data in reports, communicating honestly and fully with all parties). For this reason, the Commission concludes Lykissa's actions

[40] DFSA refers to Drug Facilitated Sexual Assault.

constituted professional negligence because he should have been aware (but perhaps was unaware) that issuing a "forensic version" of the report for an additional fee without conducting any further analytical work constituted a violation of the rules governing forensic analysts in Texas.

VI. EXPERTOX CORRECTIVE MEASURES FOLLOWING THE INVESTIGATION BY THE COMMISSION

Subsequent to the adoption of a draft final report by the Commission at the July 19, 2022 quarterly meeting, Dr. Lykissa resigned from his capacity as Laboratory Director of ExperTox. As of October 5, 2022, ExperTox hired Dr. James Bourland, PhD, F-ABFT, NRCC-TC as the new laboratory director. In addition, ExperTox created and filled the position of Quality Supervisor to oversee validation studies, quality management, and quality assurance programs at the laboratory. The laboratory asserts that it has improved its review and completion process of method validations as well as made various updates to its SOPs. ExperTox was also subsequently inspected by the CAP program and has received an extension of accreditation from the CAP Forensic Drug Testing Program.

VII. COMMISSION CHANGE IN CAP ACCREDITATION RECOGNITION

At its July 19, 2022 quarterly meeting, the Commission voted to remove both CAP and the Substance Abuse and Mental Health Services Administration ("SAMHSA") from the list of accrediting bodies recognized by the Commission. This change was due to multiple factors. The testing performed by CAP and SAMHSA laboratories is typically not for the principal purpose of determining the connection of physical evidence to a criminal action, but rather is within contexts like community supervision, clinical, medical practice, or other purpose unrelated to determining the connection of physical evidence to a criminal action. The programs administered by CAP and SAMHSA are fundamentally less rigorous in areas that are critical to the fair administration of

justice than the forensic accreditation programs administered by ANAB and A2LA which have as their primary purpose serving the needs of the criminal justice system.

Affected CAP and SAMHSA laboratories (including ExperTox) were notified of this intended change and voiced no objection to the removal of these accrediting bodies from the accrediting bodies recognized by the Commission. Effective November 9, 2022, CAP is no longer recognized by the Commission as an accrediting body. This change is specific to forensic analysis as that term is defined in the Code of Criminal Procedure. ExperTox, as well as other CAP and SAMHSA laboratories, are no longer accredited by the Commission. Because of this change in accreditation status, individuals who perform testing at ExperTox are no longer required to obtain a forensic analyst license. Should ExperTox's new scientific leadership seek to perform forensic analysis in criminal actions and achieve accreditation by a recognized accrediting body (currently ANAB or A2LA), the Commission will consider ExperTox's application for accreditation (and associated licensure) at that time.

AGREED AS TO FORM AND SUBSTANCE:

COUNSEL FOR TEXAS FORENSIC SCIENCE COMMISSION:

Lynn Garcia

LYNN GARCIA
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Texas Forensic Science Commission
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DR. ERNEST LYKISSA:

Dr. Ernest Lykissa
sailon@msn.com

EXHIBIT A

ExperTox®
drugs.alcohol.poisons.laboratory

1430 Center Street
Deer Park, TX 77536
Ph: 281-476-4600
Fax: 281-930-8532
www.expertox.com

Client: Arcpoint - Philadelphia
Addr: 233 S 6th St, Independence, Unit C-2
Philadelphia, PA 19106
Phone: (412) 370-8295
Contact:

First Name: [redacted]
Last Name: [redacted]
ID: XXX-XX-[redacted]

Test Name: DFSA w/o ETG
Profile: HFC9130
Media: Hair
Reason: Court Ordered

Specid: A308361
Acc #: 192750040
Collected: 9/30/2019 12:15 PM
Received: 10/2/2019 10:05 AM
Released: 10/24/2019 5:12 PM
Status: Complete

Drug/Test	Lab Result	Confirm Value	Screen Cutoff	Confirm Cutoff	Confirm Type
GAMMA-HYDROXY BUTYRIC ACID					
Gamma-Hydroxy Butyric Acid	**DETECTED**	**<50 pg/mg**		3000 pg/mg	GCMS
BARBITURATES	Non-Detected				GCMS
BENZODIAZEPINES	Non-Detected				LCMSMS
OPIOIDS	Non-Detected				LCMSMS
SEDATIVES/HYPNOTICS	Non-Detected				LCMSMS
OVER-THE-COUNTER DRUGS	Non-Detected				LCMSMS
MUSCLE RELAXANTS	Non-Detected				LCMSMS
HALLUCINOGENS					
Delta9-THC	**DETECTED**	**7.5 pg/mg**			LCMSMS

Test Comment:

Removed 0.625" of head hair, next 0.5" of head hair tested (Approx. growth timeframe 07/16/2019 - 08/13/2019, Inc Date 08/08/2019 and 08/09/2019)

Additional Findings:

Lidocaine detected at 3.9 pg/mg

***Baseline**: Removed 1.125" of head hair, next 0.5" of head hair tested (Approx. growth timeframe 06/18/2019 - 07/16/2019)

Baseline Findings:

Lidocaine Detected at 0.43 pg/mg

Delta9-THC Not Detected in Baseline

*Gamma-Hydroxy Butyric Acid result consistent with endogenous levels (naturally produced in the body)

Results are for CLINICAL USE ONLY, NOT FOR FORENSIC PURPOSES

This test is developed and validated by Expertox Laboratory. This is not a FDA approved test.

Result Reviewed by: Dr. Shaiju Vareed and Dr. Ernest Lykissa

The preceding result has been reviewed and is certified to be as reported. Brandon Cox (Certifying Scientist)

ExperTox Date Rape/GHB Hair Batch Log

Batch ID 10031908

ID/Accession #	Location / Description	Aliquot Date
7381665 A308361 192750040 Date Rape Panel/H	Remove 5/8 0.0120 test 1/2 0.0329 No etg	(looking for Lidocaine)
/061915 A261267 192760012 Date Rape Panel/H	Remove 1/8 0.0120 test 1/2 0.0477 0.0280 etg	0.0490 THR
7342310 A272524 192690004 Date Rape Panel/H	1 1/2 0.0120 ~~0.0450 etg~~ BR 0.0405 etg 0.0333 0.0220 THR	

Comments _____

ExperTox Date Rape/GHB Hair Batch Log

Batch ID Baseline DR

ID/Accession #	Location / Description	Aliquot Date
7061915 A261267 192760012 dr/h	7/22/19 Remove 7/8 0.0101 TO test 1/2 0.0325 8/12/19 0.0300-879	
8091632 A285407-2 192700006 dr/h	3/16/19 Remove 0.0120 to 2/8 4/16/19 test 1/2 0.0300	
7381665 A308361 192750040 dr/h	6/18/19 Remove 0.0200 To 1/8 7/16/19 Test 1/2	

Comments _____

ExperTox

drugs.alcohol.poisons.laboratory

1430 Center Street
Deer Park, TX 77536
1-877-XPERTOX • Ph: 281-476-4600 • Fax: 281-930
www.expertox.com

7381665 A308361

192750040 Date Rape Panel/H

FORENSIC CHAIN OF CUSTODY AND CONTROL

A308361

Step 1 TO BE COMPLETED BY COLLECTOR OR EMPLOYER REPRESENTATIVE SPECIMEN ID #:

Client Information:

Customer Info: _____ **ACCT: 7381665**

Arcpoint Labs (Philadelphia)
233 S. 6th Street Unit C-2
Philadelphia, PA 19106

Donor Identification Verified by: ☒ Photo ID ☐ Employer Representative

REASON FOR TEST: ☐ Pre-Employment ☐ Random ☐ Post Incident/Accident ☐ Periodic ☐ Return to Duty ☒ Court Order ☐ Other_____

Collection Site Address and phone numbers:

Arcpoint Labs (Philadelphia)
233 S. 6th Street Unit C-2
Philadelphia, PA 19106

Phone: (267)639-3342
Fax: (215)644-9542

Step 2: COMPLETED BY COLLECTOR:

Urine Specimen Collection: ☐ Single ☐ Split ☐ None ☐ Witnessed _____
Read Temperature within 4 minutes. Is temperature between 90°F and 100°F? ☐ Yes ☐ No (If No, please note in remarks)

Other Specimen Collection type: ☒ Hair ☐ Nails ☐ Oral Fluid ☐ Other Specify _____
Remarks: Also looking for LIDOCAINE

Step 3: COMPLETED BY DONOR:

Donor Name: [redacted] Donor SSN or ID# XXX-XX-[redacted]

I authorize the collection of this specimen for the purpose of a drug screen. I acknowledge that the specimen container was sealed with tamper-proof seal in my presence, and the information provided on this form and on the label affixed to the specimen container is correct. I authorize the laboratory to release the results of the test to the company identified on this form.

X [redacted] [redacted] [redacted] 09 30 19 [redacted]
Donor Signature | Donor Phone # | Initials | Date (Mo/Day/Yr) | DOB (Mo/Day/Yr)

Step 4: Collector affixes tamper seal to sample container. Donor initials and dates seal. Collector initials and dates seal.

Step 5: CHAIN OF CUSTODY INITIATED BY COLLECTOR AND COMPLETED BY LABORATORY

I certify that the specimen identified on this form is the specimen presented to me by the donor, that it bears the same specimen identification as set forth above, and that it has been collected, labeled and sealed in accordance with applicable forensic requirements.

X [signature] 12:15pm
Signature of Collector | Time of Collection

Sara Philemond 9/30/19
Print Collector's Name | Date (Mo/Day/Yr)

Received Lab:
X [signature]
Signature of Accessioner

[signature] 10.2.19
Print Name of Accessioner | Date (Mo/Day/Yr)

Test Menu to be completed as ordered by client or individual
___5 Panel Drug Test _____
___10 Panel Drug Test _____
___Alcohol ___EtG ___5 Panel Heavy Metals
___GC/MS Confirmation only for _____
___Unknown Drug Scan ___Unknown Chem/Tox
☒ Miscellaneous Test Date Rape

SPECIMEN BOTTLES RELEASED TO: FedEx
Delivery Service transporting specimen to Lab

Specimen Seal Intact: ☒ Yes ☐ No
Remark _____

Copy 1 - Must Accompany Specimen to Laboratory Copy 2 - for Collector Copy 3 - MRO/Employer Copy 4 - for Donor

PEEL

SPECIMEN ID NO. A — PLACE ON SPECIMEN CONTAINER OR ENVELOPE TO SEAL — SPECIMEN SEAL ___/___/___ Date (Mo/Day/Yr)
Collector's Initials _____ Donor's Initials _____

PEEL

A308361 SPECIMEN ID NO. (SPLIT) B — PLACE ON SPECIMEN CONTAINER OR ENVELOPE TO SEAL — SPECIMEN SEAL ___/___/___ Date (Mo/Day/Yr)
Collector's Initials _____ Donor's Initials _____

COPY 1 - EXPERTOX

From: Brenda Rios
Sent: Friday, October 25, 2019 10:12 AM
To: Reyna Sosa
Subject: FW: A308361

Brenda Rios
ExperTox
1430 Center St.
Deer Park, Tx 77536
Ph: 281-476-4600
Fa:281-930-8532

Sent from Mail for Windows 10

From: Brenda Rios
Sent: Friday, October 4, 2019 1:40:44 PM
To: kshroff@arcpointlabs.com <kshroff@arcpointlabs.com>
Subject: A308361

In regards to Specimen ID: A308361,

We only have enough sample to process the date rape portion of the panel.
The sample is insufficient for the ETG portion of the rape.
Would you like to continue testing for date rape drugs only at this time?
Only ETG will not be reported

Thank you,

Brenda Rios
ExperTox
1430 Center St.
Deer Park, Tx 77536
Ph: 281-476-4600
Fa:281-930-8532

Sent from Mail for Windows 10

From: Khushroo Shroff
Sent: Thursday, October 3, 2019 10:52 AM
To: Reyna Sosa
Subject: Re: A308361

Dear Reyna

Thank you so much for taking the time to explain the importance on focusing the testing to cover the specific dates of the incident.

The dates we would be specifically looking for are 8/8/2019 and 8/9/2019

Kindly go ahead and test appropriately to determine the presence of the drug substance(s) to cover that specific period.

Thank you
Khushroo

K.E.Shroff PhD

On Oct 2, 2019, at 2:49 PM, Reyna Sosa <rsosa@expertox.com> wrote:

> In regards to specimen A308361,
>
> For date rape hairs we go by incident dates,
> (in which the donor believes this has taken place.)
>
> By the incident date we test 2weeks before and 2 weeks after,
> giving this one month timeframe.
>
> If there isn't an incident date and is ongoing we can test the full length,
> this will be reported with however long the hair is that is collected.
>
> If it's recent, but not sure of the incident date we can test the standard time frame
> (as we do on regular hairs) 3 months, from the collection date.
>
> There is no difference in the charge of the time frame we use,
> its only charged per test you want.
>
> Please confirm how you would like this timeframe to be tested.
>
> Thank you,

ExperTox

CONFIRMATION BATCH LOG

ASSAY: DR/H BATCH: 093019O8, 10031908

	Intial/Date		Initial Date
Aliquot:	BC 10/16/19	Instrument: LCMS #1,1	BC 10/16/19
Extraction/Derivatization:		Check Wash Vials:	↓
Transfer to Autosampler Vials:		Vial Verification/Disposal:	BC 10/14/19
Placed in Sequence:		Carryover Verification:	↓

Sample #	Accession #	Sample Amount	Ion Ratios and R.T. (Y/N)	RESULTS
1	Neg	1mL	Y	
2	Low QC	50µL		
3	High QC	200µL		
4	19273002	0.0326g		DoxyC9+
5	19275004	0.0329g		
6	19276002	0.0477g		Diphen 35 EtG (14)
7	19269004	0.0333g		EtG (0.62)
8	10 Cal	20µL		
9	50 Cal	100µL		
10	250 Cal	500µL		
11	500 Cal	1mL		
12				
13				
14				
15				
16				
17				
18				
19				
20				

QC Results: ✓ Acceptable ____ Unacceptable

Reviewed by: BC Date: 10/17/19

Certified by: AT Date: 10/18/19

	LOT#	Exp
Cal 1	01032019TA	1/21
Cal 2		
Cal 3		
Cal 4		
QC 1		
QC 2		
QC 3		

Comments:

Dr. Ernest Dyllissa

This form approved by: Dr. Ernest Lyklissa Lab Director.

ExperTox

CONFIRMATION BATCH LOG

ASSAY: Fent/H BATCH: 1002104

	Intial/Date		Initial Date
Aliquot:	BC 10/6/19	Instrument: Lcms #1.1	BC 10/6/19
Extraction/Derivatization:	↓	Check Wash Vials:	↓
Transfer to Autosampler Vials:		Vial Verification/Disposal:	
Placed in Sequence:	↓	Carryover Verification:	

Sample #	Accession #	Sample Amount	Ion Ratios and R.T. (Y/N)	RESULTS
				~~GB~~
1	Neg	1mL		0 +BC
2	Low QC	50 µL		19 ~~73~~ BC
3	High QC	200 µL		93
4	19275002B	0.627		0
5	10 Cal	20 µL		OK
6	50 Cal	100 µL		↓
7	250 Cal	500 µL		
8	500 Cal	1mL		
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

QC Results: _____ Acceptable _____ Unacceptable

Reviewed by: _____ Date: _____

Certified by: _____ Date: _____

	LOT #	Exp
Cal 1	01032019TQ	1/21
Cal 2	↓	↓
Cal 3		
Cal 4		
QC1		
QC2		
QC3		

Comments: _____

Dr. Ernest Lykissa

This form approved by: Dr. Ernest Lykissa Lab Director.

Worklist Report

Agilent Technologies

	Sample Name	Sample Position	Method	Data File	Sample Type	Level Name	Inj Vol (µl)	Comment	Sample Group	Info.
80	500 cal bnz/u	Vial 97	Benzo-U-2016.m	100477.d	Sample		As Method			
81	1000 cal bnz/u	Vial 98	Benzo-U-2016.m	100478.d	Sample		As Method			
82	2000 cal bnz/u	Vial 99	Benzo-U-2016.m	100479.d	Sample		As Method			
83	neg bnz/u	Vial 91	Benzo-U-2016.m	100480.d	Sample		As Method			
84	b	Vial 1	Benzo-U-2016.m	100481.d	Sample		As Method			
85	b	Vial 1	MDN-U-2015.m	100510.d	Sample		As Method			
86	neg mdn/m	Vial 21	MDN-U-2015.m	100511.d	Sample		As Method			
87	mix qc mdn/m	Vial 22	MDN-U-2015.m	100512.d	Sample		As Method			
88	b	Vial 1	MDN-U-2015.m	100513.d	Sample		As Method			
89	192780001 mdn/m	Vial 23	MDN-U-2015.m	100514.d	Sample		As Method			
90	b	Vial 1	MDN-U-2015.m	100515.d	Sample		As Method			
91	100 cal mdn/m	Vial 24	MDN-U-2015.m	100516.d	Sample		As Method			
92	500 cal mdn/m	Vial 25	MDN-U-2015.m	100517.d	Sample		As Method			
93	1000 cal mdn/m	Vial 26	MDN-U-2015.m	100518.d	Sample		As Method			
94	2000 cal mdn/m	Vial 27	MDN-U-2015.m	100519.d	Sample		As Method			
95	neg mdn/m	Vial 21	MDN-U-2015.m	100520.d	Sample		As Method			
96	b	Vial 1	MDN-U-2015.m	100521.d	Sample		As Method			
97	b	Vial 1	Amp-U-2017.m	100610.d	Sample		As Method			
98	neg amp/m	Vial 31	Amp-U-2017.m	100611.d	Sample		As Method			
99	c4 qc amp/m	Vial 32	Amp-U-2017.m	100612.d	Sample		As Method			
100	mix qc amp/m	Vial 33	Amp-U-2017.m	100613.d	Sample		As Method			
101	b	Vial 1	Amp-U-2017.m	100614.d	Sample		As Method			
102	192780005 amp/m	Vial 34	Amp-U-2017.m	100615.d	Sample		As Method			
103	b	Vial 1	Amp-U-2017.m	100616.d	Sample		As Method			
104	100 cal amp/m	Vial 35	Amp-U-2017.m	100617.d	Sample		As Method			
105	500 cal amp/m	Vial 36	Amp-U-2017.m	100618.d	Sample		As Method			
106	1000 cal amp/m	Vial 37	Amp-U-2017.m	100619.d	Sample		As Method			
107	2000 cal amp/m	Vial 38	Amp-U-2017.m	100620.d	Sample		As Method			
108	neg amp/m	Vial 31	Amp-U-2017.m	100621.d	Sample		As Method			
109	b	Vial 1	Amp-U-2017.m	100622.d	Sample		As Method			
110	b	Vial 1	DFSA-DMRM-100mm-Test-002.m	100623.d	Sample		As Method			
111	neg DFSA/H	Vial 41	DFSA-DMRM-100mm-Test-002.m	100624.d	Sample		As Method			
112	low qc DFSA/H	Vial 42	DFSA-DMRM-100mm-Test-002.m	100625.d	Sample		As Method			
113	high qc DFSA/H	Vial 43	DFSA-DMRM-100mm-Test-002.m	100626.d	Sample		As Method			
114	b	Vial 1	DFSA-DMRM-100mm-Test-002.m	100627.d	Sample		As Method			
115	192730021 dr/h	Vial 44	DFSA-DMRM-100mm-Test-002.m	100628.d	Sample		As Method			
116	192750040 dr/h	Vial 45	DFSA-DMRM-100mm-Test-002.m	100629.d	Sample		As Method			

Worklist Report

Agilent Technologies

	Sample Name	Sample Position	Method	Data File	Sample Type	Level Name	Inj Vol (µl)	Comment	Sample Group	Info.
117	192760012 dr/h	Vial 46	DFSA-DMRM-100mm-Test-002.m	100630.d	Sample		As Method			
118	192690004 dr/h	Vial 47	DFSA-DMRM-100mm-Test-002.m	100631.d	Sample		As Method			
119	192750012 ket/h	Vial 48	DFSA-DMRM-100mm-Test-002.m	100632.d	Sample		As Method			
120	192750028 fent/h	Vial 49	DFSA-DMRM-100mm-Test-002.m	100633.d	Sample		As Method			
121	192750031 17p/h	Vial 50	DFSA-DMRM-100mm-Test-002.m	100634.d	Sample		As Method			
122	192760018 17p/h	Vial 61	DFSA-DMRM-100mm-Test-002.m	100635.d	Sample		As Method			
123	b	Vial 1	DFSA-DMRM-100mm-Test-002.m	100636.d	Sample		As Method			
124	10 cal DFSA/H	Vial 62	DFSA-DMRM-100mm-Test-002.m	100637.d	Sample		As Method			
125	50 cal DFSA/H	Vial 63	DFSA-DMRM-100mm-Test-002.m	100638.d	Sample		As Method			
126	250 cal DFSA/H	Vial 64	DFSA-DMRM-100mm-Test-002.m	100639.d	Sample		As Method			
127	500 cal DFSA/H	Vial 65	DFSA-DMRM-100mm-Test-002.m	100640.d	Sample		As Method			
128	neg DFSA/H	Vial 41	DFSA-DMRM-100mm-Test-002.m	100641.d	Sample		As Method			
129	b	Vial 1	DFSA-DMRM-100mm-Test-002.m	100642.d	Sample		As Method			
130	SCP_InstrumentStandby() {MH_Acq_Scripts.exe }									

ExperTox

CONFIRMATION BATCH LOG

ASSAY: GHB/H BATCH: 093019 08 ; 10031908

	Intial/Date		Initial Date
Aliquot:	BC 10/6/19	Instrument:	BC 10/6/19
Extraction/Derivatization:	↓	Check Wash Vials:	↓
Transfer to Autosampler Vials:	-	Vial Verification/Disposal:	BC 10/14/19
Placed in Sequence:	↓	Carryover Verification:	↓

Sample #	Accession #	Sample Amount	Ion Ratios and R.T. (Y/N)	RESULTS
1	Neg	1 mL	Y	0
2	Low QC	50 µL	↓	75
3	High QC	200 µL		391
4	19273002 1	0.0326 g		0
5	19275004 0	0.0329 g		↓
6	19276001 2	0.0477 g		
7	19269000 4	0.0333 g		
8	Cal	100 µL	↓	ok
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

QC Results: J Acceptable ____ Unacceptable

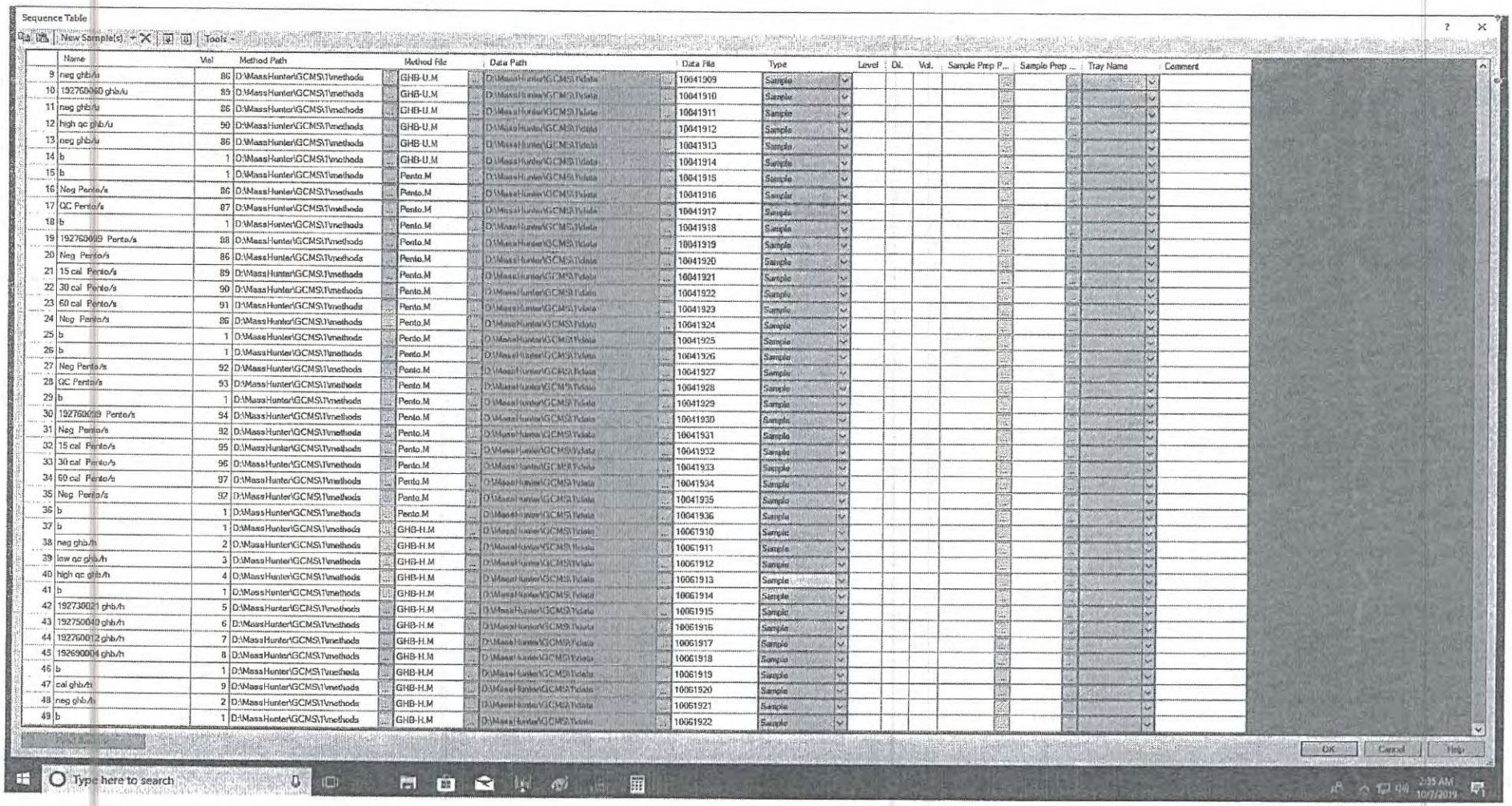
Reviewed by: BC Date: 10/14/19

Certified by: CL Date: 10/14/19

	LOT #	Exp
Cal 1	073019BC1	7/21
Cal 2		
Cal 3		
Cal 4		
QC 1	073019BC1	7/21
QC 2	↓	↓
QC 3		

Comments: _____

This form approved by: Dr. Ernest Lykissa Lab Director.


Sequence Table
New Sample(s)
Tools
Name
Vial
Method Path
Method File
Data Path
Data File
Type
Level
Dil.
Vol.
Sample Prep P...
Sample Prep ...
Tray Name
Comment
9 neg ghb/u 86 D:\MassHunter\GCMS\1\methods GHB-U.M 10041909 Sample
10 192760060 ghb/u 85 D:\MassHunter\GCMS\1\methods GHB-U.M 10041910 Sample
11 neg ghb/u 86 D:\MassHunter\GCMS\1\methods GHB-U.M 10041911 Sample
12 high qc ghb/u 90 D:\MassHunter\GCMS\1\methods GHB-U.M 10041912 Sample
13 neg ghb/u 86 D:\MassHunter\GCMS\1\methods GHB-U.M 10041913 Sample
14 b 1 D:\MassHunter\GCMS\1\methods GHB-U.M 10041914 Sample
15 b 1 D:\MassHunter\GCMS\1\methods Pento.M 10041915 Sample
16 Neg Pento/s 86 D:\MassHunter\GCMS\1\methods Pento.M 10041916 Sample
17 QC Pento/s 87 D:\MassHunter\GCMS\1\methods Pento.M 10041917 Sample
18 b 1 D:\MassHunter\GCMS\1\methods Pento.M 10041918 Sample
19 192760069 Pento/s 88 D:\MassHunter\GCMS\1\methods Pento.M 10041919 Sample
20 Neg Pento/s 86 D:\MassHunter\GCMS\1\methods Pento.M 10041920 Sample
21 15 cal Pento/s 89 D:\MassHunter\GCMS\1\methods Pento.M 10041921 Sample
22 30 cal Pento/s 90 D:\MassHunter\GCMS\1\methods Pento.M 10041922 Sample
23 60 cal Pento/s 91 D:\MassHunter\GCMS\1\methods Pento.M 10041923 Sample
24 Neg Pento/s 86 D:\MassHunter\GCMS\1\methods Pento.M 10041924 Sample
25 b 1 D:\MassHunter\GCMS\1\methods Pento.M 10041925 Sample
26 b 1 D:\MassHunter\GCMS\1\methods Pento.M 10041926 Sample
27 Neg Pento/s 92 D:\MassHunter\GCMS\1\methods Pento.M 10041927 Sample
28 QC Pento/s 93 D:\MassHunter\GCMS\1\methods Pento.M 10041928 Sample
29 b 1 D:\MassHunter\GCMS\1\methods Pento.M 10041929 Sample
30 192760069 Pento/s 94 D:\MassHunter\GCMS\1\methods Pento.M 10041930 Sample
31 Neg Pento/s 92 D:\MassHunter\GCMS\1\methods Pento.M 10041931 Sample
32 15 cal Pento/s 95 D:\MassHunter\GCMS\1\methods Pento.M 10041932 Sample
33 30 cal Pento/s 96 D:\MassHunter\GCMS\1\methods Pento.M 10041933 Sample
34 60 cal Pento/s 97 D:\MassHunter\GCMS\1\methods Pento.M 10041934 Sample
35 Neg Pento/s 92 D:\MassHunter\GCMS\1\methods Pento.M 10041935 Sample
36 b 1 D:\MassHunter\GCMS\1\methods Pento.M 10041936 Sample
37 b 1 D:\MassHunter\GCMS\1\methods GHB-H.M 10061910 Sample
38 neg ghb/h 2 D:\MassHunter\GCMS\1\methods GHB-H.M 10061911 Sample
39 low qc ghb/h 3 D:\MassHunter\GCMS\1\methods GHB-H.M 10061912 Sample
40 high qc ghb/h 4 D:\MassHunter\GCMS\1\methods GHB-H.M 10061913 Sample
41 b 1 D:\MassHunter\GCMS\1\methods GHB-H.M 10061914 Sample
42 192730021 ghb/h 5 D:\MassHunter\GCMS\1\methods GHB-H.M 10061915 Sample
43 192750040 ghb/h 6 D:\MassHunter\GCMS\1\methods GHB-H.M 10061916 Sample
44 192760012 ghb/h 7 D:\MassHunter\GCMS\1\methods GHB-H.M 10061917 Sample
45 192690004 ghb/h 8 D:\MassHunter\GCMS\1\methods GHB-H.M 10061918 Sample
46 b 1 D:\MassHunter\GCMS\1\methods GHB-H.M 10061919 Sample
47 cal ghb/h 9 D:\MassHunter\GCMS\1\methods GHB-H.M 10061920 Sample
48 neg ghb/h 2 D:\MassHunter\GCMS\1\methods GHB-H.M 10061921 Sample
49 b 1 D:\MassHunter\GCMS\1\methods GHB-H.M 10061922 Sample
OK
Cancel
Help
Type here to search
2:35 AM
10/7/2019

ExperTox

CONFIRMATION BATCH LOG

ASSAY : XOPI/H

BATCH : 10031904,08, 10041904,08, 10071904

	Intial/Date		Initial/Date
Aliquot:	MP 10·8·19	Instrument: LC 1.1	MP 10·8·19
Extraction/Derivatization:		Check Wash Vials:	
Transfer to Autosampler Vials:		Vial Verification/Disposal:	CL 10/9/19
Placed in Sequence:		Carryover Verification:	

Sample #	Accession #	Sample Amount	Ion Ratios and R.T. (Y/N)	OM	OC	TRAM	MEP
1	neg	—				0	0
2	low QC	75µL				148	143
3	high QC	150µL				294	311
T-49 4	192800070	0.0220 0.0454				0	0
— 0·12 5	192800106	0.0220 0.0454					
T-51 6	192800114	0.0185 0.0540					
0·2 T-62 7	192700008	0.0200 0.05					
T-55 8	192700096	0.0180 0.0555					
T-62 9	192770020	0.0185 0.0540					
T-61 10	192770046	0.0215 0.0465					
T-56 11	192770047	0.0180 0.0555					
~~0·17~~ T-50 12	~~192800117~~	~~0.0180~~					
T-44 13	192690004 DR	0.0220 0.0454					
T-55 14	192700012 DR	0.0190 0.0526					
T-55 15	192750048 DR	0.0329 0.0303					
T-62 16	192770030 DR	0.0428 0.0233					
T-55 17	192770031 DR	0.0314 0.0318					
T-58 18	192770058 DUP	0.0367 0.0272					
19	100 cal	50µL				ok	ok
20	200 cal	100µL				↓	↓

-54/9.

QC Results: ___ Acceptable ___ Unacceptable

Reviewed by: CL Date: 10/9/19

Certified by: KH Date: 10/10/19

	LOT #	Exp Date
Cal 1		
Cal 2		
Cal 3		
Cal 4		
QC 1		
QC 2		
QC 3		

Comments: ~~Oxy out~~ OM and OC flagged.

Dr. Ernest Lykissa

This form approved by: Dr. Ernest Lykissa Lab Director.

EXPERTOX

CONFIRMATION BATCH LOG - Continuation

ASSAY: XOPi | H

BATCH: _____

#	Accession #	Sample Amount	IR & RT	OM QC Results	Tam	Mep
21	1000 cal	500µL			OK	OK
22	2000 cal	1mL			↓	↓
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						
34						
35						
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42						
43						
44						
45						
46						
47						
48						
49						
50						

This form approved by Dr. Ernest D. Lykissa Lab Director Dr. Ernest D. Lykissa,

Worklist Report

BC 10/8/19

Agilent Technologies

	Sample Name	Sample Position	Method	Data File	Sample Type	Level Name	Inj Vol (µl)	Comment	Sample Group	Info.
50	b	Vial 1	6-AM-U-2016.m	10081904.d	Sample		As Method			
51	192800144 6am/m	Vial 5	6-AM-U-2016.m	10081905.d	Sample		As Method			
52	b	Vial 1	6-AM-U-2016.m	10081906.d	Sample		As Method			
53	5 cal 6am/m	Vial 6	6-AM-U-2016.m	10081907.d	Sample		As Method			
54	25 cal 6am/m	Vial 7	6-AM-U-2016.m	10081908.d	Sample		As Method			
55	50 cal 6am/m	Vial 8	6-AM-U-2016.m	10081909.d	Sample		As Method			
56	100 cal 6am/m	Vial 9	6-AM-U-2016.m	10081910.d	Sample		As Method			
57	neg 6am/m	Vial 3	6-AM-U-2016.m	10081911.d	Sample		As Method			
58	b	Vial 1	6-AM-U-2016.m	10081912.d	Sample		As Method			
59	b	Vial 1	PPX-H.m	100845.d	Sample		As Method			
60	neg ppx/h	Vial 91	PPX-H.m	100846.d	Sample		As Method			
61	low qc ppx/h	Vial 92	PPX-H.m	100847.d	Sample		As Method			
62	high qc ppx/h	Vial 93	PPX-H.m	100848.d	Sample		As Method			
63	192800117 ppx/h	Vial 84	PPX-H.m	100849.d	Sample		As Method			
64	neg ppx/h	Vial 91	PPX-H.m	100850.d	Sample		As Method			
65	100cal ppx/h	Vial 94	PPX-H.m	100851.d	Sample		As Method			
66	200cal ppx/h	Vial 95	PPX-H.m	100852.d	Sample		As Method			
67	800cal ppx/h	Vial 96	PPX-H.m	100853.d	Sample		As Method			
68	2000cal ppx/h	Vial 97	PPX-H.m	100854.d	Sample		As Method			
69	neg ppx/h	Vial 91	PPX-H.m	100855.d	Sample		As Method			
70	b	Vial 1	PPX-H.m	100856.d	Sample		As Method			
71	b	Vial 1	Extended-OPI-H-2017.m	100857.d	Sample		As Method			
72	neg xopi/h	Vial 11	Extended-OPI-H-2017.m	100858.d	Sample		As Method			
73	low qc xopi/h	Vial 12	Extended-OPI-H-2017.m	100859.d	Sample		As Method			
74	high qc xopi/h	Vial 13	Extended-OPI-H-2017.m	100860.d	Sample		As Method			
75	b	Vial 1	Extended-OPI-H-2017.m	100861.d	Sample		As Method			
76	192800070 xopi/h	Vial 14	Extended-OPI-H-2017.m	100862.d	Sample		As Method			
77	192800106 xopi/h	Vial 15	Extended-OPI-H-2017.m	100863.d	Sample		As Method			
78	192800114 xopi/h	Vial 16	Extended-OPI-H-2017.m	100864.d	Sample		As Method			
79	192760008 xopi/h	Vial 17	Extended-OPI-H-2017.m	100865.d	Sample		As Method			
80	192700096 xopi/h	Vial 18	Extended-OPI-H-2017.m	100866.d	Sample		As Method			
81	192770020 xopi/h	Vial 19	Extended-OPI-H-2017.m	100867.d	Sample		As Method			
82	192770046 xopi/h	Vial 20	Extended-OPI-H-2017.m	100868.d	Sample		As Method			
83	192770047 xopi/h	Vial 21	Extended-OPI-H-2017.m	100869.d	Sample		As Method			

Worklist Report

Agilent Technologies

	Sample Name	Sample Position	Method	Data File	Sample Type	Level Name	Inj Vol (µl)	Comment	Sample Group	Info.
84	192690004 xopi/h	Vial 22	Extended-OPI-H-2017.m	100870.d	Sample		As Method			
85	192760012 xopi/h	Vial 23	Extended-OPI-H-2017.m	100871.d	Sample		As Method			
86	192750040 xopi/h	Vial 24	Extended-OPI-H-2017.m	100872.d	Sample		As Method			
87	192770030 xopi/h	Vial 25	Extended-OPI-H-2017.m	100873.d	Sample		As Method			
88	192770031 xopi/h	Vial 26	Extended-OPI-H-2017.m	100874.d	Sample		As Method			
89	192770058 xopi/h	Vial 27	Extended-OPI-H-2017.m	100875.d	Sample		As Method			
90	b	Vial 1	Extended-OPI-H-2017.m	100876.d	Sample		As Method			
91	100 cal xopi/h	Vial 28	Extended-OPI-H-2017.m	100877.d	Sample		As Method			
92	200 cal xopi/h	Vial 29	Extended-OPI-H-2017.m	100878.d	Sample		As Method			
93	1000 cal xopi/h	Vial 30	Extended-OPI-H-2017.m	100879.d	Sample		As Method			
94	2000 cal xopi/h	Vial 31	Extended-OPI-H-2017.m	100880.d	Sample		As Method			
95	neg xopi/h	Vial 11	Extended-OPI-H-2017.m	100881.d	Sample		As Method			
96	b	Vial 1	Extended-OPI-H-2017.m	100882.d	Sample		As Method			
97	SCP_InstrumentStandby() {MH_Acq_Scripts.exe}									

Worklist Report

Agilent Technologies

	Sample Name	Sample Position	Method	Data File	Sample Type	Level Name	Inj Vol (µl)	Comment	Sample Group	Info.
118	c4qc amp/m	Vial 52	Amp-U-2017.m	1008104.d	Sample		As Method			
119	mix qc amp/m	Vial 53	Amp-U-2017.m	1008105.d	Sample		As Method			
120	b	Vial 1	Amp-U-2017.m	1008106.d	Sample		As Method			
121	192810068 amp/m	Vial 54	Amp-U-2017.m	1008107.d	Sample		As Method			
122	neg amp/m	Vial 51	Amp-U-2017.m	1008108.d	Sample		As Method			
123	100 cal amp/m	Vial 55	Amp-U-2017.m	1008109.d	Sample		As Method			
124	500 cal amp/m	Vial 56	Amp-U-2017.m	1008110.d	Sample		As Method			
125	1000 cal amp/m	Vial 57	Amp-U-2017.m	1008111.d	Sample		As Method			
126	2000 cal amp/m	Vial 58	Amp-U-2017.m	1008112.d	Sample		As Method			
127	neg amp/m	Vial 51	Amp-U-2017.m	1008113.d	Sample		As Method			
128	b	Vial 1	Amp-U-2017.m	1008114r.d	Sample		As Method			
129	SCP_InstrumentStandby() {MH_Acq_Scripts.exe}									
130	b	Vial 1	Bath Salts-U-2017-Test.m	1008115.d	Sample		As Method			
131	SCDD-4	Vial 3	Bath Salts-U-2017-Test.m	1008116.d	Sample		As Method			
132	b	Vial 1	Bath Salts-U-2017-Test.m	1008117.d	Sample		As Method			
133	SCDD-5	Vial 4	Bath Salts-U-2017-Test.m	1008118.d	Sample		As Method			
134	b	Vial 1	Bath Salts-U-2017-Test.m	1008119.d	Sample		As Method			
135	SCDD-6	Vial 5	Bath Salts-U-2017-Test.m	1008120.d	Sample		As Method			
136	b	Vial 1	Bath Salts-U-2017-Test.m	1008121.d	Sample		As Method			
137	b	Vial 1	Bath Salts-U-2017-Test.m	1008122.d	Sample		As Method			
138	Bath Salts STD	Vial 6	Bath Salts-U-2017-Test.m	1008123.d	Sample		As Method			
139	b	Vial 1	Bath Salts-U-2017-Test.m	1008124.d	Sample		As Method			
140	b	Vial 1	Bath Salts-U-2017-Test.m	1008125.d	Sample		As Method			
141	b	Vial 1	Bath Salts-U-2017-Test.m	1008126r.d	Sample		As Method			
142	SCP_InstrumentStandby() {MH_Acq_Scripts.exe}									
143	b	Vial 1	Extended-OPI-H-2017.m	1008127.d	Sample		As Method			
144	192800117 xopi/h	Vial 11	Extended-OPI-H-2017.m	1008128.d	Sample		As Method			
145	b	Vial 1	Extended-OPI-H-2017.m	1008129.d	Sample		As Method			

Expertox
Logins

	Domain		Lims		
Alex	aihde	laboratory	aihde	laboratory	
Kevin	khowington	ELab01	khowington	Password	Reset
Chris	chopkins	Expertox	chopkins	Expertox	
Brandon	bcox	ELab02	bcox	Shadow68	Reset
Rion	rgwawenis	ELab03	rgwawenis	e201904t	Reset
Angelica	amartinez	Blue!8	amartinez	Blue!8	
Jasmine	jacox	Red!Sea12	jacox	Red!Sea12	
Nicholas	nvargas	ELab04	nvargas	Grey!Sky12	Reset
Alondra	atorres	Blue!Star64	atorres	Blue!Star64	
Addie	asmith	Blue64Angel	asmith	Blue64Angel	

ExperTox

CONFIRMATION BATCH LOG

ASSAY: Lidocaine /H BATCH: 1031908

	Initial/Date		Initial Date
Aliquot:	BC 10/21/19	Instrument: LCMS #4	BC 10/21/19
Extraction/Derivatization:	↓	Check Wash Vials:	↓
Transfer to Autosampler Vials:	↓	Vial Verification/Disposal:	BC 10/23/19
Placed in Sequence:	↓	Carryover Verification:	↓

Sample #	Accession #	Sample Amount	Ion Ratios and R.T. (Y/N)	RESULTS
1	Neg	1mL	Y	0
2 (Base)	19275040	0.02009		0.43
3	Low Cal	100µL		OK
4	High Cal	1mL	↓	NA
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

QC Results: V Acceptable _____ Unacceptable

Reviewed by: BC Date: 10/23/19

Certified by: CL Date: 10/25/19

	LOT#	Exp
Cal 1	015115V	10/21
Cal 2		
Cal 3		
Cal 4		
QC1		
QC2		
QC3		

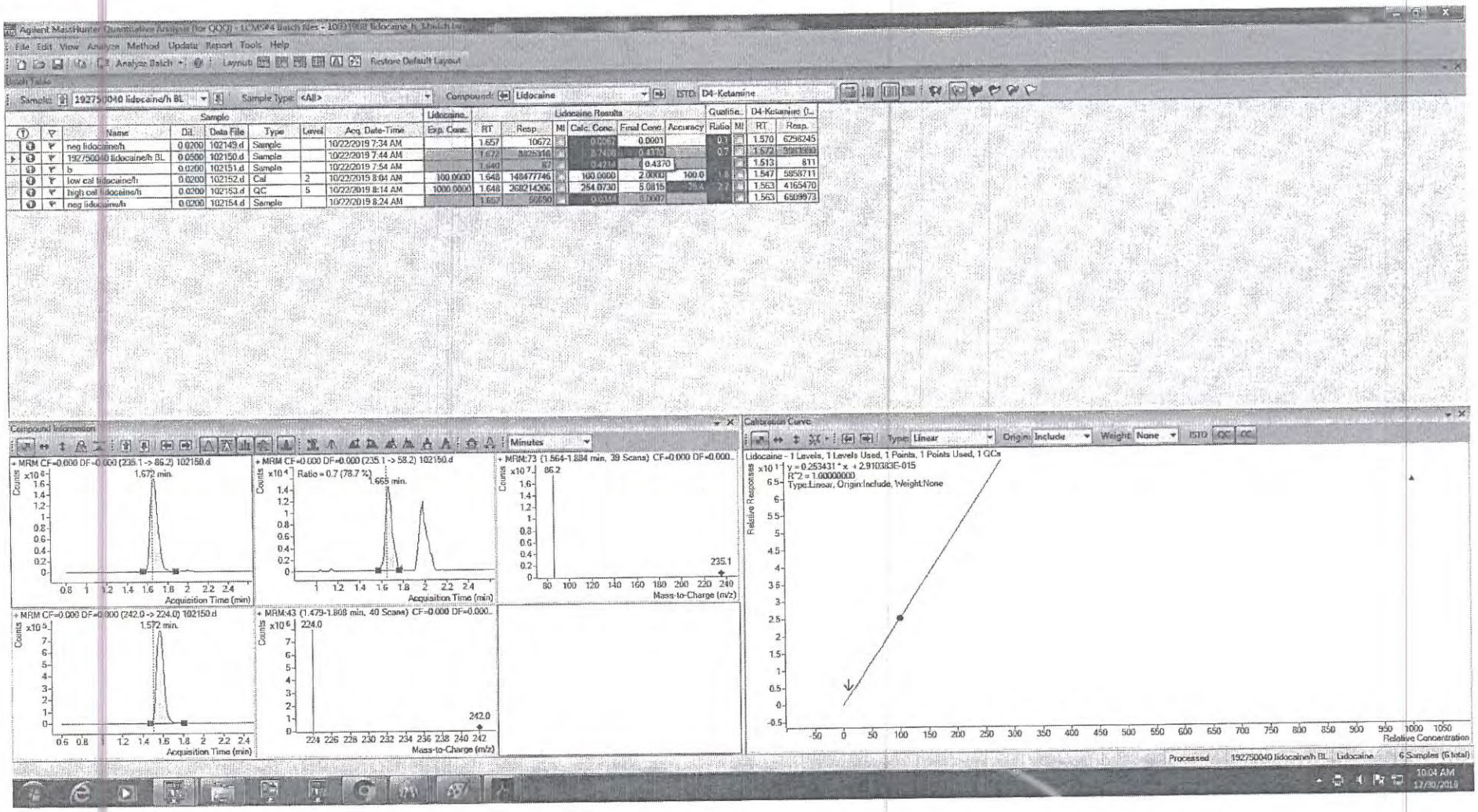
Comments: _____

This form approved by: Dr. Ernest Lykissa Lab Director.

Worklist Report

Agilent Technologies

	Sample Name	Sample Position	Method	Data File	Sample Type	Level Name	Inj Vol (µl)	Comment	Sample Group	Info.
46	4 cal thc/s	P1-B6	D-MRM-THC-COOH.m	102143.d	Sample		As Method			
47	25 cal thc/s	P1-B7	D-MRM-THC-COOH.m	102144.d	Sample		As Method			
48	100 cal thc/s	P1-B8	D-MRM-THC-COOH.m	102145.d	Sample		As Method			
49	neg thc/s	P1-B1	D-MRM-THC-COOH.m	102146.d	Sample		As Method			
50	b	P2-A1	D-MRM-THC-COOH.m	102147r.d	Sample		As Method			
51	b	P2-A1	MPMP-2018.m	102148.d	Sample		As Method			
52	neg lidocaine/h	P2-C1	MPMP-2018.m	102149.d	Sample		As Method			
53	192750040 lidocaine/h BL	P2-C2	MPMP-2018.m	102150.d	Sample		As Method			
54	b	P2-A1	MPMP-2018.m	102151.d	Sample		As Method			
55	low cal lidocaine/h	P2-C3	MPMP-2018.m	102152.d	Sample		As Method			
56	high cal lidocaine/h	P2-C4	MPMP-2018.m	102153.d	Sample		As Method			
57	neg lidocaine/h	P2-C1	MPMP-2018.m	102154.d	Sample		As Method			
58	b	P2-A1	MPMP-2018.m	102155.d	Sample		As Method			
59	SCP_InstrumentStandby() {MH_Acq_Scripts.exe }									


Agilent MassHunter Quantitative Analysis (for QQQ) - LCMS#4 batch files - 10031908 lidocaine_h_Batch.bin
File Edit View Analyze Method Update Report Tools Help
Analyze Batch
Layouts
Restore Default Layout
Batch Table
Sample: 192750040 lidocaine/h BL
Sample Type: <All>
Compound: Lidocaine
ISTD: D4-Ketamine
Sample
Lidocaine
Lidocaine Results
Qualifie...
D4-Ketamine (I...
Name
Dil.
Data File
Type
Level
Acq. Date-Time
Exp. Conc.
RT
Resp.
MI
Calc. Conc.
Final Conc.
Accuracy
Ratio
neg lidocaine/h
192750040 lidocaine/h BL
b
low cal lidocaine/h
high cal lidocaine/h
neg lidocaine/h
Compound Information
Minutes
+ MRM CF=0.000 DF=0.000 (235.1 -> 86.2) 102150.d
1.572 min.
+ MRM CF=0.000 DF=0.000 (235.1 -> 58.2) 102150.d
Ratio = 0.7 (78.7 %)
1.565 min.
+ MRM:73 (1.564-1.584 min, 39 Scans) CF=0.000 DF=0.000...
86.2
235.1
Mass-to-Charge (m/z)
+ MRM CF=0.000 DF=0.000 (242.0 -> 224.0) 102150.d
1.572 min.
+ MRM:43 (1.479-1.868 min, 40 Scans) CF=0.000 DF=0.000...
224.0
242.0
Counts
Acquisition Time (min)
Calibration Curve
Type: Linear
Origin: Include
Weight: None
ISTD
QC
Lidocaine - 1 Levels, 1 Levels Used, 1 Points, 1 Points Used, 1 QCs
y = 0.253431 * x + 2.910383E-015
R^2 = 1.00000000
Type:Linear, Origin:Include, Weight:None
Relative Response
Relative Concentration
Processed
192750040 lidocaine/h BL
Lidocaine
6 Samples (6 total)
10:04 AM
12/30/2019

Melissa Peña

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10031904
01 AAA. Sample Rack
Created 10/4/2019 6:08:52
Last Access 10/4/2019 6:08:52
Rows 6, Columns 16

1 A01 NC1
2 B01 NC2
3 C01 LPC1
4 D01 LPC2
5 E01 HPC1
6 F01 HPC2
7 G01 192760033-5P
8 H01 192760064-10P
9 I01 192760065-10P
10 J01 192760066-10P
11 K01 192760067-10P
12 L01 192750017-5P
13 M01 192750018-5P
14 N01 192750025-10P
15 O01 192750044-10P THC (84)
16 P01 192750045-10P THC (79)
17 A02 192750019-5P
18 B02 192750021-5P
19 C02 192700095-10P
20 D02 192760009-10P
21 E02 192760034-10P Meth (54)
22 F02 192760035-10P
23 G02 192760054-10P Amp (32) Meth (14)
24 H02 192760056-10P THC (47)
25 I02 192760020-5P THC (20)
26 J02 192760026-5P Opi (44) Amp (63) Meth (23)
27 K02 192760027-5P THC (48)
28 L02 192760028-5P Meth (48)
29 M02 192760029-5P THC (84) Amp (72)
30 N02 192760030-5P Amp (72)
31 O02 192760031-12P Amp (74)
32 P02 192760008-12P Amp (71) Meth (34)
33 A03 192760010-10P THC (43) Coc (48) Meth (58)
34 B03 192760011-10P THC (84)
35 C03 192760016-10P THC (80)
36 D03 192760017-5P THC (85)
37 E03 192760018-17P THC (74) Coc (3) Opi (39)
38 F03 192760022-5P THC (78)
39 G03 192760037-6P LOD THC (84) Amp (85)
40 H03 192760039-6P LOD THC (79) Meth (36)
41 I03 192760041-5P LOD THC (81) Opi (58) Amp (65) Meth (39)
42 J03 192760042-6P LOD THC (90) Coc (19) Opi (53) Bnz (72) Meth (73)
43 K03 192760045-6P LOD THC (90) Amp (77) Meth (41)
44 L03 192760046-5P LOD THC (53) Coc (17) Amp (84) Meth (47)
45 M03 192690004-DR THC (90) Coc (58) Amp (75)
46 N03 192760012-DR THC (90) Amp (72)
47 O03 192750040-DR THC (82) Amp (74)
48 P03 QC

THC (84-92) 21 Coc (59-70) 5 Amp (70-84) 13
Opi (55-66) 4 Meth (57-68) 11

1 Strip method names
2 Pipetting status
3 Difference data
4 Difference data - Mean
5 Difference data - Variation coefficient
6 binding
7 binding - Mean
8 Sample ID 1
9 Cutoff results

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MP (84-92)

	1	2	3	4	5	6	7	8	9
A1	THC	OK	1.79	1.84	3.843	97.283	100	NC1	
B1	THC	OK	1.89			102.72		NC2	
C1	THC	OK	1.558	1.562	0.36215	84.674	84.891	LPC1	
D1	THC	OK	1.566			85.109		LPC2	
E1	THC	OK	1.24	1.2945	5.954	67.391	70.353	HPC1	
F1	THC	OK	1.349			73.315		HPC2	
G1	THC	OK	1.888	1.888		102.61	102.61	192760033-5P	Negative
H1	THC	OK	1.854	1.854		100.76	100.76	192760064-10	Negative
A2	THC	OK	1.772	1.772		96.304	96.304	192760065-10	Negative
B2	THC	OK	1.634	1.634		88.804	88.804	192760066-10	Negative
C2	THC	OK	1.803	1.803		97.989	97.989	192760067-10	Negative
D2	THC	OK	1.936	1.936		105.22	105.22	192750017-5P	Negative
E2	THC	OK	1.65	1.65		89.674	89.674	192750018-5P	Negative
F2	THC	OK	1.755	1.755		95.38	95.38	192750025-10	Negative
G2	THC	OK	1.552	1.552		84.348	84.348	192750044-10	Detected
H2	THC	OK	1.463	1.463		79.511	79.511	192750045-10	Detected
A3	THC	OK	1.775	1.775		96.467	96.467	192750019-5P	Negative
B3	THC	OK	1.781	1.781		96.793	96.793	192750021-5P	Negative
C3	THC	OK	1.776	1.776		96.522	96.522	192700095-10	Negative
D3	THC	OK	1.627	1.627		88.424	88.424	192760009-10	Negative
E3	THC	OK	1.755	1.755		95.38	95.38	192760034-10	Negative
F3	THC	OK	1.702	1.702		92.5	92.5	192760035-10	Negative
G3	THC	OK	1.798	1.798		97.717	97.717	192760054-10	Negative
H3	THC	OK	1.248	1.248		67.826	67.826	192760056-10	Positive
A4	THC	OK	1.564	1.564		85	85	192760020-5P	Negative

1 Strip method names

2 Pipetting status

3 Difference data

4 Difference data - Mean

5 Difference data - Variation coefficient

6 binding

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7 binding - Mean

8 Sample ID 1

MP (84-92)

9 Cutoff results

	1	2	3	4	5	6	7	8	9
B4	THC	OK	1.798	1.798		97.717	97.717	192760026-5P	Negative
C4	THC	OK	0.895	0.895		48.641	48.641	192760027-5P	Positive
D4	THC	OK	1.776	1.776		96.522	96.522	192760028-5P	Negative
E4	THC	OK	1.559	1.559		84.728	84.728	192760029-5P	Detected
F4	THC	OK	1.841	1.841		100.05	100.05	192760030-5P	Negative
G4	THC	OK	1.797	1.797		97.663	97.663	192760031-12	Negative
H4	THC	OK	1.921	1.921		104.4	104.4	192760008-12	Negative
A5	THC	OK	0.805	0.805		43.75	43.75	192760010-10	Positive
B5	THC	OK	1.563	1.563		84.946	84.946	192760011-10	Negative
C5	THC	OK	1.489	1.489		80.924	80.924	192760016-10	Detected
D5	THC	OK	1.537	1.537		83.533	83.533	192760017-5P	Detected
E5	THC	OK	1.372	1.372		74.565	74.565	192760018-17	Detected
F5	THC	OK	1.451	1.451		78.859	78.859	192760022-5P	Detected
G5	THC	OK	1.598	1.598		86.848	86.848	192760037-6P	Negative
H5	THC	OK	1.454	1.454		79.022	79.022	192760039-6P	Detected
A6	THC	OK	1.501	1.501		81.576	81.576	192760041-5P	Detected
B6	THC	OK	1.661	1.661		90.272	90.272	192760042-6P	Negative
C6	THC	OK	1.662	1.662		90.326	90.326	192760045-6P	Negative
D6	THC	OK	0.978	0.978		53.152	53.152	192760046-5P	Positive
E6	THC	OK	1.674	1.674		90.978	90.978	192690004-DR	Negative
F6	THC	OK	1.659	1.659		90.163	90.163	192760012-DR	Negative
G6	THC	OK	1.517	1.517		82.446	82.446	192750040-DR	Detected
H6	THC	OK	1.35	1.35		73.37	73.37	QC	Detected

1 Strip method names
2 Pipetting status
3 Difference data
4 Difference data - Mean
5 Difference data - Variation coefficient
6 binding
7 binding - Mean
8 Sample ID 1
9 Cutoff results

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MP (70-84)

	1	2	3	4	5	6	7	8	9
A1	AMP	OK	2.299	2.323	1.4611	98.967	100	NC1	
B1	AMP	OK	2.347			101.03		NC2	
C1	AMP	OK	1.747	1.642	9.0434	75.204	70.684	LPC1	
D1	AMP	OK	1.537			66.164		LPC2	
E1	AMP	OK	1.278	1.426	14.678	55.015	61.386	HPC1	
F1	AMP	OK	1.574			67.757		HPC2	
G1	AMP	OK	1.942	1.942		83.599	83.599	192760033-5P	Negative
H1	AMP	OK	2.393	2.393		103.01	103.01	192760064-10	Negative
A2	AMP	OK	2.373	2.373		102.15	102.15	192760065-10	Negative
B2	AMP	OK	2.154	2.154		92.725	92.725	192760066-10	Negative
C2	AMP	OK	2.108	2.108		90.745	90.745	192760067-10	Negative
D2	AMP	OK	1.874	1.874		80.672	80.672	192750017-5P	Negative
E2	AMP	OK	1.956	1.956		84.201	84.201	192750018-5P	Negative
F2	AMP	OK	1.996	1.996		85.923	85.923	192750025-10	Negative
G2	AMP	OK	2.107	2.107		90.702	90.702	192750044-10	Negative
H2	AMP	OK	2.321	2.321		99.914	99.914	192750045-10	Negative
A3	AMP	OK	2.488	2.488		107.1	107.1	192750019-5P	Negative
B3	AMP	OK	2.232	2.232		96.083	96.083	192750021-5P	Negative
C3	AMP	OK	2.011	2.011		86.569	86.569	192700095-10	Negative
D3	AMP	OK	1.909	1.909		82.178	82.178	192760009-10	Negative
E3	AMP	OK	1.927	1.927		82.953	82.953	192760034-10	Negative
F3	AMP	OK	1.976	1.976		85.062	85.062	192760035-10	Negative
G3	AMP	OK	0.747	0.747		32.157	32.157	192760054-10	Positive
H3	AMP	OK	2.322	2.322		99.957	99.957	192760056-10	Negative
A4	AMP	OK	2.213	2.213		95.265	95.265	192760020-5P	Negative

1 Strip method names
2 Pipetting status
3 Difference data
4 Difference data - Mean
5 Difference data - Variation coefficient
6 binding
7 binding - Mean
8 Sample ID 1
9 Cutoff results

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MP (70-84)

	1	2	3	4	5	6	7	8	9
B4	AMP	OK	1.47	1.47		63.28	63.28	192760026-5P	Detected
C4	AMP	OK	1.824	1.824		78.519	78.519	192760027-5P	Negative
D4	AMP	OK	1.774	1.774		76.367	76.367	192760028-5P	Negative
E4	AMP	OK	1.682	1.682		72.406	72.406	192760029-5P	Negative
F4	AMP	OK	1.687	1.687		72.622	72.622	192760030-5P	Negative
G4	AMP	OK	1.731	1.731		74.516	74.516	192760031-12	Negative
H4	AMP	OK	1.662	1.662		71.545	71.545	192760008-12	Negative
A5	AMP	OK	2.397	2.397		103.19	103.19	192760010-10	Negative
B5	AMP	OK	2.238	2.238		96.341	96.341	192760011-10	Negative
C5	AMP	OK	2.136	2.136		91.95	91.95	192760016-10	Negative
D5	AMP	OK	1.926	1.926		82.91	82.91	192760017-5P	Negative
E5	AMP	OK	1.791	1.791		77.099	77.099	192760018-17	Negative
F5	AMP	OK	1.945	1.945		83.728	83.728	192760022-5P	Negative
G5	AMP	OK	1.947	1.947		83.814	83.814	192760037-6P	Negative
H5	AMP	OK	2.164	2.164		93.155	93.155	192760039-6P	Negative
A6	AMP	OK	1.532	1.532		65.949	65.949	192760041-5P	Detected
B6	AMP	OK	2.13	2.13		91.692	91.692	192760042-6P	Negative
C6	AMP	OK	1.811	1.811		77.96	77.96	192760045-6P	Negative
D6	AMP	OK	1.961	1.961		84.417	84.417	192760046-5P	Negative
E6	AMP	OK	1.756	1.756		75.592	75.592	192690004-DR	Negative
F6	AMP	OK	1.694	1.694		72.923	72.923	192760012-DR	Negative
G6	AMP	OK	1.772	1.772		76.281	76.281	192750040-DR	Negative
H6	AMP	OK	1.658	1.658		71.373	71.373	QC	Negative

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10071904XOPI
01 AAA. Sample Rack
Created 10/8/2019 7:03:37
Last Access 10/8/2019 7:03:37
Rows 6, Columns 16

1 A01 NC1
2 B01 NC2
3 C01 LPC1
4 D01 LPC2
5 E01 HPC1
6 F01 HPC2
7 G01 192800070-XOPI T(49)
8 H01 192800106-XOPI O(12)
9 I01 192800114-XOPI T(51)
10 J01 192760008-XOPI O(2) T(102)
11 K01 192700096-XOPI T(55)
12 L01 192760018-XOPI F(18)
13 M01 192760031-XOPI
14 N01 192760021-XOPI
15 O01 192770056-XOPI
16 P01 192770020-XOPI T(102)
17 A02 192770046-XOPI T(101)
18 B02 192770047-XOPI T(56)
19 C02 192770053-XOPI
20 D02 192800117-XOPI LOD O(27) T(50)
21 E02 192690004-DR T(44)
22 F02 192760012-DR T(55)
23 G02 192750040-DR T(55)
24 H02 192770030-DR T(102)
25 I02 192770031-DR T(57)
26 J02 192770058-UKD T(58)
27 K02 QC
28 L02
29 M02
30 N02
31 O02
32 P02

OXY(19-22)3 TRAM(60-72)14

FENT(42-50)1

1 Strip method names
2 Pipetting status
3 Difference data
4 Difference data - Mean
5 Difference data - Variation coefficient
6 binding
7 binding - Mean
8 Sample ID 1
9 Cutoff results

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(19-22)

	1	2	3	4	5	6	7	8	9
A1	OXY	OK	1.952	1.958	0.43336	99.694	100	NC1	
B1	OXY	OK	1.964			100.31		NC2	
C1	OXY	OK	0.409	0.384	9.2071	20.889	19.612	LPC1	
D1	OXY	OK	0.359			18.335		LPC2	
E1	OXY	OK	0.163	0.1715	7.0092	8.3248	8.7589	HPC1	
F1	OXY	OK	0.18			9.1931		HPC2	
G1	OXY	OK	1.685	1.685		86.057	86.057	192800070-XO	Negative
H1	OXY	OK	0.248	0.248		12.666	12.666	192800106-XO	Detected
A2	OXY	OK	1.701	1.701		86.874	86.874	192800114-XO	Negative
B2	OXY	OK	1.808	1.808		92.339	92.339	192760008-XO	Negative
C2	OXY	OK	1.749	1.749		89.326	89.326	192700096-XO	Negative
D2	OXY	OK	0.045	0.045		2.2983	2.2983	192760018-XO	Positive
E2	OXY	OK	1.71	1.71		87.334	87.334	192760031-XO	Negative
F2	OXY	OK	1.718	1.718		87.743	87.743	192760021-XO	Negative
G2	OXY	OK	1.655	1.655		84.525	84.525	192770056-XO	Negative
H2	OXY	OK	1.795	1.795		91.675	91.675	192770020-XO	Negative
A3	OXY	OK	2.216	2.216		113.18	113.18	192770046-XO	Negative
B3	OXY	OK	2.231	2.231		113.94	113.94	192770047-XO	Negative
C3	OXY	OK	2.194	2.194		112.05	112.05	192770053-XO	Negative
D3	OXY	OK	0.538	0.538		27.477	27.477	192800117-XO	Negative
E3	OXY	OK	2.051	2.051		104.75	104.75	192690004-DR	Negative
F3	OXY	OK	2.22	2.22		113.38	113.38	192760012-DR	Negative
G3	OXY	OK	2.01	2.01		102.66	102.66	192750040-DR	Negative
H3	OXY	OK	2.082	2.082		106.33	106.33	192770030-DR	Negative
A4	OXY	OK	2.155	2.155		110.06	110.06	192770031-DR	Negative

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1 Strip method names
2 Pipetting status
3 Difference data
4 Difference data - Mean
5 Difference data - Variation coefficient
6 binding
7 binding - Mean
8 Sample ID 1
9 Cutoff results

(19-22)

	1	2	3	4	5	6	7	8	9
B4	OXY	OK	2.268	2.268		115.83	115.83	192770058-UK	Negative
C4	OXY	OK	0.8	0.8		40.858	40.858	QC	Negative

1 Strip method names
2 Pipetting status
3 Difference data
4 Difference data - Mean
5 Difference data - Variation coefficient
6 binding
7 binding - Mean
8 Sample ID 1
9 Cutoff results

	1	2	3	4	5	6	7	8	9
A1	MEP	OK	2.203	2.258	3.4447	97.564	100	NC1	
B1	MEP	OK	2.313			102.44		NC2	
C1	MEP	OK	1.559	1.5565	0.22715	69.043	68.933	LPC1	
D1	MEP	OK	1.554			68.822		LPC2	
E1	MEP	OK	1.284	1.3295	4.8399	56.864	58.88	HPC1	
F1	MEP	OK	1.375			60.895		HPC2	
G1	MEP	OK	2.105	2.105		93.224	93.224	192800070-XO	Negative
H1	MEP	OK	2.279	2.279		100.93	100.93	192800106-XO	Negative
A2	MEP	OK	2.192	2.192		97.077	97.077	192800114-XO	Negative
B2	MEP	OK	2.115	2.115		93.667	93.667	192760008-XO	Negative
C2	MEP	OK	2.189	2.189		96.944	96.944	192700096-XO	Negative
D2	MEP	OK	2.091	2.091		92.604	92.604	192760018-XO	Negative
E2	MEP	OK	2.289	2.289		101.37	101.37	192760031-XO	Negative
F2	MEP	OK	2.255	2.255		99.867	99.867	192760021-XO	Negative
G2	MEP	OK	2.215	2.215		98.096	98.096	192770056-XO	Negative
H2	MEP	OK	2.151	2.151		95.261	95.261	192770020-XO	Negative
A3	MEP	OK	2.152	2.152		95.306	95.306	192770046-XO	Negative
B3	MEP	OK	2.039	2.039		90.301	90.301	192770047-XO	Negative
C3	MEP	OK	2.196	2.196		97.254	97.254	192770053-XO	Negative
D3	MEP	OK	2.038	2.038		90.257	90.257	192800117-XO	Negative
E3	MEP	OK	2.163	2.163		95.793	95.793	192690004-DR	Negative
F3	MEP	OK	2.056	2.056		91.054	91.054	192760012-DR	Negative
G3	MEP	OK	2.13	2.13		94.331	94.331	192750040-DR	Negative
H3	MEP	OK	2.073	2.073		91.807	91.807	192770030-DR	Negative
A4	MEP	OK	2.132	2.132		94.42	94.42	192770031-DR	Negative

1 Strip method names
2 Pipetting status
3 Difference data
4 Difference data - Mean
5 Difference data - Variation coefficient
6 binding
7 binding - Mean
8 Sample ID 1
9 Cutoff results

OCT 0 8 2019

(08-81)

	1	2	3	4	5	6	7	8	9
B4	MEP	OK	2.126	2.126		94.154	94.154	192770058-UK	Negative
C4	MEP	OK	1.544	1.544		68.379	68.379	QC	Detected

1 Strip method names
2 Pipetting status
3 Difference data
4 Difference data - Mean
5 Difference data - Variation coefficient
6 binding
7 binding - Mean
8 Sample ID 1
9 Cutoff results

RD

OCT 0 8 2019

(100-72)

	1	2	3	4	5	6	7	8	9
A1	TRAM	OK	1.802	1.8	0.15713	100.11	100	NC1	
B1	TRAM	OK	1.798			99.889		NC2	
C1	TRAM	OK	1.102	1.0925	1.2298	61.222	60.694	LPC1	
D1	TRAM	OK	1.083			60.167		LPC2	
E1	TRAM	OK	0.911	0.918	1.0784	50.611	51	HPC1	
F1	TRAM	OK	0.925			51.389		HPC2	
G1	TRAM	OK	0.887	0.887		49.278	49.278	192800070-XO	Positive
H1	TRAM	OK	1.282	1.282		71.222	71.222	192800106-XO	Negative
A2	TRAM	OK	0.933	0.933		51.833	51.833	192800114-XO	Detected
B2	TRAM	OK	1.126	1.126		62.556	62.556	192760008-XO	Negative
C2	TRAM	OK	0.998	0.998		55.444	55.444	192700096-XO	Detected
D2	TRAM	OK	1.394	1.394		77.444	77.444	192760018-XO	Negative
E2	TRAM	OK	1.513	1.513		84.056	84.056	192760031-XO	Negative
F2	TRAM	OK	1.523	1.523		84.611	84.611	192760021-XO	Negative
G2	TRAM	OK	1.277	1.277		70.944	70.944	192770056-XO	Negative
H2	TRAM	OK	1.118	1.118		62.111	62.111	192770020-XO	Negative
A3	TRAM	OK	1.104	1.104		61.333	61.333	192770046-XO	Negative
B3	TRAM	OK	1.009	1.009		56.056	56.056	192770047-XO	Detected
C3	TRAM	OK	1.363	1.363		75.722	75.722	192770053-XO	Negative
D3	TRAM	OK	0.906	0.906		50.333	50.333	192800127-XO	Positive
E3	TRAM	OK	0.8	0.8		44.444	44.444	192690004-DR	Positive
F3	TRAM	OK	0.992	0.992		55.111	55.111	192760012-DR	Detected
G3	TRAM	OK	1.003	1.003		55.722	55.722	192750040-DR	Detected
H3	TRAM	OK	1.117	1.117		62.056	62.056	192770030-DR	Negative
A4	TRAM	OK	0.997	0.997		55.389	55.389	192770031-DR	Detected

1 Strip method names
2 Pipetting status
3 Difference data
4 Difference data - Mean
5 Difference data - Variation coefficient
6 binding
7 binding - Mean
8 Sample ID 1
9 Cutoff results

OCT 0 8 2019

(60-72)

	1	2	3	4	5	6	7	8	9
B4	TRAM	OK	0.983	0.983		54.611	54.611	192770058-UK	Detected
C4	TRAM	OK	1.088	1.088		60.444	60.444	QC	Detected

1 Strip method names
2 Pipetting status
3 Difference data
4 Difference data - Mean
5 Difference data - Variation coefficient
6 binding
7 binding - Mean
8 Sample ID 1
9 Cutoff results

OCT 0 8 2019

(42-50)

	1	2	3	4	5	6	7	8	9
A1	FENT	OK	2.414	2.157	16.85	111.91	100	NC1	
B1	FENT	OK	1.9			88.085		NC2	
C1	FENT	OK	0.835	0.909	11.513	38.711	42.142	LPC1	
D1	FENT	OK	0.983			45.573		LPC2	
E1	FENT	OK	0.7	0.6825	3.6262	32.452	31.641	HPC1	
F1	FENT	OK	0.665			30.83		HPC2	
G1	FENT	OK	2.042	2.042		94.669	94.669	192800070-XO	Negative
H1	FENT	OK	2.425	2.425		112.42	112.42	192800106-XO	Negative
A2	FENT	OK	2.19	2.19		101.53	101.53	192800114-XO	Negative
B2	FENT	OK	2.071	2.071		96.013	96.013	192760008-XO	Negative
C2	FENT	OK	1.987	1.987		92.119	92.119	192700096-XO	Negative
D2	FENT	OK	0.394	0.394		18.266	18.266	192760018-XO	Positive
E2	FENT	OK	2.017	2.017		93.51	93.51	192760031-XO	Negative
F2	FENT	OK	2.222	2.222		103.01	103.01	192760021-XO	Negative
G2	FENT	OK	2.01	2.01		93.185	93.185	192770056-XO	Negative
H2	FENT	OK	2.31	2.31		107.09	107.09	192770020-XO	Negative
A3	FENT	OK	2.348	2.348		108.85	108.85	192770046-XO	Negative
B3	FENT	OK	2.105	2.105		97.589	97.589	192770047-XO	Negative
C3	FENT	OK	2.181	2.181		101.11	101.11	192770053-XO	Negative
D3	FENT	OK	1.474	1.474		68.336	68.336	192800117-XO	Negative
E3	FENT	OK	1.737	1.737		80.529	80.529	192690004-DR	Negative
F3	FENT	OK	1.869	1.869		86.648	86.648	192760012-DR	Negative
G3	FENT	OK	2.27	2.27		105.24	105.24	192750040-DR	Negative
H3	FENT	OK	2.234	2.234		103.57	103.57	192770030-DR	Negative
A4	FENT	OK	1.985	1.985		92.026	92.026	192770031-DR	Negative

RG

OCT 0 8 2019

1 Strip method names
2 Pipetting status
3 Difference data
4 Difference data - Mean
5 Difference data - Variation coefficient
6 binding
7 binding - Mean
8 Sample ID 1
9 Cutoff results

(42-50)

	1	2	3	4	5	6	7	8	9
B4	FENT	OK	1.932	1.932		89.569	89.569	192770058-UK	Negative
C4	FENT	OK	0.929	0.929		43.069	43.069	QC	Negative

ExperTox

CONFIRMATION BATCH LOG

ASSAY: Lidocaine BATCH: 1003108

	Intial/Date		Initial Date
Aliquot:	BC 10/17/19	Instrument: LCMS # 4	BC 10/17/19
Extraction/Derivatization:	↓	Check Wash Vials:	↓
Transfer to Autosampler Vials:	↓	Vial Verification/Disposal:	BC 10/18/19
Placed in Sequence:	↓	Carryover Verification:	↓

Sample #	Accession #	Sample Amount	Ion Ratios and R.T. (Y/N)	RESULTS
1	Neg	~~100µL~~ BC 1mL	Y	0
2	19275040	0.0329g	↓	3.9
3	Cal 1	100µL	↓	ok
4	Cal 2	1mL	↓	NA (Peak flatted)
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

100ng/mL
800ng/mL

QC Results: ↓ Acceptable ____ Unacceptable

Reviewed by: BC Date: 10/18/19

Certified by: CA Date: 10/23/19

	LOT#	Exp
Cal 1	101595V2 ↓	10/21 ↓
Cal 2		
Cal 3		
Cal 4		
QC 1		
QC 2		
QC 3		

Comments: _____

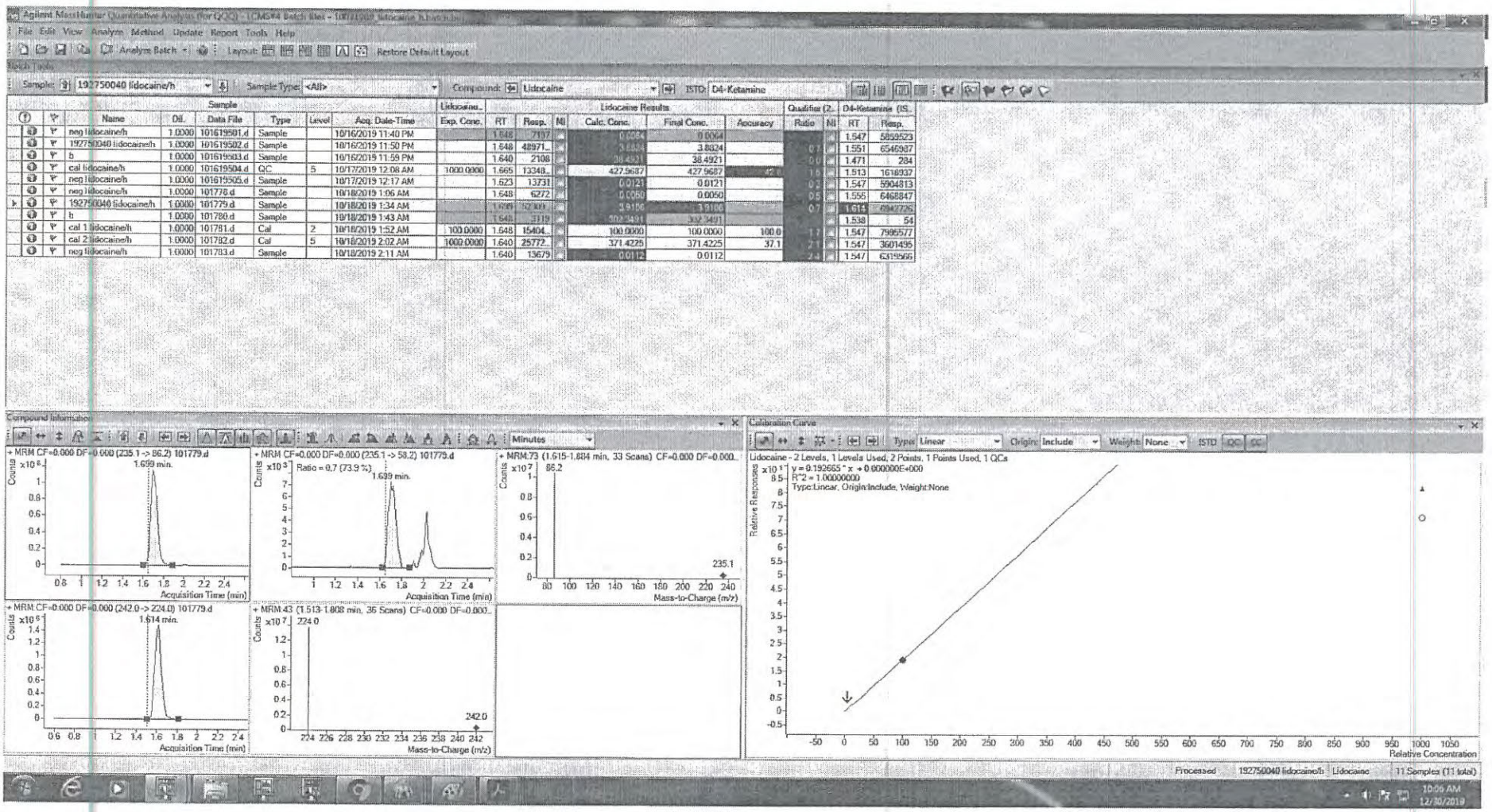
Dr. Ernest Lykissa

This form approved by: Dr. Ernest Lykissa Lab Director.

Worklist Report

Agilent Technologies

	Sample Name	Sample Position	Method	Data File	Sample Type	Level Name	Inj Vol (µl)	Comment	Sample Group	Info.
46	b	P2-A1	MPMP-2018.m	101744.d	Sample		As Method			
47	192890076 pmp/u	P1-D5	MPMP-2018.m	101745.d	Sample		As Method			
48	b	P2-A1	MPMP-2018.m	101746.d	Sample		As Method			
49	192890077 pmp/u	P1-D6	MPMP-2018.m	101747.d	Sample		As Method			
50	b	P2-A1	MPMP-2018.m	101748.d	Sample		As Method			
51	192890078 pmp/u	P1-D7	MPMP-2018.m	101749.d	Sample		As Method			
52	b	P2-A1	MPMP-2018.m	101750.d	Sample		As Method			
53	192890079 pmp/u	P1-D8	MPMP-2018.m	101751.d	Sample		As Method			
54	b	P2-A1	MPMP-2018.m	101752.d	Sample		As Method			
55	192890080 pmp/u	P1-D9	MPMP-2018.m	101753.d	Sample		As Method			
56	b	P2-A1	MPMP-2018.m	101754.d	Sample		As Method			
57	192890081 pmp/u	P1-D10	MPMP-2018.m	101755.d	Sample		As Method			
58	b	P2-A1	MPMP-2018.m	101756.d	Sample		As Method			
59	192890082 pmp/u	P1-D11	MPMP-2018.m	101757.d	Sample		As Method			
60	neg pmp/u	P1-D1	MPMP-2018.m	101758.d	Sample		As Method			
61	50 cal pmp/u	P1-E1	MPMP-2018.m	101759.d	Sample		As Method			
62	100 cal pmp/u	P1-E2	MPMP-2018.m	101760.d	Sample		As Method			
63	1000 cal pmp/u	P1-E3	MPMP-2018.m	101761.d	Sample		As Method			
64	neg pmp/u	P1-D1	MPMP-2018.m	101762.d	Sample		As Method			
65	b	P2-A1	MPMP-2018.m	101763.d	Sample		As Method			
66	b	P2-A1	EIA-Scan-2018.m	101764.d	Sample		As Method			
67	192890075 eia/u	P1-F1	EIA-Scan-2018.m	101765.d	Sample		As Method			
68	b	P2-A1	EIA-Scan-2018.m	101766.d	Sample		As Method			
69	192890076 eia/u	P1-F2	EIA-Scan-2018.m	101767.d	Sample		As Method			
70	b	P2-A1	EIA-Scan-2018.m	101768.d	Sample		As Method			
71	192890078 eia/u	P1-F3	EIA-Scan-2018.m	101769.d	Sample		As Method			
72	b	P2-A1	EIA-Scan-2018.m	101770.d	Sample		As Method			
73	192890079 eia/u	P1-F4	EIA-Scan-2018.m	101771.d	Sample		As Method			
74	b	P2-A1	EIA-Scan-2018.m	101772.d	Sample		As Method			
75	192890080 eia/u	P1-F5	EIA-Scan-2018.m	101773.d	Sample		As Method			
76	b	P2-A1	EIA-Scan-2018.m	101774.d	Sample		As Method			
77	192890082 eia/u	P1-F6	EIA-Scan-2018.m	101775.d	Sample		As Method			
78	b	P2-A1	EIA-Scan-2018.m	101776r.d	Sample		As Method			
79	b	P2-A1	MPMP-2018.m	101777.d	Sample		As Method			
80	neg lidocaine/h	P2-C1	MPMP-2018.m	101778.d	Sample		As Method			
81	192750040 lidocaine/h	P2-C2	MPMP-2018.m	101779.d	Sample		As Method			
82	b	P2-A1	MPMP-2018.m	101780.d	Sample		As Method			
83	cal 1 lidocaine/h	P2-C3	MPMP-2018.m	101781.d	Sample		As Method			
84	cal 2 lidocaine/h	P2-C4	MPMP-2018.m	101782.d	Sample		As Method			
85	neg lidocaine/h	P2-C1	MPMP-2018.m	101783.d	Sample		As Method			
86	b	P2-A1	MPMP-2018.m	101784.d	Sample		As Method			


Agilent MassHunter Quantitative Analysis for QQQ - LCMS#4 Batch files - 101619501_lidocaine h.batch.bin
File Edit View Analysis Method Update Report Tools Help
Analysis Batch
Layout:
Restore Default Layout
Batch Table
Sample: 192750040 lidocaine/h
Sample Type: <All>
Compound: Lidocaine
ISTD: D4-Ketamine
Sample
Lidocaine...
Lidocaine Results
Qualifier (2...
D4-Ketamine (IS...
Name
Dil.
Data File
Type
Level
Acq. Date-Time
Exp. Conc.
RT
Resp.
Ml
Calc. Conc.
Final Conc.
Accuracy
Ratio
neg lidocaine/h 1.0000 101619501.d Sample 10/16/2019 11:40 PM 1.648 7197 0.0064 0.0064 1.547 5859523
192750040 lidocaine/h 1.0000 101619502.d Sample 10/16/2019 11:50 PM 1.648 48971... 3.8024 3.8024 0.1 1.551 6546987
b 1.0000 101619503.d Sample 10/16/2019 11:59 PM 1.640 2106 38.4921 38.4921 0.0 1.471 284
cal lidocaine/h 1.0000 101619504.d QC 5 10/17/2019 12:08 AM 1000.0000 1.665 13348... 427.9687 427.9687 42.8 1.6 1.513 1618937
neg lidocaine/h 1.0000 101619505.d Sample 10/17/2019 12:17 AM 1.623 13731 0.0121 0.0121 0.2 1.547 5904813
neg lidocaine/h 1.0000 101778.d Sample 10/18/2019 1:06 AM 1.648 6272 0.0050 0.0050 0.5 1.555 6468847
192750040 lidocaine/h 1.0000 101779.d Sample 10/18/2019 1:34 AM 1.699 32309 3.9106 3.9106 0.7 1.614 6942726
b 1.0000 101780.d Sample 10/18/2019 1:43 AM 1.648 3119 302.3491 302.3491 1.538 54
cal 1 lidocaine/h 1.0000 101781.d Cal 2 10/18/2019 1:52 AM 100.0000 1.648 15404... 100.0000 100.0000 100.0 1.7 1.547 7996577
cal 2 lidocaine/h 1.0000 101782.d Cal 5 10/18/2019 2:02 AM 1000.0000 1.640 25772... 371.4225 371.4225 37.1 2.1 1.547 3601495
neg lidocaine/h 1.0000 101783.d Sample 10/18/2019 2:11 AM 1.640 13679 0.0112 0.0112 2.4 1.547 6319566
Compound Information
Minutes
+ MRM CF=0.000 DF=0.000 (235.1 -> 86.2) 101779.d
1.699 min.
Counts
Acquisition Time (min)
+ MRM CF=0.000 DF=0.000 (235.1 -> 58.2) 101779.d
Ratio = 0.7 (73.9 %)
1.699 min.
Acquisition Time (min)
+ MRM:73 (1.615-1.884 min, 33 Scans) CF=0.000 DF=0.000...
86.2
235.1
Mass-to-Charge (m/z)
+ MRM CF=0.000 DF=0.000 (242.0 -> 224.0) 101779.d
1.614 min.
Acquisition Time (min)
+ MRM:43 (1.513-1.808 min, 35 Scans) CF=0.000 DF=0.000...
224.0
242.0
Mass-to-Charge (m/z)
Calibration Curve
Type: Linear
Origin: Include
Weight: None
ISTD
QC
Lidocaine - 2 Levels, 1 Levels Used, 2 Points, 1 Points Used, 1 QCs
y = 0.192655 * x + 0.000000E+000
R^2 = 1.00000000
Type:Linear, Origin:Include, Weight:None
Relative Responses
Relative Concentration
Processed
192750040 lidocaine/h
Lidocaine
11 Samples (11 total)
10:06 AM
12/30/2019

ExperTox

CONFIRMATION BATCH LOG

ASSAY: Lidocaine/17 BATCH: 1003908

	Intial/Date		Initial Date
Aliquot:	BC 10/16/19	Instrument: LCMS #4	BC 10/16/19
Extraction/Derivatization:	↓	Check Wash Vials:	+
Transfer to Autosampler Vials:	↓	Vial Verification/Disposal:	BC 10/17/19
Placed in Sequence:	↓	Carryover Verification:	

Sample #	Accession #	Sample Amount	Ion Ratios and R.T. (Y/N)	RESULTS
1	Neg	1mL	Y	
2	1927S0040	↓	↓	0
3	Cal	↓	↓	Detected (0.5)
4				pos
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

0.0329

QC Results: ✓ Acceptable ____ Unacceptable

Reviewed by: BC Date: 10/17/19

Certified by: CC Date: 10/25/19

	LOT#	Exp
Cal 1	040819RH2	4/21
Cal 2		
Cal 3		
Cal 4		
QC 1		
QC 2		
QC 3		

Comments:

Dr. Ernest Lykissa

This form approved by: Dr. Ernest Lykissa Lab Director.

Worklist Report

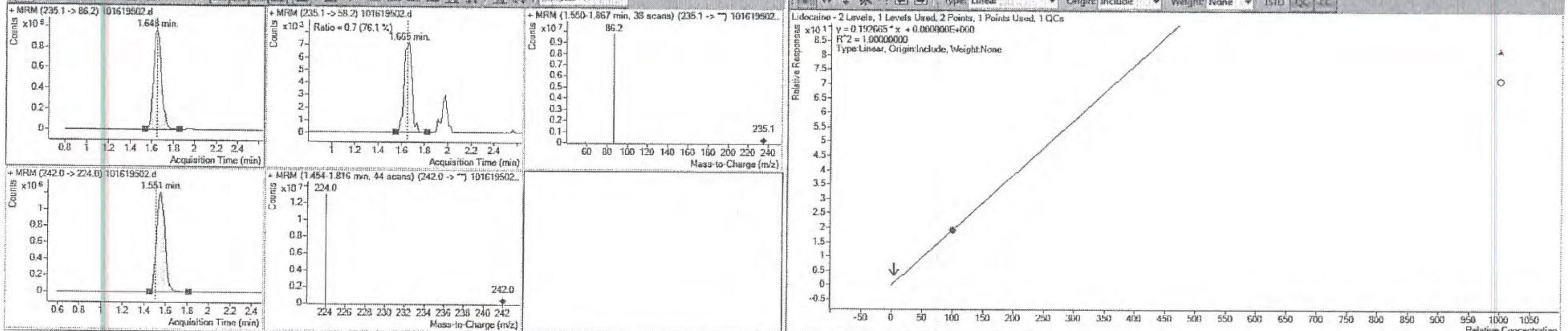
Agilent Technologies

	Sample Name	Sample Position	Method	Data File	Sample Type	Level Name	Inj Vol (µl)	Comment	Sample Group	Info.
42	192870050 amp/h	P2-C5	AMP-COC-H-2017.m	10161941.d	Sample		As Method			
43	192870049 amp/h	P2-C6	AMP-COC-H-2017.m	10161942.d	Sample		As Method			
44	192880016 amp/h	P2-C7	AMP-COC-H-2017.m	10161943.d	Sample		As Method			
45	192880019 amp/h	P2-C8	AMP-COC-H-2017.m	10161944.d	Sample		As Method			
46	192880023 amp +coc/h	P2-C9	AMP-COC-H-2017.m	10161945.d	Sample		As Method			
47	192880024 amp +coc/h	P2-C10	AMP-COC-H-2017.m	10161946.d	Sample		As Method			
48	192870051 amp/h	P2-C11	AMP-COC-H-2017.m	10161947.d	Sample		As Method			
49	192870052 amp/h	P2-D1	AMP-COC-H-2017.m	10161948.d	Sample		As Method			
50	192890001 amp +coc/h	P2-D2	AMP-COC-H-2017.m	10161949.d	Sample		As Method			
51	192870042 coc/h	P2-D3	AMP-COC-H-2017.m	10161950.d	Sample		As Method			
52	neg amp+coc/h	P2-B10	AMP-COC-H-2017.m	10161951.d	Sample		As Method			
53	100cal amp+coc/h	P2-D4	AMP-COC-H-2017.m	10161952.d	Sample		As Method			
54	200cal amp+coc/h	P2-D5	AMP-COC-H-2017.m	10161953.d	Sample		As Method			
55	800cal amp+coc/h	P2-D6	AMP-COC-H-2017.m	10161954.d	Sample		As Method			
56	2000cal amp+coc/h	P2-D7	AMP-COC-H-2017.m	10161955.d	Sample		As Method			
57	neg amp+coc/h	P2-B10	AMP-COC-H-2017.m	10161956.d	Sample		As Method			
58	b	P2-A1	AMP-COC-H-2017.m	10161957r.d	Sample		As Method			
59	b	P2-A1	OPI-H-2018.m	10161958.d	Sample		As Method			
60	neg 6am/u	P1-F1	OPI-H-2018.m	10161959.d	Sample		As Method			
61	qc 6am/u	P1-F2	OPI-H-2018.m	10161960.d	Sample		As Method			
62	b	P2-A1	OPI-H-2018.m	10161961.d	Sample		As Method			
63	192880077 6am/u	P1-F3	OPI-H-2018.m	10161962.d	Sample		As Method			
64	192880020 6am/u	P1-F4	OPI-H-2018.m	10161963.d	Sample		As Method			
65	neg 6am/u	P1-F1	OPI-H-2018.m	10161964.d	Sample		As Method			
66	5 cal 6am/u	P1-F5	OPI-H-2018.m	10161965.d	Sample		As Method			
67	25 cal 6am/u	P1-F6	OPI-H-2018.m	10161966.d	Sample		As Method			
68	50 cal 6am/u	P1-F7	OPI-H-2018.m	10161967.d	Sample		As Method			
69	100 cal 6am/u	P1-F8	OPI-H-2018.m	10161968.d	Sample		As Method			
70	neg 6am/u	P1-F1	OPI-H-2018.m	10161969.d	Sample		As Method			
71	b	P2-A1	OPI-H-2018.m	10161970.d	Sample		As Method			
72	SCP_InstrumentStandby() {MH_Acq_Scripts.exe}									
73	b	P2-A1	MPMP-2018.m	101619500.d	Sample		As Method			
74	neg lidocaine/h	P2-E4	MPMP-2018.m	101619501.d	Sample		As Method			
75	192750040 lidocaine/h	P2-E5	MPMP-2018.m	101619502.d	Sample		As Method			
76	b	P2-A1	MPMP-2018.m	101619503.d	Sample		As Method			
77	cal lidocaine/h	P2-E6	MPMP-2018.m	101619504.d	Sample		As Method			
78	neg lidocaine/h	P2-E4	MPMP-2018.m	101619505.d	Sample		As Method			

Agilent MassHunter Quantitative Analysis (for QQQ) - LCMS#4 Batch files - 101619 lidocaine

Sample: 192750040 lidocaine/h — Sample Type: <All> — Compound: Lidocaine — ISTD: D4-Ketamine

		Sample						Lidocaine...	Lidocaine Results						Qualifie...	D4-Ketamine (I...		
		Name	Dil.	Data File	Type	Level	Acq. Date-Time	Exp. Conc.	RT	Resp.	MI	Calc. Conc.	Final Conc.	Accuracy	Ratio	MI	RT	Resp.
		neg lidocaine/h	1.0000	101619501.d	Sample		10/16/2019 11:40 PM		1.648	7197		0.0064	0.0064				1.547	5859523
▸		192750040 lidocaine/h	1.0000	101619502.d	Sample		10/16/2019 11:50 PM		1.648	4897181		3.8824	3.8824		0.7		1.551	6540987
		b	1.0000	101619503.d	Sample		10/16/2019 11:59 PM		1.640	2108		38.4921	38 3.8824		0.0		1.471	284
		cal lidocaine/h	1.0000	101619504.d	QC	5	10/17/2019 12:08 AM	1000.0000	1.665	133488458		427.9687	427.9687	42.8	1.0		1.513	1618937
		neg lidocaine/h	1.0000	101619505.d	Sample		10/17/2019 12:17 AM		1.623	13731		0.0121	0.0121		0.2		1.547	5904813
		neg lidocaine/h	1.0000	101778.d	Sample		10/18/2019 1:06 AM		1.648	6272		0.0050	0.0050		0.5		1.555	6468847
		192750040 lidocaine/h	1.0000	101779.d	Sample		10/18/2019 1:34 AM		1.699	5230945		3.9106	3.9106		0.7		1.614	6942726
		b	1.0000	101780.d	Sample		10/18/2019 1:43 AM		1.648	5119		302.3491	302.3491				1.538	54
		cal 1 lidocaine/h	1.0000	101781.d	Cal	2	10/18/2019 1:52 AM	100.0000	1.648	154046383		100.0000	100.0000	100.0	1.7		1.547	7995577
		cal 2 lidocaine/h	1.0000	101782.d	Cal	5	10/18/2019 2:02 AM	1000.0000	1.640	257722713		371.4225	371.4225	37.1	2.1		1.547	3601495
		neg lidocaine/h	1.0000	101783.d	Sample		10/18/2019 2:11 AM		1.640	13679		0.0112	0.0112		2.4		1.547	6319566



Processed | 192750040 lidocaine/h | Lidocaine | 11 Samples (11 total)

10:11 AM 12/30/2019

ExperTox

CONFIRMATION BATCH LOG

ASSAY: Amp/ H

BATCH: 10031904, 08

	Initial/Date		Initial/Date
Aliquot:	MH 10.4.19	Instrument: LC 4	MH 10.4.19
Extraction/Derivatization:	↓	Check Wash Vials:	↓
Transfer to Autosampler Vials:	↓	Vial Verification/Disposal:	CA 10/7/19
Placed in Sequence:	↓	Carryover Verification:	↓

	Sample #	Accession #	Sample Amount	Ion Ratios and R.T. (Y/N)	RESULTS Amp	Meth	MDA	MDEA	MDMA
	1	neg	—	Y	0	0	0	0	0
	2	low QC	75µL		168	134	167	149	140
	3	high QC	150µL		284	289	231	296	279
M-54	4	1927G0034	0.0180 0.0555		0	536	0	0	0
A-32 M-14	5	1927G0054	0.0206 0.0485		1030	1614			
A-63 M-23	6	1927G0026	0.0191 0.0575		774	1404			
M-48	7	1927G0028	0.0211 0.0476		165	125			
A-72	8	1927G0030	0.0203 0.0492		0	0			
A-74	9	1927G0031	0.0185 0.0540		0	0			
A-71 M-34	10	1927G0068	0.0200 0.05		170	589			
M-58	11	1927G0010	0.0180 0.0555		172	195			
A-83	12	1927G0037	0.0188 0.0531		0	0			
M-36	13	1927G0039	0.0213 0.0469		110	897			
A-65 M-39	14	1927G0041	0.0180 0.0555		196	443			
M-73	15	1927G0042	0.0213 0.0469		0	136			
A-84 M-47	16	1927G0046	0.0181 0.0552		0	0			
A-77 M-41	17	1927G0045	0.0206 0.0485		0	290			
A-75	18	1926900044	0.0220 0.0454		0	0			
A-78	19	1927G0012	0.0477 0.0209		0	0			
A-76	20	1927500046	0.0329 0.0304	↓	0	0	↓	↓	↓

QC Results: _____ Acceptable _____ Unacceptable

Reviewed by: CA Date: 10/7/19

Certified by: KH Date: 10/7/19

	LOT#	EXP DATE
Cal 1	060619KH12	4-21
Cal 2		
Cal 3		
Cal 4		
QC 1	060619KH1	
QC 2		
QC 3		

Comments: _____

This form approved by: Dr. Ernest Lyklasa Lab Director.

EXPERTOX

CONFIRMATION BATCH LOG - Continuation

ASSAY: Amp/1H

BATCH: 10031904,08

#	Accession #	Sample Amount	IR & RT	Results Amp	MeHL	MDA	MDEA	MDMA
21	100 cal	50 uL	Y	Ok	Ok	Ok	Ok	Ok
22	200 cal	100 uL	↓	↓	↓	↓	↓	↓
23	800 cal	400 uL						
24	2000 cal	1mL						
25	19276 0029	0.0207	0.0163 ↓	O	O	O	O	O
26								
27								
28								
29								
30								
31								
32								
33								
34								
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46								
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48								
49								
50								

A-72

This form approved by Dr. Ernest D. Lykissa Lab Director Dr. Ernest D. Lykissa,

Worklist Report

Agilent Technologies

	Sample Name	Sample Position	Method	Data File	Sample Type	Level Name	Inj Vol (µl)	Comment	Sample Group	Info.
39	5cal thc/h	P2-C5	D-MRM-THC-COOH-Hair-Test001.m	100438.d	Sample		As Method			
40	10cal thc/h	P2-C6	D-MRM-THC-COOH-Hair-Test001.m	100439.d	Sample		As Method			
41	50cal thc/h	P2-C7	D-MRM-THC-COOH-Hair-Test001.m	100440.d	Sample		As Method			
42	100cal thc/h	P2-C8	D-MRM-THC-COOH-Hair-Test001.m	100441.d	Sample		As Method			
43	neg thc/h	P2-A3	D-MRM-THC-COOH-Hair-Test001.m	100442.d	Sample		As Method			
44	b	P2-A1	D-MRM-THC-COOH-Hair-Test001.m	100443.d	Sample		As Method			
45	b	P2-A1	OPI-H-2018.m	100444.d	Sample		As Method			
46	neg opi/h	P2-C9	OPI-H-2018.m	100445.d	Sample		As Method			
47	low qc opi/h	P2-C10	OPI-H-2018.m	100446.d	Sample		As Method			
48	high qc opi/h	P2-C11	OPI-H-2018.m	100447.d	Sample		As Method			
49	192760026 opi/h	P2-D1	OPI-H-2018.m	100448.d	Sample		As Method			
50	192760018 opi/h	P2-D2	OPI-H-2018.m	100449.d	Sample		As Method			
51	192760041 opi/h	P2-D3	OPI-H-2018.m	100450.d	Sample		As Method			
52	192760042 opi/h	P2-D4	OPI-H-2018.m	100451.d	Sample		As Method			
53	neg opi/h	P2-C9	OPI-H-2018.m	100452.d	Sample		As Method			
54	100cal opi/h	P2-D5	OPI-H-2018.m	100453.d	Sample		As Method			
55	200cal opi/h	P2-D6	OPI-H-2018.m	100454.d	Sample		As Method			
56	1000cal opi/h	P2-D7	OPI-H-2018.m	100455.d	Sample		As Method			
57	2000cal opi/h	P2-D8	OPI-H-2018.m	100456.d	Sample		As Method			
58	neg opi/h	P2-C9	OPI-H-2018.m	100457.d	Sample		As Method			
59	b	P2-A1	OPI-H-2018.m	100458.d	Sample		As Method			
60	b	P2-A1	AMP-COC-H-2017.m	100459.d	Sample		As Method			
61	neg amp+coc/h	P2-D9	AMP-COC-H-2017.m	100460.d	Sample		As Method			
62	low qc opi/h	P2-D10	AMP-COC-H-2017.m	100461.d	Sample		As Method			
63	high qc opi/h	P2-D11	AMP-COC-H-2017.m	100462.d	Sample		As Method			
64	192760034 amp/h	P2-E1	AMP-COC-H-2017.m	100463.d	Sample		As Method			
65	192760054 amp/h	P2-E2	AMP-COC-H-2017.m	100464.d	Sample		As Method			
66	192760026 amp/h	P2-E3	AMP-COC-H-2017.m	100465.d	Sample		As Method			
67	192760028 amp/h	P2-E4	AMP-COC-H-2017.m	100466.d	Sample		As Method			
68	192760030 amp/h	P2-E5	AMP-COC-H-2017.m	100467.d	Sample		As Method			
69	192760031 amp/h	P2-E6	AMP-COC-H-2017.m	100468.d	Sample		As Method			
70	192760008 amp/h	P2-E7	AMP-COC-H-2017.m	100469.d	Sample		As Method			
71	192760010 amp +coc/h	P2-E8	AMP-COC-H-2017.m	100470.d	Sample		As Method			
72	192760037 amp/h	P2-E9	AMP-COC-H-2017.m	100471.d	Sample		As Method			
73	192760039 amp/h	P2-E10	AMP-COC-H-2017.m	100472.d	Sample		As Method			
74	192760041 amp/h	P2-E11	AMP-COC-H-2017.m	100473.d	Sample		As Method			
75	192760042 amp +coc/h	P2-F1	AMP-COC-H-2017.m	100474.d	Sample		As Method			

Worklist Report

Agilent Technologies

	Sample Name	Sample Position	Method	Data File	Sample Type	Level Name	Inj Vol (µl)	Comment	Sample Group	Info.
76	192760046 amp +coc/h	P2-F2	AMP-COC-H-2017.m	100475.d	Sample		As Method			
77	192760045 amp/h	P2-F3	AMP-COC-H-2017.m	100476.d	Sample		As Method			
78	192690004 amp +coc/h	P2-F4	AMP-COC-H-2017.m	100477.d	Sample		As Method			
79	192760012 amp/h	P2-F5	AMP-COC-H-2017.m	100478.d	Sample		As Method			
80	192750040 amp/h	P2-F6	AMP-COC-H-2017.m	100479.d	Sample		As Method			
81	192760029 amp/h	P2-F7	AMP-COC-H-2017.m	100480.d	Sample		As Method			
82	192760018 coc/h	P2-F8	AMP-COC-H-2017.m	100481.d	Sample		As Method			
83	neg amp+coc/h	P2-D9	AMP-COC-H-2017.m	100482.d	Sample		As Method			
84	100cal amp+coc/h	P2-F9	AMP-COC-H-2017.m	100483.d	Sample		As Method			
85	200cal amp+coc/h	P2-F10	AMP-COC-H-2017.m	100484.d	Sample		As Method			
86	800cal amp+coc/h	P1-F1	AMP-COC-H-2017.m	100485.d	Sample		As Method			
87	2000cal amp+coc/h	P1-F2	AMP-COC-H-2017.m	100486.d	Sample		As Method			
88	neg amp+coc/h	P2-D9	AMP-COC-H-2017.m	100487.d	Sample		As Method			
89	b	P2-A1	AMP-COC-H-2017.m	100488.d	Sample		As Method			
90	SCP_InstrumentStandby() {MH_Acq_Scripts.exe }									

ExperTox

CONFIRMATION BATCH LOG

ASSAY: THC/H BATCH: 1003190B

	Intial/Date		Initial Date
Aliquot:	BC 10/21/19	Instrument: LCMS # 4	BC 10/21/19
Extraction/Derivatization:	↓	Check Wash Vials:	↓
Transfer to Autosampler Vials:	↓	Vial Verification/Disposal:	BC 10/23/19
Placed in Sequence:	↓	Carryover Verification:	↓

Sample #	Accession #	Sample Amount	Ion Ratios and R.T. (Y/N)	RESULTS COOH-THC	RESULTS THC
1	Neg	1mL	Y	0	0
2	Low QC	75µL	↓	6.1	6.5
3	High QC	150µL	↓	12	↓ 7.2
BL 4	1927500406	0.0200g	↓	0	0
5	5 Cal	50µL	↓	Ok	N/A
6	10 Cal	100µL	↓	↓	Ok
7	50 Cal	500µL	↓	↓	↓
8	100 Cal	1mL	↓	↓	↓
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

QC Results: ✓ Acceptable ____ Unacceptable

Reviewed by: BC Date: 10/23/19

Certified by: KH Date: 10/24/19

	LOT#	Exp
Cal 1	082319CH	8/21
Cal 2		
Cal 3		
Cal 4		
QC1	090919BC1	9/21
QC2		
QC3		

Comments: _____

Dr. Ernest Lykissa

This form approved by: Dr. Ernest Lykissa Lab Director.

Worklist Report

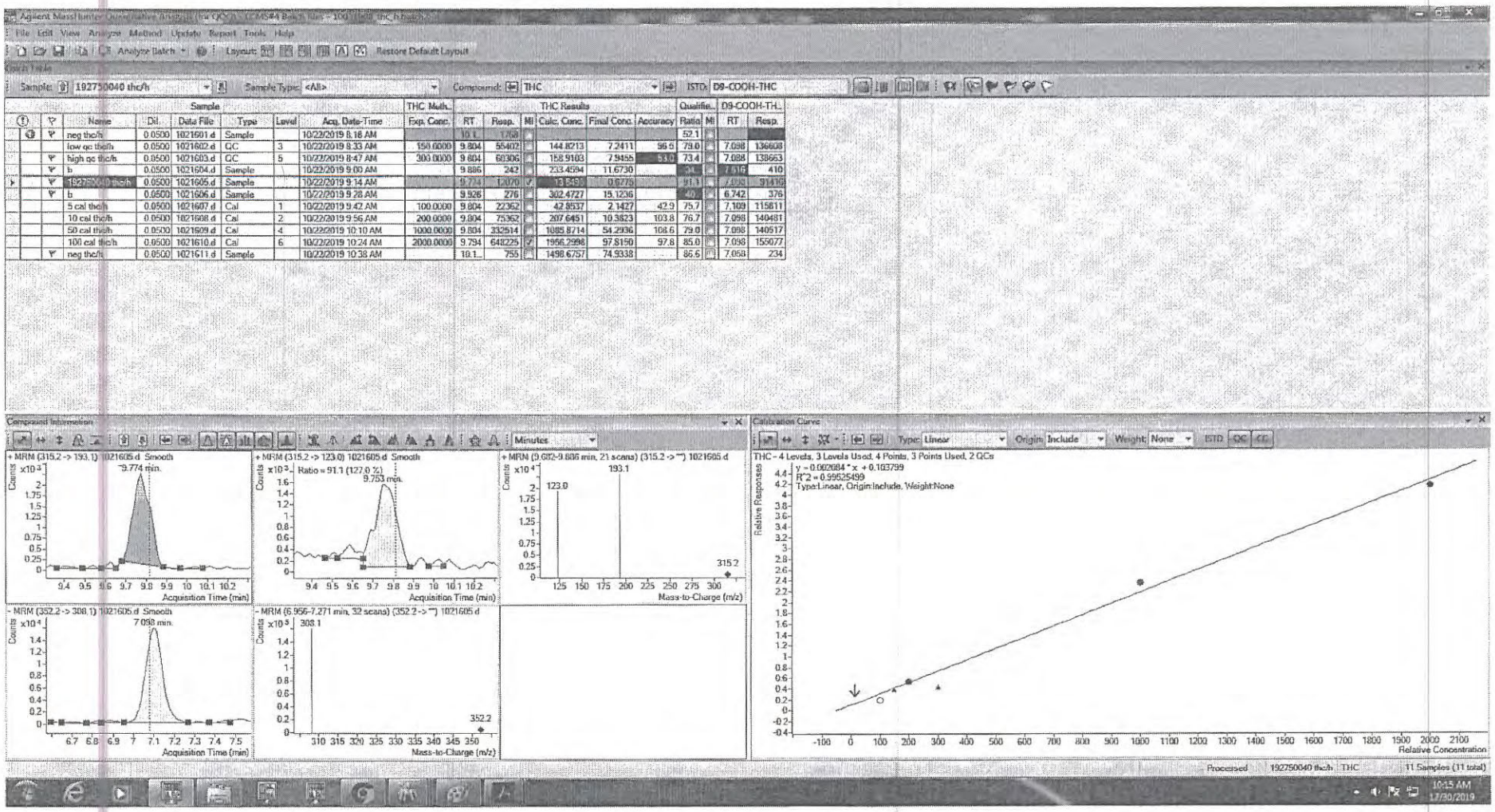
Agilent Technologies

	Sample Name	Sample Position	Method	Data File	Sample Type	Level Name	Inj Vol (µl)	Comment	Sample Group	Info.
46	4 cal thc/s	P1-B6	D-MRM-THC-COOH.m	102143.d	Sample		As Method			
47	25 cal thc/s	P1-B7	D-MRM-THC-COOH.m	102144.d	Sample		As Method			
48	100 cal thc/s	P1-B8	D-MRM-THC-COOH.m	102145.d	Sample		As Method			
49	neg thc/s	P1-B1	D-MRM-THC-COOH.m	102146.d	Sample		As Method			
50	b	P2-A1	D-MRM-THC-COOH.m	102147r.d	Sample		As Method			
51	b	P2-A1	MPMP-2018.m	102148.d	Sample		As Method			
52	neg lidocaine/h	P2-C1	MPMP-2018.m	102149.d	Sample		As Method			
53	192750040 lidocaine/h BL	P2-C2	MPMP-2018.m	102150.d	Sample		As Method			
54	b	P2-A1	MPMP-2018.m	102151.d	Sample		As Method			
55	low cal lidocaine/h	P2-C3	MPMP-2018.m	102152.d	Sample		As Method			
56	high cal lidocaine/h	P2-C4	MPMP-2018.m	102153.d	Sample		As Method			
57	neg lidocaine/h	P2-C1	MPMP-2018.m	102154.d	Sample		As Method			
58	b	P2-A1	MPMP-2018.m	102155.d	Sample		As Method			
59	b	P2-A1	OPI-H-2018.m	102156.d	Sample		As Method			
60	neg 6am/b	P1-F1	OPI-H-2018.m	102157.d	Sample		As Method			
61	qc 6am/b	P1-F2	OPI-H-2018.m	102158.d	Sample		As Method			
62	b	P2-A1	OPI-H-2018.m	102159.d	Sample		As Method			
63	192910049 6am/b	P1-F3	OPI-H-2018.m	102160.d	Sample		As Method			
64	neg 6am/b	P1-F1	OPI-H-2018.m	102161.d	Sample		As Method			
65	5 cal 6am/b	P1-F4	OPI-H-2018.m	102162.d	Sample		As Method			
66	25 cal 6am/b	P1-F5	OPI-H-2018.m	102163.d	Sample		As Method			
67	50 cal 6am/b	P1-F6	OPI-H-2018.m	102164.d	Sample		As Method			
68	100 cal 6am/b	P1-F7	OPI-H-2018.m	102165.d	Sample		As Method			
69	neg 6am/b	P1-F1	OPI-H-2018.m	102166.d	Sample		As Method			
70	b	P2-A1	OPI-H-2018.m	102167.d	Sample		As Method			
71	B	P2-A1	D-MRM-THC-COOH-Hair-Test001.m	1021600.d	Sample		As Method			
72	neg thc/h	P2-D1	D-MRM-THC-COOH-Hair-Test001.m	1021601.d	Sample		As Method			
73	low qc thc/h	P2-D2	D-MRM-THC-COOH-Hair-Test001.m	1021602.d	Sample		As Method			
74	high qc thc/h	P2-D3	D-MRM-THC-COOH-Hair-Test001.m	1021603.d	Sample		As Method			
75	b	P2-A1	D-MRM-THC-COOH-Hair-Test001.m	1021604.d	Sample		As Method			
76	192750040 thc/h	P2-F10	D-MRM-THC-COOH-Hair-Test001.m	1021605.d	Sample		As Method			
77	b	P2-A1	D-MRM-THC-COOH-Hair-Test001.m	1021606.d	Sample		As Method			
78	5 cal thc/h	P2-E6	D-MRM-THC-COOH-Hair-Test001.m	1021607.d	Sample		As Method			

Worklist Report

Agilent Technologies

	Sample Name	Sample Position	Method	Data File	Sample Type	Level Name	Inj Vol (µl)	Comment	Sample Group	Info.
79	10 cal thc/h	P2-E7	D-MRM-THC-COOH-Hair-Test001.m	1021608.d	Sample		As Method			
80	50 cal thc/h	P2-E8	D-MRM-THC-COOH-Hair-Test001.m	1021609.d	Sample		As Method			
81	100 cal thc/h	P2-E9	D-MRM-THC-COOH-Hair-Test001.m	1021610.d	Sample		As Method			
82	neg thc/h	P2-D1	D-MRM-THC-COOH-Hair-Test001.m	1021611.d	Sample		As Method			
83	b	P2-A1	D-MRM-THC-COOH-Hair-Test001.m	1021612.d	Sample		As Method			
84	SCP_InstrumentStandby() {MH_Acq_Scripts.exe}									


Agilent MassHunter Quantitative Analysis
File Edit View Analyze Method Update Report Tools Help
Analyze Batch
Layout:
Restore Default Layout
Sample: 192750040 thc/h
Sample Type: <All>
Compound: THC
ISTD: D9-COOH-THC
Sample
Name
Dil.
Data File
Type
Level
Acq. Date-Time
THC Meth...
Exp. Conc.
THC Results
RT
Resp.
MI
Calc. Conc.
Final Conc.
Accuracy
Qualifie...
Ratio
D9-COOH-TH...
neg thc/h 0.0500 1021601.d Sample 10/22/2019 8:16 AM
low qc thc/h 0.0500 1021602.d QC 3 10/22/2019 8:33 AM 150.0000 9.804 55402 144.8213 7.2411 96.5 79.0 7.098 136608
high qc thc/h 0.0500 1021603.d QC 5 10/22/2019 8:47 AM 300.0000 9.804 60306 158.9103 7.9455 53.0 73.4 7.098 138663
b 0.0500 1021604.d Sample 10/22/2019 9:00 AM 9.886 242 233.4594 11.6730 94 7.516 410
192750040 thc/h 0.0500 1021605.d Sample 10/22/2019 9:14 AM 9.774 1,070 13.5459 0.6775 91.1 7.098 9141G
b 0.0500 1021606.d Sample 10/22/2019 9:28 AM 9.926 276 302.4727 15.1236 40 6.742 376
5 cal thc/h 0.0500 1021607.d Cal 1 10/22/2019 9:42 AM 100.0000 9.804 22362 42.8537 2.1427 42.9 75.7 7.109 115811
10 cal thc/h 0.0500 1021608.d Cal 2 10/22/2019 9:56 AM 200.0000 9.804 75362 207.6451 10.3823 103.8 76.7 7.098 140481
50 cal thc/h 0.0500 1021609.d Cal 4 10/22/2019 10:10 AM 1000.0000 9.804 332514 1085.8714 54.2936 108.6 79.0 7.098 140517
100 cal thc/h 0.0500 1021610.d Cal 6 10/22/2019 10:24 AM 2000.0000 9.794 648225 1956.2998 97.8150 97.8 85.0 7.098 155077
neg thc/h 0.0500 1021611.d Sample 10/22/2019 10:38 AM 10.1... 755 1498.6757 74.9338 86.6 7.058 234
Compound Information
Minutes
+ MRM (315.2 -> 193.1) 1021605.d Smooth
9.774 min.
Counts
Acquisition Time (min)
+ MRM (315.2 -> 123.0) 1021605.d Smooth
Ratio = 91.1 (127.0 %)
9.753 min.
+ MRM (9.682-9.886 min, 21 scans) (315.2 -> "") 1021605.d
193.1
123.0
315.2
Mass-to-Charge (m/z)
- MRM (352.2 -> 308.1) 1021605.d Smooth
7.098 min.
- MRM (6.956-7.271 min, 32 scans) (352.2 -> "") 1021605.d
308.1
352.2
Calibration Curve
Type: Linear
Origin: Include
Weight: None
ISTD
QC
CC
THC - 4 Levels, 3 Levels Used, 4 Points, 3 Points Used, 2 QCs
y = 0.002684 * x + 0.103799
R^2 = 0.99525499
Type:Linear, Origin:Include, Weight:None
Relative Responses
Relative Concentration
Processed
192750040 thc/h
THC
11 Samples (11 total)
10:15 AM
12/30/2019

Experlox

CONFIRMATION BATCH LOG

ASSAY: THC|H BATCH: 10031904

	Intial/Date		Initial Date
Aliquot:	MP 10.4.19	Instrument: LC 4	MP 10.4.19
Extraction/Derivatization:		Check Wash Vials:	2
Transfer to Autosampler Vials:		Vial Verification/Disposal:	CL 10/7/19
Placed in Sequence:		Carryover Verification:	

	Sample #	Accession #	Sample Amount	Ion Ratios and R.T. (Y/N)	RESULTS THC	RESULTS COOH
	1	Neg	—	Y	0	0
	2	low QC	75µL		6.2	5.6
	3	high QC	150µL		13	12
84	4	1927500444	0.0208 0.0480		38	0
79	5	1927500451	0.0181 0.0552		33	
67	6	1927600566	0.0216 0.0462		38	
20	7	1927600202	0.0189 0.0529		7.8	
48	8	1927600277	0.0215 0.0465		44	8.6
84	9	1927600299	0.0207 0.0483		11	0
43	10	1927600101	0.0180 0.0555		>100 (1071)	
84	11	1927600111	0.0183 0.0546		6.3	
80	12	1927600166	0.0186 0.0537		0	
83	13	1927600177	0.0201 0.0497		37	
74	14	1927600188	0.0180 0.0555		25	
78	15	1927600222	0.0180 0.0555		0	
86	16	1927600377	0.0188 0.0531		0	
79	17	1927600399	0.0213 0.0469		32	
81	18	1927600411	0.0180 0.0555		12	
90	19	1927600422	0.0213 0.0469		9.6	
70	20	1927600455	0.0206 0.0485		0	

QC Results: ✓ Acceptable ____ Unacceptable

Reviewed by: CL Date: 10/7/19

Certified by: KH Date: 10/7/19

	LOT#	Exp
Cal 1	082319CH	8.21
Cal 2		
Cal 3		
Cal 4		
QC 1	090919BC1	9.21
QC 2		
QC 3		

Comments: ____

This form approved by: Dr. Ernest Lykissa Lab Director

EXPERTOX

CONFIRMATION BATCH LOG - Continuation

ASSAY: THC|H BATCH: 10031904

#	Accession #	Sample Amount	IR&RT	THC Results	COOH
53 21	192760046	0.0181	0.0552 Y	7100 (159)	0
90 22	192690004 DR	0.0220	0.0484	5.9	↓
90 23	192760012 DR	0.0477	0.0209	0	↓
82 24	192750040 DR	0.0329	0.0303	7.5	↓
25	5 Cal	50		Ok	Ok
26	10 Cal	100		↓	↓
27	50 Cal	500		↓	↓
28	100 Cal	1	↓	↓	↓
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This form approved by Dr. Ernest D. Lykissa Lab Director Dr. Ernest D. Lykissa

Worklist Report

Agilent Technologies

	Sample Name	Sample Position	Method	Data File	Sample Type	Level Name	Inj Vol (µl)	Comment	Sample Group	Info.
13	b	P2-A1	D-MRM-THC-COOH-Hair-Test001.m	100412.d	Sample		As Method			
14	neg thc/h	P2-A3	D-MRM-THC-COOH-Hair-Test001.m	100413.d	Sample		As Method			
15	low qc thc/h	P2-A4	D-MRM-THC-COOH-Hair-Test001.m	100414.d	Sample		As Method			
16	high qc thc/h	P2-A5	D-MRM-THC-COOH-Hair-Test001.m	100415.d	Sample		As Method			
17	192750044 thc/h	P2-A6	D-MRM-THC-COOH-Hair-Test001.m	100416.d	Sample		As Method			
18	192750045 thc/h	P2-A7	D-MRM-THC-COOH-Hair-Test001.m	100417.d	Sample		As Method			
19	192760056 thc/h	P2-A8	D-MRM-THC-COOH-Hair-Test001.m	100418.d	Sample		As Method			
20	192760020 thc/h	P2-A9	D-MRM-THC-COOH-Hair-Test001.m	100419.d	Sample		As Method			
21	192760027 thc/h	P2-A10	D-MRM-THC-COOH-Hair-Test001.m	100420.d	Sample		As Method			
22	192760029 thc/h	P2-A11	D-MRM-THC-COOH-Hair-Test001.m	100421.d	Sample		As Method			
23	192760010 thc/h	P2-B1	D-MRM-THC-COOH-Hair-Test001.m	100422.d	Sample		As Method			
24	192760011 thc/h	P2-B2	D-MRM-THC-COOH-Hair-Test001.m	100423.d	Sample		As Method			
25	192760016 thc/h	P2-B3	D-MRM-THC-COOH-Hair-Test001.m	100424.d	Sample		As Method			
26	192760017 thc/h	P2-B4	D-MRM-THC-COOH-Hair-Test001.m	100425.d	Sample		As Method			
27	192760018 thc/h	P2-B5	D-MRM-THC-COOH-Hair-Test001.m	100426.d	Sample		As Method			
28	192760022 thc/h	P2-B6	D-MRM-THC-COOH-Hair-Test001.m	100427.d	Sample		As Method			
29	192760037 thc/h	P2-B7	D-MRM-THC-COOH-Hair-Test001.m	100428.d	Sample		As Method			
30	192760039 thc/h	P2-B8	D-MRM-THC-COOH-Hair-Test001.m	100429.d	Sample		As Method			
31	192760041 thc/h	P2-B9	D-MRM-THC-COOH-Hair-Test001.m	100430.d	Sample		As Method			
32	192760042 thc/h	P2-B10	D-MRM-THC-COOH-Hair-Test001.m	100431.d	Sample		As Method			
33	192760045 thc/h	P2-B11	D-MRM-THC-COOH-Hair-Test001.m	100432.d	Sample		As Method			
34	192760046 thc/h	P2-C1	D-MRM-THC-COOH-Hair-Test001.m	100433.d	Sample		As Method			
35	192690004 thc/h	P2-C2	D-MRM-THC-COOH-Hair-Test001.m	100434.d	Sample		As Method			
36	192760012 thc/h	P2-C3	D-MRM-THC-COOH-Hair-Test001.m	100435.d	Sample		As Method			
37	192750040 thc/h	P2-C4	D-MRM-THC-COOH-Hair-Test001.m	100436.d	Sample		As Method			
38	neg thc/h	P2-A3	D-MRM-THC-COOH-Hair-Test001.m	100437.d	Sample		As Method			

Worklist Report

Agilent Technologies

	Sample Name	Sample Position	Method	Data File	Sample Type	Level Name	Inj Vol (µl)	Comment	Sample Group	Info.
39	5cal thc/h	P2-C5	D-MRM-THC-COOH-Hair-Test001.m	100438.d	Sample		As Method			
40	10cal thc/h	P2-C6	D-MRM-THC-COOH-Hair-Test001.m	100439.d	Sample		As Method			
41	50cal thc/h	P2-C7	D-MRM-THC-COOH-Hair-Test001.m	100440.d	Sample		As Method			
42	100cal thc/h	P2-C8	D-MRM-THC-COOH-Hair-Test001.m	100441.d	Sample		As Method			
43	neg thc/h	P2-A3	D-MRM-THC-COOH-Hair-Test001.m	100442.d	Sample		As Method			
44	b	P2-A1	D-MRM-THC-COOH-Hair-Test001.m	100443.d	Sample		As Method			
45	b	P2-A1	OPI-H-2018.m	100444.d	Sample		As Method			
46	neg opi/h	P2-C9	OPI-H-2018.m	100445.d	Sample		As Method			
47	low qc opi/h	P2-C10	OPI-H-2018.m	100446.d	Sample		As Method			
48	high qc opi/h	P2-C11	OPI-H-2018.m	100447.d	Sample		As Method			
49	192760026 opi/h	P2-D1	OPI-H-2018.m	100448.d	Sample		As Method			
50	192760018 opi/h	P2-D2	OPI-H-2018.m	100449.d	Sample		As Method			
51	192760041 opi/h	P2-D3	OPI-H-2018.m	100450.d	Sample		As Method			
52	192760042 opi/h	P2-D4	OPI-H-2018.m	100451.d	Sample		As Method			
53	neg opi/h	P2-C9	OPI-H-2018.m	100452.d	Sample		As Method			
54	100cal opi/h	P2-D5	OPI-H-2018.m	100453.d	Sample		As Method			
55	200cal opi/h	P2-D6	OPI-H-2018.m	100454.d	Sample		As Method			
56	1000cal opi/h	P2-D7	OPI-H-2018.m	100455.d	Sample		As Method			
57	2000cal opi/h	P2-D8	OPI-H-2018.m	100456.d	Sample		As Method			
58	neg opi/h	P2-C9	OPI-H-2018.m	100457.d	Sample		As Method			
59	b	P2-A1	OPI-H-2018.m	100458.d	Sample		As Method			
60	b	P2-A1	AMP-COC-H-2017.m	100459.d	Sample		As Method			
61	neg amp+coc/h	P2-D9	AMP-COC-H-2017.m	100460.d	Sample		As Method			
62	low qc opi/h	P2-D10	AMP-COC-H-2017.m	100461.d	Sample		As Method			
63	high qc opi/h	P2-D11	AMP-COC-H-2017.m	100462.d	Sample		As Method			
64	192760034 amp/h	P2-E1	AMP-COC-H-2017.m	100463.d	Sample		As Method			
65	192760054 amp/h	P2-E2	AMP-COC-H-2017.m	100464.d	Sample		As Method			
66	192760025 amp/h	P2-E3	AMP-COC-H-2017.m	100465.d	Sample		As Method			
67	192760028 amp/h	P2-E4	AMP-COC-H-2017.m	100466.d	Sample		As Method			
68	192760030 amp/h	P2-E5	AMP-COC-H-2017.m	100467.d	Sample		As Method			
69	192760031 amp/h	P2-E6	AMP-COC-H-2017.m	100468.d	Sample		As Method			
70	192760008 amp/h	P2-E7	AMP-COC-H-2017.m	100469.d	Sample		As Method			
71	192760010 amp +coc/h	P2-E8	AMP-COC-H-2017.m	100470.d	Sample		As Method			
72	192760037 amp/h	P2-E9	AMP-COC-H-2017.m	100471.d	Sample		As Method			
73	192760039 amp/h	P2-E10	AMP-COC-H-2017.m	100472.d	Sample		As Method			
74	192760041 amp/h	P2-E11	AMP-COC-H-2017.m	100473.d	Sample		As Method			
75	192760042 amp +coc/h	P2-F1	AMP-COC-H-2017.m	100474.d	Sample		As Method			

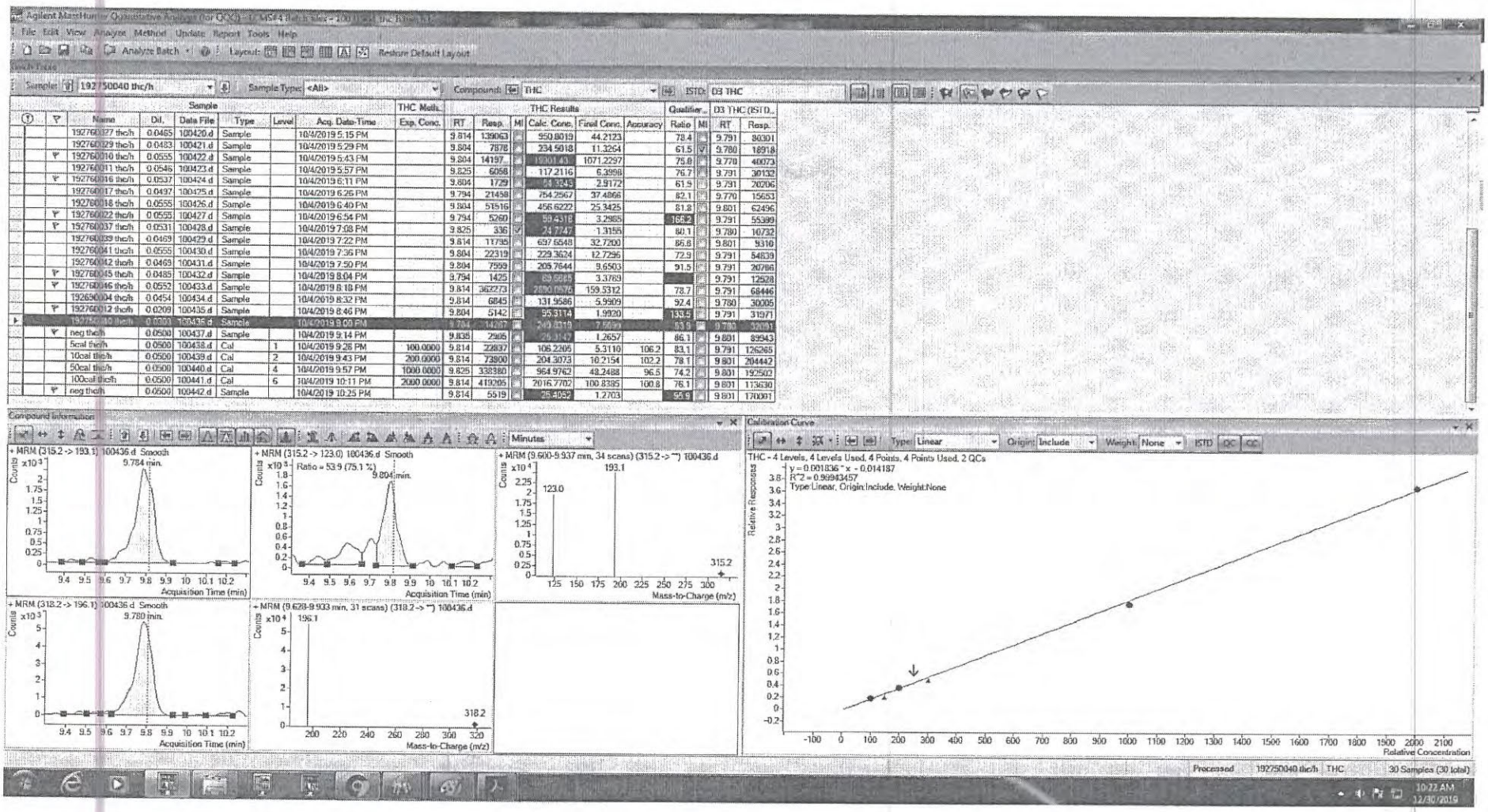

File Edit View Analyze Method Update Report Tools Help
Analyze Batch
Layout:
Restore Default Layout
Batch Table
Sample: 192750040 thc/h
Sample Type: <All>
Compounds: THC
ISTD: D3 THC
Sample
THC Meth...
THC Results
Qualifier...
D3 THC (ISTD...
Name | Dil. | Data File | Type | Level | Acq. Date-Time | Exp. Conc. | RT | Resp. | MI | Calc. Conc. | Final Conc. | Accuracy | Ratio | MI | RT | Resp.
192760027 thc/h | 0.0465 | 100426.d | Sample | | 10/4/2019 5:15 PM | | 9.814 | 139063 | | 950.8019 | 44.2123 | | 78.4 | | 9.791 | 80301
192760029 thc/h | 0.0483 | 100421.d | Sample | | 10/4/2019 5:29 PM | | 9.804 | 7878 | | 234.5018 | 11.3264 | | 61.5 | | 9.780 | 18918
192760010 thc/h | 0.0555 | 100422.d | Sample | | 10/4/2019 5:43 PM | | 9.804 | 14197 | | 19001.43 | 1071.2297 | | 75.8 | | 9.770 | 40073
192760011 thc/h | 0.0546 | 100423.d | Sample | | 10/4/2019 5:57 PM | | 9.825 | 6058 | | 117.2116 | 6.3998 | | 76.7 | | 9.791 | 30132
192760016 thc/h | 0.0537 | 100424.d | Sample | | 10/4/2019 6:11 PM | | 9.804 | 1729 | | 54.3243 | 2.9172 | | 61.9 | | 9.791 | 20206
192760017 thc/h | 0.0497 | 100425.d | Sample | | 10/4/2019 6:26 PM | | 9.794 | 21458 | | 754.2567 | 37.4866 | | 82.1 | | 9.770 | 15653
192760018 thc/h | 0.0555 | 100426.d | Sample | | 10/4/2019 6:40 PM | | 9.804 | 51516 | | 456.6222 | 25.3425 | | 81.8 | | 9.801 | 62496
192760022 thc/h | 0.0555 | 100427.d | Sample | | 10/4/2019 6:54 PM | | 9.794 | 5260 | | 89.4318 | 3.2985 | | 166.2 | | 9.791 | 55399
192760037 thc/h | 0.0531 | 100428.d | Sample | | 10/4/2019 7:08 PM | | 9.825 | 336 | | 24.7747 | 1.3155 | | 80.1 | | 9.780 | 10732
192760039 thc/h | 0.0469 | 100429.d | Sample | | 10/4/2019 7:22 PM | | 9.814 | 11795 | | 697.6548 | 32.7200 | | 86.8 | | 9.801 | 9310
192760041 thc/h | 0.0555 | 100430.d | Sample | | 10/4/2019 7:36 PM | | 9.804 | 22319 | | 229.3624 | 12.7296 | | 72.9 | | 9.791 | 54839
192760042 thc/h | 0.0463 | 100431.d | Sample | | 10/4/2019 7:50 PM | | 9.804 | 7959 | | 205.7644 | 9.6503 | | 91.5 | | 9.791 | 20786
192760045 thc/h | 0.0485 | 100432.d | Sample | | 10/4/2019 8:04 PM | | 9.794 | 1425 | | 69.5685 | 3.3789 | | | | 9.791 | 12528
192760046 thc/h | 0.0552 | 100433.d | Sample | | 10/4/2019 8:18 PM | | 9.814 | 362273 | | 2690.0576 | 159.5312 | | 78.7 | | 9.791 | 68446
192690004 thc/h | 0.0454 | 100434.d | Sample | | 10/4/2019 8:32 PM | | 9.814 | 6845 | | 131.9586 | 5.9909 | | 92.4 | | 9.780 | 30005
192760012 thc/h | 0.0209 | 100435.d | Sample | | 10/4/2019 8:46 PM | | 9.804 | 5142 | | 95.3114 | 1.9920 | | 133.5 | | 9.791 | 31971
192750040 thc/h | 0.0501 | 100436.d | Sample | | 10/4/2019 9:00 PM | | 9.794 | 14287 | | 249.3319 | 7.5699 | | 93.9 | | 9.780 | 32091
neg thc/h | 0.0500 | 100437.d | Sample | | 10/4/2019 9:14 PM | | 9.835 | 2905 | | 26.3147 | 1.2657 | | 86.1 | | 9.801 | 89943
5cal thc/h | 0.0500 | 100438.d | Cal | 1 | 10/4/2019 9:28 PM | 100.0000 | 9.814 | 22837 | | 106.2205 | 5.3110 | 106.2 | 83.1 | | 9.791 | 126265
10cal thc/h | 0.0500 | 100439.d | Cal | 2 | 10/4/2019 9:43 PM | 200.0000 | 9.814 | 73900 | | 204.3073 | 10.2154 | 102.2 | 78.1 | | 9.801 | 204442
50cal thc/h | 0.0500 | 100440.d | Cal | 4 | 10/4/2019 9:57 PM | 1000.0000 | 9.825 | 338380 | | 964.9762 | 48.2488 | 96.5 | 74.2 | | 9.801 | 192502
100cal thc/h | 0.0500 | 100441.d | Cal | 6 | 10/4/2019 10:11 PM | 2000.0000 | 9.814 | 419205 | | 2016.7702 | 100.8385 | 100.8 | 76.1 | | 9.801 | 113630
neg thc/h | 0.0500 | 100442.d | Sample | | 10/4/2019 10:25 PM | | 9.814 | 5519 | | 25.4092 | 1.2703 | | 95.9 | | 9.801 | 170091
Compound Information
Minutes
+ MRM (315.2 -> 193.1) 100436.d Smooth
9.784 min.
Counts
Acquisition Time (min)
+ MRM (315.2 -> 123.0) 100436.d Smooth
Ratio = 53.9 (75.1 %)
9.804 min.
Acquisition Time (min)
+ MRM (9.600-9.937 min, 34 scans) (315.2 -> ?) 100436.d
193.1
123.0
315.2
Mass-to-Charge (m/z)
+ MRM (318.2 -> 196.1) 100436.d Smooth
9.780 min.
Acquisition Time (min)
+ MRM (9.629-9.933 min, 31 scans) (318.2 -> ?) 100436.d
196.1
318.2
Mass-to-Charge (m/z)
Calibration Curve
Type: Linear
Origin: Include
Weight: None
ISTD
QC
CC
THC - 4 Levels, 4 Levels Used, 4 Points, 4 Points Used, 2 QCs
y = 0.001836 * x - 0.014187
R^2 = 0.99943457
Type:Linear, Origin:Include, Weight:None
Relative Response
Relative Concentration
Processed
192750040 thc/h
THC
30 Samples (30 total)
10:22 AM
12/30/2019

EXHIBIT B

ExperTox
drugs.alcohol.poisons.laboratory

1430 Center Street
Deer Park, Texas 77536
Ph. 281-476-4600
Fx. 281-930-8856
www.expertox.com

Date: February 25, 2020

RE: [redacted]

The undersigned has been practicing Clinical and Forensic Toxicology for the past 33 years. Presently I am in private practice in Deer Park, Texas. My educational background consists of a Bachelors (1970) and Master of Science (1971) in Microbiology from California State University at Long Beach. I was also awarded a Doctorate in Medicine & Experimental Surgery, and Molecular Pharmacology from University of Montreal (1979), Canada. I have taught Clinical and Forensic Toxicology for a number of years as associate professor at Baylor College of Medicine. In this career I have pursued the scientific study of drugs including their sources, appearance, chemistry, actions, and uses including ethanol (alcohol).

I have assisted, in numerous occasions, medical teams as the clinical Toxicologist in the diagnosis, treatment, and subsequent evaluation of patients through clinical Toxicological testing and interpretation. I am also presently performing with my team of scientists in our forensic laboratory, a number of daily evaluations and scientific measurements, involving the detection and quantitation of therapeutic or illicit drugs, and in assisting physicians involved in the critical care of head trauma patients, or patients that are suffering from serious toxicity syndromes involving drugs of abuse, heavy metals, and other toxins.

I have been asked to provide a professional opinion on the case of [redacted].

1. Expertox Hair Drug Test collected 09/30/2019

The hair test indicated an amount of D9-Tetra-Hydro-Cannabinol at the concentration of 7.5 pg/mg of hair. In addition, there was a positive finding of Lidocaine with the concentration of 3.9 pg/mg

It is my professional opinion that these amounts of THC and Lidocaine detected in Ms. [redacted] hair, constitute evidence of potential serious combined enhanced pharmacological effect to her ability to control her Mental and Physical faculties. If these drugs were administered to her without her consent, then that could constitute a drug facilitated assault by the perpetrator.

Ernest D. Lykissa Ph.D.
Molecular Pharmacology,
Medicine and Experimental Surgery
Clinical and Forensic Toxicologist
Expertox Laboratory Director

References:

1. Drug Abuse Handbook 2nd. Ed. Steven B. Karch M.D. Chapter CRC Press 2007.

2. Analytical and Practical Aspects of Drug Testing in Hair. Pascal Kintz Ed. 2007

EXHIBIT C

January 26, 2021

Rachel Black
District Attorney's Office
Three South Penn Square
Philadelphia, PA 19107

RE: Commonwealth v. [redacted] MC-51-CR-0025635-2019
NMS Expert Services Case No. 20311758

Dear Ms. Black:

You have retained National Medical Services, Inc., represented by Sherri L. Kacinko, Ph.D., as consultants in toxicology in the captioned case. You have requested that I review pertinent documents and form conclusions and opinions regarding the analysis, reporting, and interpretation of testing performed on a hair sample collected from [redacted]

In order to comply with your request, I reviewed a report and analytical data from ExperTox, Inc. (ExperTox).

Based on my review of these documents, it is my understanding that ExperTox performed testing on two segments of hair, one which was calculated to include the date of an alleged sexual assault (case specimen) and another from a separate time period which is referred to as "baseline". The requisition form for testing indicated that the client submitting the sample was ordering a miscellaneous test panel noted to be "Date Rape" and the issued report indicated the reason for testing to be "Court Ordered"; additionally, the requisition form indicated the client was interested in testing for lidocaine. The samples were tested for a variety of drugs by enzyme immunoassay (EIA) and liquid-chromatography tandem-mass spectrometry (LC-MS/MS); the complete scope of testing was not provided. The hair segment representing the date of interest was reported to contain <50 pg/mg Gamma-Hydroxy Butyric Acid (GHB), 7.5 pg/mg Delta-9 THC and 3.9 pg/mg lidocaine. The report indicates that the baseline hair contained 0.43 pg/mg lidocaine and no Delta-9 THC.

The following deficiencies were noted in the provided paperwork:

1) The document labeled "ExperTox Date Rape/GHB Hair Batch Log" contains a column labeled "Aliquot Date" but no date was indicated.
2) The only chromatography that was provided was for the lidocaine and Delta-9-THC analysis for the patient specimens (case and baseline). No examples of calibrator or control chromatography was provided.
3) No chromatography was provided for the GHB analysis.
4) The data provided for delta-9-THC does not include controls making it impossible to evaluate the reliability of the reported result.
5) The chromatography that was provided appears to be a "print screen" from the instrument software interface and is very difficult to read.

Based on the information provided above and my education, knowledge, training and experience, it is my opinion that the reported results are not reliable because of the reasons described below:

1) The testing performed does not align with the generally accepted requirements of forensic testing

Although the ExperTox report originally provided states "Results are for CLINICAL USE ONLY, NOT FOR FORENSIC PURPOSES", it is clear they knew that the results would be applied to a legal matter. The analytical data refers to the requested testing as "Date Rape" and the report indicates that the reason for testing is "Court Ordered". A copy of the report without this statement was also provided upon request. Therefore, the testing performed should adhere to the expectations of forensic testing.

2) The testing for lidocaine did not contain appropriate quality control (QC) samples

The data provided for the lidocaine testing (pages 19-21, 36-41) indicates that quantification of lidocaine in hair was achieved using a single calibrator and at most, a single QC sample. In general, a minimum of two QC samples should be run concurrently and the concentrations of these controls should encompass the analytical measurement range (AMR) of the assay. For assays which only include a single calibrator, the AMR should be established during validation and controls, with concentrations less than and greater than the calibrator concentration, are required to ensure that the test is reliable at the time of patient sample analysis.

Data for the analysis of the baseline sample for lidocaine can be found on pages 19-21 of the included documentation. On page 19 it indicates that the analytical run included a negative control, the patient baseline sample, a low calibrator and a high calibrator. The data on page 21 labels the high calibrator as a QC and it was not used in the generation of the calibration curve. No QC sample with a concentration less than the low calibrator was analyzed.

The data for the analysis of the case specimen is on pages 36-41. It appears the testing was performed twice as there are two confirmation batch log documents. The confirmation batch log found on page 39 shows three samples being analyzed – "neg", the case specimen, and "cal", but no chromatography was provided from this batch. Handwritten notes show the results of this analysis as "0", "Detected (0.5)" and "Pos" for the three specimens, respectively. Despite no indication of a QC sample being included in this batch, the document indicates the QC was "acceptable".

The confirmation batch log for the reported lidocaine result (page 36) does not indicate that a QC was run, however the analytical data (page 41) shows a QC sample noted to be Level 5 with an expected concentration of "1000". The expected calibrator concentration was "100"; like the baseline sample, no QC sample with a concentration less than the calibrator concentration was included.

This is not only poor practice, it is specifically out of compliance with The College of American Pathologists (CAP) Forensic Drug Testing accreditation, which ExperTox holds. Page 16 of the CAP Chemistry and Toxicology checklist says:

Daily quality control must be run as follows:

1. *Quantitative tests - two controls at different concentrations at least daily*
2. *Qualitative tests - a negative control and a positive control (when applicable) at least daily*

3) The method used to quantify the baseline specimen and case specimen are inconsistent.

It is difficult to fully evaluate the data provided for the lidocaine quantification because it is unclear what concentrations were used to calibrate the assays. Both the baseline specimen data (p. 21) and the case specimen data (pg. 41) show that a single calibrator was employed and that a sample labeled "Cal" was used as a QC. Although, the method used to quantify the baseline and case specimens appear to be different. In

both cases the calibrator and QC are labeled as "Level" 2 and 5 with expected concentrations of 100 and 1000 pg/mg, respectively.

However, for the baseline specimen it appears that the final results are reported as a "percent of" the actual calibrator concentration, which appears to be 2 (no units provided, assuming pg/mg based on reported results). This conclusion is based on the values found in the columns labeled "Calc Conc" and "Final Conc". Based on this assumption, the concentration of the QC sample is 5.1 pg/mg (254% of 2), which is consistent with what appears on the data.

For the case specimen batch, the "Calc Conc" and "Final Conc" are identical. This suggests that in this case the concentrations of the calibrator and QC sample are 100 and 1000 pg/mg, respectively.

4) The single-point calibration used to quantify lidocaine in the case specimen was not successful

Because it is not clear how quantification was performed for the case specimen, two scenarios were considered. In either case, the batch should not have been considered acceptable.

1. *The concentrations of the calibrator and QC were 100 and 1000 pg/mg, respectively.*

   This appears to be the case considering the reported result of 3.9 pg/mg. In this case the run should have been rejected because the QC final concentration (427) was less than 50% of the expected concentration. Further, a second sampled (labeled as a QC) with an expected concentration of 1000 also quantified at less than 50% of target and the notes on the confirmation batch log indicated that the peak plateaued.

2. *The concentrations of the calibrator and QC were 2 and 5 pg/mg, respectively (as appears to be the case in the baseline specimen batch) and the analyst did not properly calculate the final results.*

   In this scenario, the final concentration of the QC would have been 8.5 pg/mg, which is 70% greater than the expected concentration (5 pg/mg) and the patient specimen concentration would be 3.9% of the calibrator concentration, or 0.08 pg/mg, for which there is no corresponding appropriate control.

It is clear that no matter how the results were calculated for the analysis of the patient specimen, the results were unacceptable and no results should have been reported.

5) The analytical results do not support a positive identification of lidocaine in the baseline or case specimen.

There are three essential parameters to positive identification by LC-MS/MS:

1) Chromatography
2) Transition ratios
3) Retention time (or relative retention time)

In this case, the transition ratios were all unacceptable, which is documented on the chromatography (pgs. 21 & 41). The instrument software (Agilent Masshunter) can be programmed to highlight elements of the analytical data that do not meet pre-defined criteria. This is often used to quickly draw the analyst's attention to potential problems, but it is still vital for the analyst to evaluate each parameter. To determine if a patient sample contains an analyte of interest, the transition ratio of the patient sample should be compared to the transition ratio of the calibrator(s). The required agreement between the ratios can vary but usually

laboratories adhere to generally accepted guidance -- the agreement should be within ±50% at most (20-30% is more commonly used). In this case, the transition ratios for the patient samples (baseline and case specimen) were 0.7 while the calibrator transition ratios were 1.8 and 1.7. In other words, the patient samples had a ratio that was >60% lower than the calibrator sample.

6) **It is not appropriate to report GHB as <50 pg/mg when the confirmation cutoff concentration is 3000 pg/mg.**

In qualitative tests the term "cutoff" is generally used to describe the concentration which differentiates a positive sample from a sample that should be reported as "None Detected". If the case specimen met all the criteria to identify GHB as present but the concentration was determined to be less than the cutoff it may be appropriate to report it as <3000 pg/mg but it is not acceptable to report it as <50 pg/mg.

****

In summary, the analysis of hair performed by ExperTox, Inc. is scientifically inadequate and the analytical data do not support the reported results. The data provided show a disregard for good laboratory practices and calls into question the reliability of results generated by this laboratory. Because the results are unreliable it would be inappropriate to offer interpretation on the clinical or forensic impact of the reported compounds in an individual.

These conclusions are based on the information available for my review at this time. If additional information becomes available, I will be happy to review this new information and re-evaluate my stated opinions and conclusions.

Respectfully,

Sherri Kacinko, Ph.D., F-ABFT
Toxicologist

EXHIBIT D

Link to video of Texas Forensic Science Commission Quarterly Meeting, January 29, 2021; discussion of the complaint against ExperTox begins at 49:10. Dr. Lykissa joins the meeting at 51:31.

https://txcourts.zoom.us/rec/play/NTFY1l54Fzw4pRO3lixys-YwgLgaOKbE5wwz5vlaXzvd2FgyjIFAHQ2YN2MRmcKYF1WyUKMWGMcKlL1g.UWfYYaG2VPJnU4FJ?continueMode=true&_x_zm_rtaid=o5fj3Pd7Sdup5i5OnX3ugA.1659989596143.ea89d7a348e4a771b8fc3dd956e6667d&_x_zm_rhtaid=482

EXHIBIT E

AFFIDAVIT

STATE OF NEW YORK

COUNTY OF NEW YORK

Before me, the undersigned authority in and for the State of New York, on this day personally appeared Rachel L. Black, who, after being by me duly sworn, deposed and said:

My name is Rachel L. Black. I am of sound mind, 18 years of age or older,and competent to give this affidavit.

I am an attorney duly licensed to practice law in New York State and the Commonwealth of Pennsylvania. I have been practicing in criminal law since 2011. I joined the Philadelphia District Attorney's Office ("DAO") as a prosecutor in March of 2019. I was assigned to the Conviction Integrity and Special Investigations Unit. In the summer of 2019, a complaining witness made a report to Philadelphia Police Department's Internal Affairs Department ("IAD"). In turn, In IAD contacted my supervisor, Tracy Tripp, to seek search warrants related to the allegations. I was assigned to conduct a coordinate investigation along with Sergeant Gerald Rocks, Jr., Interim Director of the County Detectives for DAO.

During our investigation, Sergeant Rocks and the undersigned learned that the complainant reported allegations of being sexually assaulted and drugged within 24 hours of the alleged incident. The complainant explicitly stated that she was requesting an examination to remain anonymous because the alleged perpetrator was an active-duty police officer. The complainant was accompanied by an outcry witness, a social worker. This witness reiterated the complainant's intention to report the sexual assault once the complainant found a safe way to do so both to the hospital staff and to the undersigned. Both the complainant and the outcry witness told the undersigned that the complainant provided blood and urine samples to the hospital.

The undersigned contacted the Philadelphia County drug laboratory, DrugScan, to learn the results of the drug test and was informed that no samples had been sent for analysis. I then contacted the head of the location that had taken the urine and blood samples, PSARC, who was a retired Philadelphia

police officer. The undersigned was informed that there was an error on the paperwork and that as a matter of city policy, no blood or urine samples are taken from anonymous or "Jane Doe" complainants during rape kit examinations.

Closer examination of the paperwork indicated that blood and urine were taken in more than one location, suggesting that any "error" was made repeatedly by the assigned nurse. Moreover, as noted above, both the complainant and the outcry witness attested to samples being taken. As a result, the undersigned interviewed the nurse who filled out the paperwork that night.

In her interview, the nurse explained that based on the nature of the allegations and the detail of the complainant's narrative, protocol was not followed, and a blood and urine sample were indeed taken to attempt to capture evidence any drugs that may have been administered without consent. The complainant provided a blood sample and a urine sample that night and the nurse accurately filled out the PSARC paperwork indicating the samples had been taken. The nurse told the undersigned that she was later told by her supervisor to discard the samples because the complainant had not contacted the police department yet. According to the nurse, she complied.

The undersigned and Sergeant Rocks interviewed the complaining witness who presented a narrative with specific details that could be corroborated or disproved with investigation. The undersigned and Sergeant Rocks preserved and successfully obtained a copy of the officer's cell phone data pursuant to a search warrant. Upon reviewing the data, the undersigned and Sergeant Rocks found a video that depicted a sexual encounter between the complainant and the officer. While it corroborated everything that the complainant said, it also presented a complicated fact pattern for a jury.

The undersigned next sought to determine whether there was a forensic science that could still capture whether the complainant had been drugged and had learned that hair follicle analysis has been used to determine whether someone ingested drugs during a specific time frame and that that evidence has been introduced in criminal court proceedings in accordance with Frye and Daubert standards.

Upon further research, the undersigned learned that hair follicle analysis in Philadelphia was not performed by state laboratories but that various city agencies used a private laboratory, Arc Point Labs., for court-admissible hair follicle analysis. The undersigned went in person to ArcPoint Labs to interview and meet Dr. Schroff, ARCpoint President/CEO. I explained who I was, where I worked,

what sort of test I was looking for and what the purpose of the evidence would be for: use in a criminal case, be it exculpatory or inculpatory, the explicit purpose of the testing was to introduce any results in court; there is no basis upon which a prosecutor would seek to create inadmissible evidence. At this time, Dr. Schroff expressed a desire to work with the Conviction Integrity Unit. He told the undersigned that he receives requests from incarcerated people to retest evidence in criminal cases and that he would like to assist the DAO. Dr. Schroff further indicated that he was currently using hair follicle analysis in Philadelphia Family Court and in cases of parole and probation violations. The undersigned, as an agent of DAO, hired ArcPoint Labs to perform hair follicle analysis on the complaining witness on two occasions thereafter. The undersigned was never told that the actual test was performed by Expertox in another jurisdiction.

When the undersigned received the results from the first test, the undersigned called Dr. Schroff to speak to understand the significance of the findings, if any. The undersigned and Dr. Schroff discussed the THC levels and the GHB levels and Dr. Schroff explained that the GHB levels were naturally occurring. The undersigned asked if there was any way that someone could be drugged and have it not evidenced in a hair follicle sample. Dr. Schroff told the undersigned that there is a real possibility that GHB and other date rape drugs may not appear for a period of time after the incident. Thus, we may have tested the complainant's hair too soon. Dr. Schroff also discussed the possibility of using a more specific and detailed panel that can be run in sexual assault cases. The undersigned sought and received approval to hire ArcPoint Labs to do a second hair follicle test for the complainant.

During that time, another search conducted of the officer's home yielded a bottle labeled 'lidocaine' next to the bed where the sexual assault had allegedly occurred. Without mentioning the purpose of the request, the undersigned requested in writing that lidocaine be added to the list of substances that were screened for by ArcPoint labs. At the time of the second test, the undersigned was still unaware that the tests were being performed at another laboratory.

At some time shortly thereafter, DAO received the results that seemed to indicate that a test had captured some combination of substances in the complainant's system at the time of the incident. The undersigned again sought clarification of what the results meant, if anything from Dr. Schroff. The undersigned also requested educational resources to better understand the science in advance of litigation. This was the first time the undersigned was directed to Dr. Ernest Lykssa and Expertox. The undersigned also sought additional supervisory guidance from colleague Carrie Wood.
During this time, the undersigned explicitly asked both Dr. Schroff and Dr. Lykssa what it meant that

the report read "not for forensic purposes." The undersigned explained that for a criminal case, the report must be admissible in a court of law. The undersigned notes reflect that the undersigned stated in sum and substance that I "need a court admissible copy." Both Dr. Schroff and Dr. Lykssa told the undersigned that DAO simply needed to pay for the forensically admissible copy. The undersigned again went to my supervisor, Tracy Tripp, and to Human Resources to request money for a court admissible version of the report. The undersigned filled out internal DAO documentation including request forms and financial requests for "a court admissible version" or a "court admissible copy" of the document. At no time was the undersigned ever told by Dr. Schroff or Dr. Lykssa that the data and conclusions contained in the analysis were not court admissible because they lacked forensic reliability. Instead, it was presented to the undersigned matter-of-factly by both doctors as a pricing issue. The undersigned subsequently used this report in a criminal court proceeding against the defendant in January of 2020.

The undersigned has had an opportunity to review Dr. Lykssa's testimony regarding this matter at Forensic Science Commission Quarterly meeting. There and during my interview with the Forensic Science Commission in April of 2021, the undersigned learned that Dr. Lykssa has since stated that: 1) the data and conclusions provided by Expertox to DAO were not forensically reliable and 2) Dr. Lykssa did not want to testify or provide court admissible documentation regarding these findings as a result. This is not true.

Contrary to his testimony at the Forensic Science Commission, Dr. Lykssa specifically told the undersigned that he would be willing to write a brief report or fly to Philadelphia testify. He further stated that the officer in question gave the complainant "a witches brew" that night and repeatedly told the undersigned "you got him." At no time did Dr. Lykssa express any hesitation, concern, or reluctance regarding the validity of his findings. Instead and on the contrary, because Dr. Lykssa's answers were reductive and dismissive, he left the undersigned with concerns about his reliability and relatability on the stand, even if reliable.

As a result, the undersigned went back to supervisors Carrie Wood and Tracy Tripp and expressed the concerns above. The undersigned then sought and received permission and financial approval from DAO to send the data provided by Expertox to NMS Laboratory for review. Upon learning from NMS Laboratory that the data was unreliable, the DAO reported Expertox to the Texas Forensic Science Commission.

I have read the above statement consisting of 5 page(s), which is based on my personal knowledge, and it istrue and correct.

Subscribed and sworn to before me, ~~the undersigned authority~~, on this the 30th day of September A.D. 2021.

~~Notary~~

PRIYA CHAUDHRY
NOTARY PUBLIC, STATE OF NEW YORK
No. 02CH6173253
Qualified in New York County
Commission Expires ~~August 27, 20~~ September 23, 2023

OIG-2

EXHIBIT F

ExperTox®
drugs.alcohol.poisons.laboratory

1430 Center Street
Deer Park, TX 77536
Ph: 281-476-4600
Fax: 281-930-8532
www.expertox.com

Client: **Arcpoint - Philadelphia**
Addr: **233 S 6th St, Independence, Unit C-2**
Philadelphia, PA 19106
Phone: **(412) 370-8295**
Contact:

First Name: [redacted]
Last Name:
ID: **XXX-XX-[redacted]**

Test Name: **DFSA w/o ETG**
Profile: **HFC9130**
Media: **Hair**
Reason: **Court Ordered**

Specid: **A308361**
Acc #: **192750040**
Collected: **09/30/2019 12:15 PM**
Received: **10/02/2019 10:05 AM**
Released: **10/24/2019 5:12 PM**
Status: **COMPLETE**

Drug/Test	Lab Result	Confirm Value	Screen Cutoff	Confirm Cutoff	Confirm Type
GAMMA-HYDROXY BUTYRIC ACID					
Gamma-Hydroxy Butyric Acid	**DETECTED**	**<50 pg/mg**		3000 pg/mg	GCMS
BARBITURATES	Non-Detected				GCMS
BENZODIAZEPINES	Non-Detected				LCMSMS
OPIOIDS	Non-Detected				LCMSMS
SEDATIVES/HYPNOTICS	Non-Detected				LCMSMS
OVER-THE-COUNTER DRUGS	Non-Detected				LCMSMS
MUSCLE RELAXANTS	Non-Detected				LCMSMS
HALLUCINOGENS					
Delta9-THC	**DETECTED**	**7.5 pg/mg**			LCMSMS

Test Comment:

Removed 0.625" of head hair, next 0.5" of head hair tested (Approx. growth timeframe 07/16/2019 - 08/13/2019, Inc Date 08/08/2019 and 08/09/2019)

Additional Findings:

Lidocaine detected at 3.9 pg/mg

***Baseline**: Removed 1.125" of head hair, next 0.5" of head hair tested (Approx. growth timeframe 06/18/2019 - 07/16/2019)

Baseline Findings:

Lidocaine Detected at 0.43 pg/mg

Delta9-THC Not Detected in Baseline

*Gamma-Hydroxy Butyric Acid result consistent with endogenous levels (naturally produced in the body)

This test is developed and validated by Expertox Laboratory. This is not a FDA approved test.

Result Reviewed by: Dr. Shaiju Vareed and Dr. Ernest Lykissa

The preceding result has been reviewed and is certified to be as reported. Brandon Cox (Certifying Scientist)

EXHIBIT G

TEXAS FORENSIC
SCIENCE COMMISSION
Justice Through Science
1700 North Congress Ave., Suite 445
Austin, Texas 78701

March 22, 2021

Ernest Lykissa, Ph.D.
ExperTox
1430 Center Street
Deer Park, TX 77536

RE: Forensic Science Commission Complaint #20.55 Wood, Carrie (Expertox; Toxicology)

Dear Dr. Lykissa:

Pursuant to its investigation in the matter referenced above, the Commission requests responses to the following questions:

1. Over the last three years, in how many cases was Expertox aware that a prosecutor, defense attorney, or criminal court received the results of an analysis performed by Expertox?

2. Over the last three years, how many times has Expertox issued a report containing an interpretative opinion? [1]

3. What is Expertox's policy related to the use of the following language "Results are for CLINICAL USE ONLY, NOT FOR FORENSIC PURPOSES"?

4. For which controlled substances does Expertox offer hair follicle testing?

If you have any questions about the requested information, please contact me directly via email at Robert.Smith@fsc.texas.gov.

Sincerely,

Robert Smith

Robert Smith
Staff Attorney
Texas Forensic Science Commission

[1] Including, but not limited to, reports with language such as ""It is my professional opinion that these amounts of [controlled substances/drugs] in the [subject's] hair constitute evidence of potential serious combined pharmacological effect to her ability to control her mental and physical faculties" or similar type language.

EXHIBIT H

ExperTox
drugs.alcohol.poisons.laboratory

1430 Center Street
Deer Park, Texas 77536
Ph. 281-476-4600
Fx. 281-930-8532
www.expertox.com

Date: March 29, 2021

Robert Smith Esq.

1. In the last 3 years I can recall of five cases (see below) in which the Donors of the Hair specimen submitted the reports of Expertox to authorities , as proof of abstinence or adherence to Court dictates (i.e. probation). To clarify, the report was issued to the submitting collection facility, which forwarded the report to the Donor of the Hair specimen

2. In the last 3 years and in at least 5 instances that I can recall, out of state District Attorneys demanded phone interpretation of hair testing results. In every occasion they also asked for written interpretational reports which I declined in every case, and asked them to call NMS Labs in Pennsylvania.
For example, in the Wood Carrie case in Philadelphia, the DA asked me to testify on this case for which I declined since the test had been performed for Clinical Use only. The reason been that we did not have, a Forensically validated hair testing method for Lidocaine at this time, only for clinical testing. Then the DA literally begged me to write something down hypothetically for the Lidocaine and THC combined effect on someone's mental state which reluctantly I did (my wrong decision) send her the standard report I issue to the Medical Centers in the Houston area to Medical Doctors handling critical care patients.. I also recall telling her that the Lidocaine detected in the baseline segment was disproving the claim of the plaintiff that the Lidocaine was administered by the defendant. Only the THC was pertinent. I also advised her to talk to NMS for supportive testimony. The complaint was filed with your Commission by the Defense Attorney who demanded from my assistants, for me to consult with her which I declined.
Please note: In the last 3 years, there have been multiple phone consultations with Medical Practitioners about the Clinical significance of the hair testing findings issued by my Laboratory. In these cases, i.e. Memorial Hermann Prevention Facility for Substance Abuse Rehabilitation, and for Critical Care patients in Hermann Hospital and Children's Hospital of Houston written interpretational reports were issued.

3.The statement on our reports, issued by our laboratory, "FOR CLINICAL USE ONLY AND NOT FOR FORENSIC PURPOSES", is utilized as a disclaimer for establishing the validity of our published results only for the clinical practice that originally ordered these test reports. No attorneys or prosecutors may issue subpoenas for these tests since they were not performed with forensic criteria (i.e., valid Forensic

Chain of Custody, Forensically validated methods). The Forensic Mandates in accordance to the mandates of our National Forensic Accreditation by the College of American Pathologists, are only utilized for testing hair samples of, i.e., Houston Police Deputies, and for Human Resources Entities, for Pre- Employment of new Hires, and or for Cause on the job sites of Houston.

4.
Expertox List of Hair Drug Testing Confirmations by GCMS/LCMSMS

Amphetamine, Methamphetamine, MDA, MDMA (Extasy), MDEA,
THC and metabolites,
Opiates, 6- Acetylmorphine,
Cocaine and metabolites,
PCP,
Benzodiazepines and metabolites,
Barbiturates,
Methadone and metabolite,
Propoxyphene and metabolite,
Meperidine and metabolite,
Tramadol and metabolite,
Fentanyl, Sufentanyl, Ketamine and metabolite,
Lidocaine,
Promethazine,
Amitriptyline, Nortriptyline, Imipramine, Desipramine, Doxepin, Desmethyl-Doxepin,
Buprenorphine and metabolite,
Chlorpheniramine,
Citalopram,
Sertraline,
Dextromethorphan,
Dimethyltryptamine,
Diphenhydramine,
Ethyl Glucuronide,
Fluoxetine,
Gabapentin,
GHB (Gamma Hydroxy Butyrate), 1,4 Butanediol
Mitragynine,7-Hydroxymitragynine,
LSD, 2-OXO-3-OH-LSD,
Methylphenidate,
Naltrexone,
Tizanidine,
Nicotine, Cotinine,
Psilocybin, Psilocin,
Scopolamine,
Tapentadol,

Doxylamine, Brompheniramine,
Carisoprodol, Meprobamate,
Cyclobenzaprine,
Methocarbamol,
Phentermine
Methaqualone,
Zolpidem, Zopiclon

Note: Dr. S. Vareed and myself have obtained Provisional Texas Forensic Analyst Licenses at this time (early in March 2021). And need be by the commission we will seek whatever additional accreditations will satisfy any requirements we must meet.

Ernest D. Lykissa Ph.D.
Molecular Pharmacology,
Medicine and Experimental Surgery
Clinical and Forensic Toxicologist
Expertox Laboratory Director

EXHIBIT I

TEXAS FORENSIC
SCIENCE COMMISSION
Justice Through Science
1700 North Congress Ave., Suite 445
Austin, Texas 78701

LIST OF DOCUMENTS REVIEWED IN CONNECTION WITH TFSC COMPLAINT NO. 20.55 FILED BY CARRIE WOOD AGAINST EXPERTOX, INC.

1. Complaint no. 20.55, Wood, Carrie (ExperTox, Inc) and all attachments.

2. Report on ExperTox testing and results from Dr. Sherri Kacinko of NMS Laboratories, consulting toxicologist for Philadelphia, PA District Attorney's Office.

3. Expertox's case file for the subject forensic analysis performed in the Philadelphia criminal case, *Commonwealth v.* [redacted], MC-51-CR-0025635-2019.

4. Court Transcripts from the *Commonwealth v.* [redacted] Philadelphia criminal case.

5. Supplemental material requested by TFSC and produced by ExperTox.

6. Copies of correspondence produced by the Philadelphia DA's Office, ARCpoint Labs, and ExperTox, Inc.

7. Report produced by Dr. Timothy Rohrig, TFSC's subject matter expert, and underlying documentation.

8. TFSC and ExperTox correspondence with ExperTox accrediting body, the College of American Pathologists ("CAP").

9. Transcripts of deposition testimony of Dr. Ernest Lykissa in unrelated S. Carolina case.

EXHIBIT J

TIMOTHY P. ROHRIG, Ph.D., F-ABFT
Consultant in Pharmacology and Toxicology
2017 N. Castle Rock
Wichita, Kansas 67230

www.pharmacology-toxicologyconsultant.com

EDUCATION

University of Missouri-Kansas City
Kansas City, Missouri
Ph.D. degree awarded 1984
Pharmaceutical Science
Major Emphasis Area: Pharmacology/Toxicology

Rockhurst College
Kansas City, Missouri
B.S. degree awarded 1978
Major: Chemistry

Johnson County Community College
Overland Park, Kansas
Undergraduate: Non-degree course
Emergency Medical Technician – Fall 1979

BOARD CERTIFICATION

American Board of Forensic Toxicology
Certificate Number 181/1267
Granted March 1989

LICENSE

State of New York, Clinical Laboratory Director; CQ Number ROHRT1
September 1997 – September 2019
Inactive Status September 2019 - Present

New York State Department of Health
Blood and Urine Alcohol Analyst Permit
Gas Chromatography, Flame Ionization Detection, Headspace Sampling
January – December 2000

Kansas Emergency Medical Services Registry
Emergency Medical Technician [EMT] 1980 - 1983

ACADEMIC APPOINTMENTS

Principle Lecturer in Toxicology/Visiting Professor
Emporia State University
Emporia, Kansas 66801

January 2020 – Present

Visiting Professor of Forensic Toxicology
University of Lincoln
Lincoln LN6 7TS United Kingdom

February 2017 - Present

ACADEMIC APPOINTMENTS con't

Adjunct Professor of Criminal Justice and Forensic Science
Wichita State University
Wichita, Kansas 67260

December 2003 – October 2019

Clinical Assistant Professor of Pathology
University of Kansas
School of Medicine-Wichita
Wichita, Kansas 67214

July 1, 2001 – June 30, 2012

Clinical Assistant Professor of Pathology
State University of New York
Upstate Medical University (formerly known as Health Science Center-Syracuse)
Syracuse, New York 13210

January 1, 1999 – July 31, 2000

Adjunct Assistant Professor of Pharmacology and Toxicology
University of Oklahoma, Health Sciences Center
College of Pharmacy
Oklahoma City, Oklahoma 73190

April 1989 - August 1994

EMPLOYMENT

Consultant in Pharmacology and Toxicology
2017 N. Castle Rock
Wichita, KS 67230

January 1989 – Present

Regional Forensic Science Center
1109 N. Minneapolis St.
Wichita, Kansas 67214

Present Position: Chief Toxicologist [Part-Time]

April 2020 – December 2022

EMPLOYMENT CONT.

Regional Forensic Science Center
1109 N. Minneapolis St.
Wichita, Kansas 67214

Position: Director

January 2007 – October 2019

Position: Director, Forensic Science Laboratories and Chief Toxicologist

August 2000 – October 2019

Center for Forensic Sciences
Onondaga County Health Department
100 Elizabeth Blackwell
Syracuse, New York 13210

Position: Director of Laboratories

August 1998 – July 2000

Osborn Laboratories, Inc.
14901 West 117th Street
Olathe, Kansas 66062

Position: Vice President and Director of Toxicology

August 1994 – July 1998

Office of the Chief Medical Examiner
901 North Stonewall
Oklahoma City, Oklahoma 73117

Position: Chief Forensic Toxicologist

June 1991 - August 1994

Position: Deputy Chief Forensic Toxicologist

August 1987 - May 1991

Kansas Bureau of Investigation
Forensic Science Laboratory
1620 Tyler
Topeka, Kansas 66612

Position: Chief Forensic Toxicologist

February 1986 - August 1987

EMPLOYMENT CONT.

Office of the Chief Medical Examiner
701 Jefferson Road
South Charleston, West Virginia 25309

Position: Toxicologist

August 1985 - February 1986

Kansas Bureau of Investigation
Forensic Science Laboratory
1620 Tyler
Topeka, Kansas 66612

Position: Forensic Toxicologist

September 1983 - August 1985

Rockhurst College
Department of Chemistry
5225 Troost Avenue
Kansas City, Missouri 64110

Position: Lecturer

August 1980 - May 1983

Midwest Research Institute
Organic and Radiochemical Synthesis Section
4225 Volker Boulevard
Kansas City, Missouri 64110

Position: Assistant Chemist/Supervisor, Analytical Support Group

June 1979 - August 1980

Position: Junior Chemist

May 1978 - May 1979

PROFESSIONAL ORGANIZATIONS

American Academy of Forensic Sciences

Toxicology Section – Provisional Member (1986 – 1989)
Member (1990 – 1993)
Fellow (1993 – present)
Toxicology Section – Workshop Chairman (2003)
Toxicology Section – Awards Committee (2002 – 2005)
Toxicology Section - Program Committee (2003 – 2004)
Toxicology Section – Membership Committee (2004 – 2006)
Toxicology Section – Continuing Education Committee (2004 – 2005)
Toxicology Section – Secretary (2004 – 2005)
Toxicology Section – Chairman (2005 - 2006)
AAFS Nominating Committee (2006)
Toxicology Section Nominating Committee – Chairman (2007), Member (2016-17)
Toxicology Section - Awards and Scholarship Committee Chairman (2018-2020)

Alcohol, Drugs and Impairment Division
[Previously known as Committee on Alcohol and Other Drugs]
National Safety Council

Member (1990 – Present)

International Association of Forensic Toxicologists

Member (1993 – Present)

Midwestern Association of Forensic Scientists

Member (1986 – Present)
Toxicology Section Coordinator (1987)

Society of Forensic Toxicologists

Member (1985 – Present)
Budget, Finance and Audit Committee (1989-1991)
Membership Committee (1991-1993)
Member of Board of Directors (2000-2002)
Guest Editor, SOFT/JAT October Special Issue (2001)
Drug Facilitated Sexual Assault [Crimes] Committee (2002 – 2022)
Treasurer (2002 – 2004)
Vice President (2005)
President (2006)
Ex-officio Member of Board of Directors (2007)
Nominating Committee – Chair (2007) and Member (2013)
Liaison to the National Association of Medical Examiners (2008 – 2009)
Drugs & Driving Committee; joint with AAFS (2016 – Present)
Oral Fluid Subcommittee (2016 – 2018; elevated to full committee)
Oral Fluid Committee (2019 – Present)
Awards Committee – Chairman (2021- Present), Member (2020 – Present)

PROFESSIONAL ORGANIZATIONS con't

Southwestern Association of Toxicologists

Member (1987 – Present)
Counselor (1990-1991)
President-Elect (1991-1992)
President (1992-1993)
Board Member (1993-1994)
Secretary (1994-1998)

New York Crime Laboratory Advisory Committee

Member (1998 – 2000)
Assistant Chair (2000)

American Society of Crime Laboratory Directors

Member (2000 – Present)
Strategic Planning Committee (2003 – 2004)
Technical Advisory Committee – Toxicology (2005 – 2016)

American Board of Forensic Toxicologists

Nominating Committee (2002 – 2004)

OTHER PROFESSIONAL ACTIVITIES

Laboratory Inspector/Team Leader

DHHS (Known as the NIDA Program) National Laboratory Certification Program
November 1990 – June 2011

Laboratory Inspector

College of American Pathologists, Laboratory Accreditation Program
January 2003 – January 2005

Member

Oklahoma Partnership Against Inhalant Abuse Task Force
September 1993 - August 1994

Member

Sexual Assault Nurse Examiner Advisory Committee [New York]
December 1999 – July 2000

OTHER PROFESSIONAL ACTIVITIES con't

Instructor

Forensic Medical Investigation Review Course
November 2000 – 2005

Member

Wichita SANE/SART [Sexual Assault Nurse Examiner/Response Team] Advisory Board
November 2000 – December 2011
January 2013 – October 2019

Board Member

Wichita Area Sexual Assault Center
January 2007 – December 2012

Expert Panel Member

Toxicology/Controlled Substance Expert Panel
NIJ: Forensic Science and Technology Transfer Project
January – March 2007

Task Force Member

NIJ: Training Task Force
March – July 2013

Invited Visiting Professor
Erasmus Mundus Masters Programme
University of Lincoln
Lincoln LN6 7TS United Kingdom

January 2013 – January 2017

External Examiner for Viva Voce – PhD Candidate
University of Lincoln
Lincoln LN6 7TS United Kingdom

January 2016

Forensic Laboratory Needs Technology Working Group [FLN-TWG]
Office of Justice Program's (OJP) National Institute of Justice (NIJ)

Member

Aug 2018 - Present

OTHER PROFESSIONAL ACTIVITIES con't

National Institute of Justice (NIJ) Steering Committee
National Opioid Response Policy and Practice Forum –
Reducing Crime, Informing Public Health and Safety, and Strengthening Communities

Member

Feb 2019

Consortium of Forensic Science Organizations

Board Member

January 2016 - Present

Vice Chair

February 2022 - Present

HONORS

Rho Chi National Honorary Pharmaceutical Society Alpha Omega Chapter Univ of MO-KC 1982

American Academy of Forensic Sciences General Section Award 1989 - 1990

Who's Who in Science and Engineering, 2nd Ed., 1994/1995

American Academy of Forensic Sciences - Rolla N. Harger Award 2009

PRESENTATIONS

T. Rohrig, “Drug Exposure in CINC Cases”

Invited presentation at Best Practices in Child Welfare Law Training sponsored by Office of Judicial Administration-Kansas Judicial Center.

April 2023; Topeka, KS [virtual presentation]

T.P. Rohrig, “Etizolam: Toxicology Report to the Courtroom”

Presented at a workshop entitled “Driving Under the Influence: NPS Benzodiazepines” at the Society of Forensic Toxicologists Annual Meeting

November 2022; Cleveland, OH

T.P. Rohrig, “Tales of the Dead and One that Wasn’t”

Invited lecture at the George Washington University Law School

October 2019; Washington DC

T.P. Rohrig, “Drug Facilitated Sexual Assault-Miscellaneous Therapeutics: OTC Antihistamines, Tricyclic Antidepressants, and Carisoprodol”

Invited presentation at the California Association of Toxicologists Spring Meeting.

May 2019; Monteray, CA

T.P. Rohrig, “Alcohol, Memory and Alcohol-Induced Blackouts”

Invited presentation at the California Association of Toxicologists Spring Meeting.

May 2019; Monteray, CA

T.P. Rohrig, “Tales of the Dead and One that Wasn’t”

Invited lecture at Barts and The London School of Medicine and Dentistry, William Harvey Research Institute, Cameron Forensic Medical Sciences, Queen Mary University of London

January 2019; London UK

T.P. Rohrig, “Road-Side Drug Testing: An Evaluation of the Alere DDS®2 Mobile Test System”

Invited presentation at the 12th Annual Joint LEO/Prosecutor: Impaired Driving Seminar

October 2017; Wichita KS

PRESENTATIONS con't

T.P. Rohrig, "Social Drink and the Common Cold: Alcohol and Antihistamines in Drug Facilitated Sexual Assault"

Invited presentation at the International Association of Forensic Nurses – Kansas Chapter Meeting

August 2017; Wichita KS

T.P. Rohrig, "Driving Impairment Due To Inhalant Abuse"

Presented at the Graduate Seminar Series in Forensic Science at Emporia State University

April 2017; Emporia KS

T.P. Rohrig, "Carbon Monoxide Intoxications: Unusual Sources"

Presented at the Southwestern Association of Toxicologists Spring Meeting

April 2017; Wichita KS

S.A. Miller* and T.P. Rohrig, "U-47700: A Not So New Opioid"

Presented at the Southwestern Association of Toxicologists Spring Meeting

April 2017; Wichita KS

T.P. Rohrig, "Prescription Medications: They Can Impair Driving"

Invited Presentation at OSU Center for Health Sciences Friday Seminar Series

April 2017; Tulsa OK

T.P. Rohrig* and C.M. Moore, "Road-Side Drug Testing: An Evaluation of the Alere DDS®2 -A Pilot Study"

Presented at workshop held at the Kansas Drugged Driving Summit

October 2016; Topeka KS

T.P. Rohrig, "Oral Fluid: An Alternative Specimen for Drugged Driving Detection"

Presented at workshop held at the Annual Meeting of the Midwestern Association of Forensic Scientists

October 2016; Branson MO

PRESENTATIONS con't

T.P. Rohrig, "Drugs and Driving: Don't Take the High Road"

Presented at workshop held at the Annual Meeting of the Midwestern Association of Forensic Scientists

October 2016; Branson MO

T.P. Rohrig, "Interpretation of Hair and Urine Drug Test Results"

Presented at the Kansas Alliance for Drug Endangered Children- Sedgwick County seminar on Drugs-Effects, Testing, Trends and Professional Safety

September 2015; Wichita KS

T.P. Rohrig, Postmortem Interpretation 1: Interpretive Considerations and Challenges"

Presented at a workshop entitled "Postmortem Toxicology: From Autopsy to Interpretation" at the Society of Forensic Toxicologists Annual Meeting

October 2015; Atlanta GA

T.P. Rohrig, "Interpretation of Hair and Urine Drug Test Results"

Presented at the Kansas Alliance for Drug Endangered Children- Sedgwick County seminar on Drugs-Effects, Testing, Trends and Professional Safety

September 2015; Wichita KS

T.P. Rohrig, "Alcohol Facilitated Sexual Assault"

Presented at the Graduate Seminar Series in Forensic Science at Emporia State University

September 2015; Emporia KS

T.P. Rohrig, "Oral Fluid: Utilization in Detecting Drugged Drivers"

Presented at Prosecuting Attorneys' Seminar: 21st Century Prosecution; The New and the Novel

October 2014; Wichita, KS

T.P. Rohrig, "Oral Fluid as a Test Specimen: Guidelines for Implementing a Data Collection Program"

Presented at IACP Training Conference

July 2014; Phoenix, AZ

PRESENTATIONS con't

T.P. Rohrig, "Basic Pharmacology of the Synthetic Cannabinoids"

Presented at the Southwestern Association of Toxicologists Fall Meeting.

October 2012; Norman, Oklahoma

A.J. Whitaker*, L. Harryman and T.P. Rohrig, "Single Dose Urinary Kinetics of Carisoprodol"

Presented at the Southwestern Association of Toxicologists Fall Meeting.

October 2012; Norman, Oklahoma

T.P. Rohrig, "Toxicology for Kansas Prosecutors"

Invited presentation at the Trial Advocacy II for Kansas Prosecutors Workshop

August 2012; Wichita, KS

T.P. Rohrig, "Alcohol and Drug Facilitated Sexual Assaults"
T.P. Rohrig, "Pain Management Medications Utilized in Drug Facilitated Sexual Assaults"
T.P. Rohrig, "DFSA Applications and Interpretations – OTC Antihistamines"

Invited presentations at the Society of Forensic Toxicologists Continuing Education Workshop – Drug Facilitated Sexual Assault

April 2012; Edmond, OK

L.E. Hume*, R.D. Fornshell, T.P. Rohrig, and J.G. Rankin, "New Gas Chromatography-Positive Chemical Ionization Tandem Mass Spectrometric Method for the Determination of Methylenedioxypyrovalerone (MDPV), 4-Methylmethcathinone (Mephedrone), and 4-Methoxymethcathinone (Methedrone)"

Presented at the American Academy of Forensic Sciences Annual Meeting

February 2012; Atlanta, GA

T.P. Rohrig, "Pharmacology of Cathinone Analogs aka Bath Salts"

Presented at the Southwestern Association of Toxicologists Fall Meeting.

Sept 2011; Wichita, KS

T.P. Rohrig, "But Judge It's Therapeutic – Driving Under the Influence of Prescription Medications"

Presented at the Southwestern Association of Toxicologists Fall Meeting.

Sept 2011; Wichita, KS

PRESENTATIONS con't

L. Harryman* and T.P. Rohrig, "Single Dose Urinary Kinetics of Cyclobenzaprine"

Presented at the Southwestern Association of Toxicologists Fall Meeting.

Sept 2011; Wichita, KS

K. Creamer* and T.P. Rohrig, "Methylenedioxypyrovalerone (MDPV): Method Development"

Presented at the Southwestern Association of Toxicologists Fall Meeting.

Sept 2011; Wichita, KS

T.P. Rohrig, "Pharmacology of Cathinone Analogs aka Bath Salts"

Invited presentation at the California Association of Toxicologists Spring Meeting.

May 2011; Napa, CA

T.P. Rohrig, "Marijuana Intoxication: Impact on Driving Performance"
T.P. Rohrig, "Driving Under the Influence of Stimulants"
T.P. Rohrig, "OTC Drugs and Driving: Antihistamines"
T.P. Rohrig, "Driving Impairment Due to Inhalant Abuse"
T.P. Rohrig, "Legal Challenges to Prosecuting a Driving Under the Influence of Inhalants Case"
T.P. Rohrig, "Benzodiazepines: Impact on Driving"
T.P. Rohrig, "But Judge…Its Therapeutic"

Presented at the "Symposium in Toxicology [DUID]"

January 2011; Ames, Iowa

T.P. Rohrig, "Drug Facilitated Sexual Assault (DFSA) Applications and Interpretations: OTC Antihistamines"

Presented at the workshop entitled "Drug Facilitated Sexual Assault" at the Society of Forensic Toxicologists Annual Meeting

October 2010; Richmond, VA

T.P. Rohrig, "Introduction to Analytical Techniques and Colorimetric Tests"

Presented at the "Symposium on Special Topics in Forensic Toxicology"

August 2008; Ames, Iowa

T.P. Rohrig, "Toxicological Challenges in Decomposed or Embalmed Bodies""

Presented at the "Symposium on Special Topics in Forensic Toxicology"

August 2008; Ames, Iowa

PRESENTATIONS con't

T.P. Rohrig, "Interpretation of Postmortem Toxicology-Pitfalls to Avoid"

Presented at the "Symposium on Special Topics in Forensic Toxicology"

August 2008; Ames, Iowa

T.P. Rohrig, "Toxicology of Pain Management Drugs – An Overview"

Presented at the workshop entitled "Postmortem Toxicology: Interpretation of Drug Concentrations in Hair" at the American Academy of Forensic Sciences Annual Meeting

February 2008; Washington, DC

T.P. Rohrig, "Toxicological Analysis of Drug Facilitated Crimes for Dummies…and Smarties, Too: Hallucinogens"

Presented at the workshop entitled "Toxicological Analysis of Drug Facilitated Crimes for Dummies…and Smarties, Too" at the Society of Forensic Toxicologists Annual Meeting

October 2007; Durham, NC

T.P. Rohrig, "Alcohol Biomarkers: Ethyl Glucuronide – Diagnostic and Forensic Utility"

Invited presentation at the Biological Science's Departmental Seminar Series – Wichita State University

March 2007; Wichita, KS

T.P. Rohrig, "Driving Under the Influence of Drugs: Forensic Implications – Pharmacology, Pharmacokinetics and Interpretation"

Invited presentation at a workshop entitled "Apprehension and Prosecution of Drug Impaired Drivers: The ABC's of DRE"

September 2006; Wichita, KS

T.P. Rohrig, "Toxicological Determination of Children Exposed to a Methamphetamine Laboratory Environment"

Invited presentation at a workshop entitled "Meth: What's Cooking in Sedgwick County"

September 2006; Wichita, KS

PRESENTATIONS con't

T.P. Rohrig, "Pharmacokinetics and Pharmacodynamics in the Geriatric Population: A Focus on Psychotropic Medications"

Presented at the workshop entitled "Interpretation of Toxicological Analysis in the Elderly" at the American Academy of Forensic Sciences Annual Meeting

February 2006; Seattle, WA

L.A. Harryman* and T.P. Rohrig, "Tramadol: A Forensic Toxicology Overview"

Presented at the Southwestern Association of Forensic Scientists Annual Meeting

October 2005; Wichita, KS

T.P. Rohrig, "Medical Implications of Children Exposed to a Methamphetamine Laboratory Environment"

Invited presentation at Kansas Alliance for Drug Endangered Children Seminar

September 2005; Junction City, KS

T.P. Rohrig, "Zolpidem: Forensic Implications – Pharmacokinetics and Pharmacodynamics"

Invited presentation at the Midwest Association for Toxicology and Therapeutic Drug Monitoring Annual Meeting

May 2005; Kansas City, MO

C.L. Huber* and T.P. Rohrig, "Lamotrigine – A Forensic Toxicology Overview"

Presented at the Southwestern Association of Toxicologists Meeting

November 2004; Oklahoma City, OK

T.P. Rohrig, "Case Studies Illustrating Application of Principles of Pharmacokinetics"

Presented at the workshop entitled "Application of the Principles of Pharmacology and Pharmacokinetics to the Interpretation of Drug Blood Levels" [co-chairman] at the American Academy of Forensic Sciences Annual Meeting

February 2004; Dallas, TX

J. L. Oeberst* and T. P. Rohrig, "Comparison of the Distribution of Fentanyl in Deaths Related to Use and Abuse of Duragesic® Patch and Intravenous Administration of Patch Contents"

Presented at the American Academy of Forensic Sciences Annual Meeting

February 2003; Chicago, IL

PRESENTATIONS con't

T. Thompson* and T.P. Rohrig, "The Identification of Capsaicinoids in Pepper Spray Residues"

Presented at the Southwestern Association of Toxicologists Meeting

April 2002; Wichita, KS

T.P. Rohrig, "Interpretation of Postmortem Toxicology: Pitfalls to Avoid"

Presented at the Southwestern Association of Toxicologists Meeting

April 2002; Wichita, KS

C.L. Huber*, L.J. Goodson and T.P. Rohrig, "Oxycodone – An ELISA Method Validation"

Presented at the Southwestern Association of Toxicologists Meeting

April 2002; Wichita, KS

T.P. Rohrig, "Interpretation of Postmortem Toxicology: Pitfalls to Avoid"

Presented at the Kansas Coroner's Association Meeting

July 2001; Wichita, KS

T.P. Rohrig, "Introduction to Pharmacology and Forensic Toxicology"

Presented at the DEA Basic Narcotic Investigator's School

March 2001; Topeka, KS

J.L. Oeberst*, T.P. Rohrig, M. Wells, L. Sifford and M.H. Dudley,
"Fentanyl on the Internet and Other Creative Forms of Abuse Resulting in Death"

Presented at the Annual meeting of the American Academy of Forensic Sciences

February 2001; Seattle, WA

T.P. Rohrig, "Drug Facilitated Sexual Assault"

Presented at Syracuse University Health Services Continuing Education Day

August 1999; Syracuse, New York

PRESENTATIONS con't

T.P. Rohrig, "Pharmacokinetics and Pharmacodynamics of Ethyl Alcohol"

Presented at the New York Prosecutors Training Institute

July 1999; Syracuse, New York

T.P. Rohrig, "Oral Fluid – An Alternative Specimen for Drug Analysis"

Presented in the SOFT/TIAFT workshop entitled "Pharmacology and Analytical Toxicology of Drugs in Saliva"

October 1998; Albuquerque, New Mexico

T.P. Rohrig, "Complications in the Analyses of Embalmed Tissues"

Invited presentation and panel member at the New York State Toxicology Seminar

September 1998; Albany, New York

T.P. Rohrig, "An Introduction to Forensic Toxicology"

Invited presentation at Angelo State University

April 1998: San Angelo, Texas

J.C. Epley, J.L. Henry and T.P. Rohrig, "The Distribution of Zolpidem in Postmortem Cases"

Presented at the Spring Meeting of the Southwestern Association of Toxicologists

April 1998: Fort Worth, Texas

T.P. Rohrig, "Oral Fluid - An Alternative Specimen for Drug Analysis"

Invited presentation at University of Illinois - Chicago

March 1998: Chicago, Illinois

Invited presentation at the Quarterly Meeting of the California Association of Toxicologists

February 1998: San Francisco, California

T.P. Rohrig, "Confirmation of Cocaine Use in Oral Fluid"

Presented at DHHS Drug Testing Advisory Board - Scientific Meeting on Drug Testing of Alternative Specimens and Technologies

April 1997: Rockville, Maryland

PRESENTATIONS con't

T.P. Rohrig, "External Quality Assurance for An Oral Fluid Drug Testing Program"

Presented at DHHS Drug Testing Advisory Board - Scientific Meeting on Drug Testing of Alternative Specimens and Technologies

April 1997: Rockville, Maryland

T.P. Rohrig, "Quality Assurance and Quality Control in a Postmortem Laboratory"

Presented at the Fall Meeting of the Southwestern Association of Toxicologists

November 1996: Oklahoma City, Oklahoma

T.P. Rohrig, "Urine Drug Testing: How is it done? What does it mean?"

Presented at the 24th Fall Educational Seminar of the Kansas State Society of the American Medical Technologists

September 1996: Overland Park, Kansas

T.P. Rohrig, "Alcohol Pharmacokinetics"

Invited presentation at the Ethyl Alcohol Symposium. Sponsored by the Southwestern Association of Toxicologists

November 1994: Fort Worth, Texas

L.E. Balding, F.B. Jordan, C.S. Choi and T.P. Rohrig*, "Gas Flames, Closed Spaces and Hypoxia"

Presented at the Spring Meeting of the Southwestern Association of Toxicologists

April 1994: Dallas, Texas

B. Snodgrass and T.P. Rohrig, "Postmortem Determination of Carteolol Administered as a Topical Ophthalmic"

Presented at the Fall Meeting of the Southwestern Association of Toxicologists

November 1993: Arlington, Texas

L. Harty and T.P. Rohrig, "Postmortem Distribution of Mexiletine"

Presented at the Fall Meeting of the Southwestern Association of Toxicologists

November 1993: Arlington, Texas

PRESENTATIONS con't

T.P. Rohrig, "Sudden Death Due to Butane Inhalation"

Presented at the Fall Meeting of the Southwestern Association of Toxicologists

November 1993: Arlington, Texas

T.P. Rohrig, "An Introduction to Forensic Toxicology"

Invited presentation at Angelo State University

November 1992: San Angelo, Texas

T.P. Rohrig, "Toxicology of Volatile Inhalants"

Invited presentation at the Inhalant Abuse Symposium. Sponsored by the Southwestern Association of Toxicologists

November 1992: San Angelo, Texas

T.P. Rohrig and A.W. Mitchell, "An Accidental Argon Death"

Presented at the Fall Meeting of the Southwestern Association of Toxicologists

November 1992: San Angelo, Texas

T.P. Rohrig and N.G. Ray, "Tissue Distribution of Bupropion in a Fatal Overdose"

Presented at the Spring Meeting of the Southwestern Association of Toxicologists

April 1992: Shreveport, Louisiana

G.W. Kunsman, and T.P. Rohrig, "Tissue Distribution of Ibuprofen in a Fatal Overdose"

Presented at the Spring Meeting of the Southwestern Association of Toxicologists

April 1992: Shreveport, Louisiana

A.W. Mitchell, B.D. Curtis, and T.P. Rohrig, "Headspace Analysis of Toluene"

Presented at the Fall Meeting of the Southwestern Association of Toxicologists

October 1991: Oklahoma City, Oklahoma

PRESENTATIONS con't

T.P. Rohrig*, L.E. Balding and R. W. Prouty, "Triazolam: Analysis and Case Studies"

Presented at the Spring Meeting of the Southwestern Association of Toxicologists.

October 1990: Santa Fe, New Mexico

R.W. Prouty* and T.P. Rohrig, "Forensic Considerations in the Evaluation and Interpretation of Postmortem Blood Alcohol Results"

Presented at the 27th International Meeting of the International Association of Forensic Toxicologists

October 1990: Perth, Australia

T.P. Rohrig and B.L. Snodgrass, "Analysis of 3-Hydroxybenzodiazepines by Gas Chromatography/Mass Spectrometry"

Presented at the Spring Meeting of the Southwestern Association of Toxicologists

April 1990: Austin, Texas

E.F. Hatch, P.J. Cooper and T.P. Rohrig, "Amphetamine Screening in Medical Examiner Cases"

Presented at the Spring Meeting of the Southwestern Association of Toxicologists

April 1990: Austin, Texas

P.S. Mork and T.P. Rohrig, "Detection of Fentanyl in Postmortem Blood by Radioimmunoassay"

Presented at the Fall Meeting of the Southwestern Association of Toxicologists

November 1989: San Antonio, Texas

T.P. Rohrig, "Postmortem Formation of Ethanol - Interpretation of Results"

Presented at the 18th Annual Midwestern Association of Forensic Scientists Meeting

October 1989: Fairview Heights, Illinois

T.P. Rohrig, "Fluoxetine Overdose: A Case Report"

Presented at the Fall Meeting of the Southwestern Association of Toxicologists

November 1988: Shreveport, Louisiana

PRESENTATIONS con't

T.P. Rohrig, "Current Drug Screening Methods - An Evaluation"

Invited presentation at the Laboratory Issues in Drugs of Abuse Testing Seminar; Sponsored by Kansas City Scientific Inc. and the University of Missouri, School of Pharmacy

January 1987: Kansas City, Missouri

T.P. Rohrig, "Drugs and Driving"

Invited presentation at the Law Enforcement Seminar Series.

June 1985: Topeka and Wichita, Kansas

T.P. Rohrig* and D.M. Yourtee, "In Vitro Metabolic Turnover of Aflatoxin Q_1 by Rat Liver"

Presented at the Annual Meeting of the Missouri Academy of Science

April 1983: St. Louis, Missouri

CONFERENCES/SYMPOSIUMS

Invited Participant at the "International Symposium on Driving Under the Influence of Alcohol and/or Drugs"

March 1986: Quantico, Virginia

Invited Participant at "An International Symposium on Forensic Toxicology"

June 1992: Quantico, Virginia

Mock Trial Witness at the Lethal Weapon/Vehicular Homicide Trial School

September 1995: Kansas City, Missouri

Invited Participant at "Improving Integration of DRE, Investigative and Toxicological Evidence in DUID Prosecutions" Summit National Safety Council CAOD and National Highway Traffic Safety Administration

May 2004: Seattle, Washington

Invited Speaker at the Kansas Alliance for Drug Endangered Children Seminar. Presentation entitled "Medical Implications of Children Exposed to a Methamphetamine Laboratory Environment" and member of the panel discussion group.

September 2005: Junction City, Kansas

CONFERENCES/SYMPOSIUMS con't

Invited participant and co-chairman; "Symposium on Special Topics in Forensic Toxicology"

August 2008: Ames, Iowa

Invited Instructor for the Ames Lab/Midwest Forensic Resource Center sponsored workshop [4.5 days] on "General Principles of Drug Pharmacokinetics [ADME]"

March 2010; Wichita, KS
March 2011; Ames, IA

Invited Instructor for the Ames Lab/Midwest Forensic Resource Center sponsored workshop [4.5 days] on "Advanced Pharmacokinetics for Toxicologists: P-450 Isozymes and Drug-Drug/Food Interactions"

July 2010; Ames, Iowa
July 2011; Ames, Iowa

Invited Instructor for the Ames Lab/Midwest Forensic Resource Center sponsored workshop [4.5 days] on "Postmortem Toxicology: Interpretive Challenges and Considerations"

October 2010; Ames, Iowa
October 2011; Ames, Iowa

Invited participant and co-chairman for Ames Lab/Midwest Forensic Resource Center sponsored conference entitled "Symposium in Toxicology [DUID]"

January 2011: Ames, Iowa

Invited Speaker at the DWI/Traffic Safety and DRE Recertification Conference.
Presentation entitled "DWI-D Value of Urine and/or Blood Toxicology".

June 2012: Osage Beach, Missouri

Invited Instructor for the Midwestern Association of Forensic Scientists sponsored Spring Toxicology workshop [2.5 days] on "Postmortem Toxicology: Interpretive Challenges and Considerations"

April 2015: Milwaukee, WI

Invited Speaker at the Kansas Alliance for Drug Endangered Children-Sedgwick County Seminar.
Presentation entitled, "Interpretation of Hair and Urine Drug Test Results"

September 2015; Wichita, KS

Invited Instructor for the Southwestern Association of Toxicologists sponsored Spring Workshop [2.5 hours] on "ADME: General Principles of Drug Pharmacokinetics"

April 2017; Wichita KS

BOOK CHAPTERS

Rohrig, TP, Gamble, M and Cox, K: Identification and Quantitation of Ketamine in Biological Matrices Using Gas Chromatography-Mass spectrometry (GC-MS). In *Clinical Applications of Mass Spectrometry: Methods and Protocols*, Ed U Garg and CA Hammett-Stabler, Humana Press, 2010

Rohrig, TP, Harryman, LA and Norton, MC: Identification and Quantitation of Zolpidem in Biological Matrices Using Gas Chromatography-Mass spectrometry (GC-MS). In *Clinical Applications of Mass Spectrometry: Methods and Protocols*, Ed U Garg and CA Hammett-Stabler, Humana Press, 2010

Rohrig, TP, Norton, MC and Harryman, LA: Identification and Quantitation of Zopiclone in Biological Matrices Using Gas Chromatography-Mass spectrometry (GC-MS). In *Clinical Applications of Mass Spectrometry: Methods and Protocols*, Ed U Garg and CA Hammett-Stabler, Humana Press, 2010

Marinetti, LJ and Rohrig, TP: Drug-Facilitated Sexual Assault (Chemical Sexual Assault). in *The Clinical Toxicology Laboratory: Contemporary Practice of Poisoning Evaluation*, 2nd Edition, Ed TC Kwong, B Magnani, TG Rosano and LM Shaw, AACC Press 2013

BOOKS

Rohrig, T.P. Postmortem Toxicology: Challenges and Interpretive Considerations. 1st Ed., Academic Press, 2019.

PUBLICATIONS

1. Youso K.B., Osawa K.A., Divine M.L., Rohrig T.P. "Driving Impairment Cases involving Flualprazolam"

   J. Analytical Toxicology 46:e191-e195, 2022
   https://doi.org/10.1093/jat/bkac019

2. Tiscione N.B. and Rohrig T.P. "1,1-Difluoroethane Forensic Aspects for the Toxicologist and Pathologist"

   J. Analytical Toxicology 45:792-798, 2021
   Advance Access Publication date: 21 May 2021;
   https://doi.org/10.1093/jat/bkab054

3. Rohrig T.P., Nash E., Osawa K.A., Shan X., Scarneo C., Youso K.B., et al. "Fentanyl and Driving Impairment"

   J. Analytical Toxicology 45:389-396, 2021
   Advance Access Publication date: 14 Aug 2020;
   https://doi.org/10.1093/jat/bkaa105

4. Rohrig T.P., Osawa K.A., Baird T.R. and Youso K.B. "Driving Impairment Cases involving Etizolam and Flubromazolam"

   J. Analytical Toxicology 45:93-98, 2021
   Advance Access Publication date: 13 May 2020; https://doi:10.1093/jat/bkaa050

5. Baron M.G., Rohrig T., Gonzalez-Rodriguez J. "Forensic Science in the UK. Part III. Regulation of Forensic Science in England and Wales-The Role of the Forensic Science Regulator"

   Forensic Science Review 32(1): 2-6, 2020

6. Rohrig TP, Miller SA and Baird TR. "U-47700: A Not So New Opioid"

   J. Analytical Toxicology 42:e12-e14, 2018; https://doi.org/10.1093/jat/bkx081

7. Rohrig TP, Moore CM, Stephens K, et al. "Roadside drug testing: An evaluation of the Alere DDS®2 mobile test system"

   Drug Test Anal. 2017;1-8. https://doi.org/10.1002/dta.2297

8. Rohrig, T.P. and Hicks, C.A., "Brain Tissue: "A Viable Postmortem Toxicological Specimen"

   J. Analytical Toxicology 39: 137-139, 2015

9. Stockham, T. and Rohrig, T.P., "The Use of "Z-Drugs" to Facilitate Sexual Assault"

   Forensic Science Review 22(1):61-73, 2010

PUBLICATIONS CON'T

10. Rohrig, T.P., Huber, C., Goodson, L. and Ross, W. "Detection of Ethylglucuronide in Urine following the Application of Germ-X"

    J. Analytical Toxicology 30: 703-704, 2006

11. Rohrig, T.P. and Moore, C.M., "Zolpidem: Forensic Aspects for the Toxicologist and Pathologist"

    Forensic Sci Med Pathol 1(2): 81-90, 2005

12. Rohrig, T.P. and Goodson, L.J., "A Sertraline Intoxicated Driver"

    J. Analytical Toxicology 28:689-691, 2004

13. Rohrig, T.P. and Moore, C., "The Determination of Morphine in Urine and Oral Fluid following Ingestion of Poppy Seeds"

    J. Analytical Toxicology 27: 449-452, 2003

14. Henry, J., Epley, J., and Rohrig, T.P., "The Analysis and Distribution of Mescaline in Postmortem Tissues"

    J. Analytical Toxicology 27: 381-382, 2003

15. Epley, J.C., Henry, J.L., and Rohrig, T.P., "The Distribution of Zolpidem in Postmortem Cases"

    Am. J. For Med. Path., accepted for publication - 1998

16. Rohrig, T.P., "Comparison of Fentanyl Concentrations in Unembalmed and Embalmed Liver Samples"

    J. Analytical Toxicology 22: 253, 1998

17. Rohrig, T.P., "Sudden Death Due to Butane Inhalation"

    Am. J. For. Med. Path. 16(3): 229-302, 1997

18. Balding, L., F.B. Jordan, C.S. Choi and T.P. Rohrig, "Gas Flames, Closed Spaces and Hypoxia"

    Am. J. For. Med. Path. 16(3): 229-231, 1995

19. Rohrig, T.P. and L.E. Harty, "Postmortem Distribution of Mexiletine in a Fatal Overdose"

    J. Analytical Toxicology 18:354-356, 1994

20. Kunsman, G.W. and T.P. Rohrig, "Tissue Distribution of Ibuprofen in a Fatal Overdose"

    Am. J. For. Med. Path: 14(1):48-50, 1993

21. Rohrig, T.P. and N.G. Ray, "Tissue Distribution of Bupropion in a Fatal Overdose"

    J. Analytical Toxicology 16:343-345, 1992

PUBLICATIONS CON'T

22. Rohrig, T.P. and R.W. Prouty, "Tissue Distribution of Methylenedioxymethamphetamine".

    J. Analytical Toxicology 16:52-53, 1992

23. Rohrig, T.P., "Ice: Methamphetamine of the 90's"

    Medicolegal-Gram (State of Oklahoma) 9(3):7-8, 1990

24. Rohrig, T.P. and R.W. Prouty, "A Nortriptyline Death With Unusually High Tissue Concentrations"

    J. Analytical Toxicology 13:303-304, 1989

25. Rohrig, T.P. and R.W. Prouty, "Fluoxetine Overdose: A Case Report"

    J. Analytical Toxicology 13:305-307, 1989

26. Rohrig, T.P., "Alkyl Nitrites: Legal Street Drugs"

    Medicolegal-Gram (State of Oklahoma) 8(4):8-10, 1989

27. Rohrig, T.P., D.A. Rundle and W.N. Leifer, "Fatality Resulting From Metoprolol Overdose"

    J. Analytical Toxicology 11:231-232, 1987

28. Rohrig, T.P. and R.C. Backer, "Amoxapine Overdose: Report of Two Cases"

    J. Analytical Toxicology 10:211-212, 1986

29. Yourtee, D.M. and T.P. Rohrig, "The In Vitro Metabolism of Aflatoxin Q_1 by Mouse and Rabbit Liver Preparations"

    Research Communications in Chemical Pathology and Pharmacology 50:103-123, 1985

30. Rohrig, T.P. and D.M. Yourtee, "In Vitro Metabolism of Aflatoxin Q_1 by Rat Liver Postmitochondrial Homogenates"

    Research Communications in Chemical Pathology and Pharmacology 40:457-464, 1983

31. Susan, A., T. Rohrig and J. Wiley, "Stability Upon Storage, Analysis, and Purifications of C-14 and H-3 Labeled Polycyclic Aromatic Hydrocarbons and their Metabolites"

    J. Labeled Compounds and Radiopharmaceuticals 18:1449-1455, 1981

EXHIBIT K

Timothy P. Rohrig, Ph.D., F-ABFT
Consultant in Pharmacology and Toxicology
2017 N. Castle Rock
Wichita, Kansas 67230

Email: DrTRohrig@aol.com
Alt Email: DrTimRohrig@gmail.com

4 December 2021

Lynn Garcia
Director/General Counsel
Texas Forensic Science Commission
Office of Court Administration
205 W. 14th St, Suite 600
Austin, TX 78701

Re: Matter of TX FSC Complaint #20.55

Dear Ms. Garcia:

At your request and supplied by your office, I have reviewed the following material in the above captioned case.

- Texas Forensic Science Commission Complaint Form: ExperTox Lab
  - ExperTox Forensic Chain of Custody and Control form; ID#192750040, dated 30 September 2019
  - Email correspondence between Brenda Rios [ExperTox] and KE Shroff, PhD [Arcpoint Labs], dated 2 – 4 Oct 2019
  - ExperTox Lab Report-Clinical [Accession #192750040] dated 25 Oct 2019, with limited supporting laboratory data documentation
  - ExperTox opinion letter re: Hair Drug Test sample collected on 30 September 2019; authored by Laboratory Director Ernest D. Lykissa, PhD, dated 25 February 2020
  - NMS Draft Report referenced in Complaint was **NOT** provided/reviewed
- Email correspondence between Khushroo Shroff, PhD of ARCPOINT Labs of Philadelphia and Philadelphia District Attorney's Office; 16 August 2019 and 18 September 2019
  - Invoices [31 Oct 2019 and 2 December 2019] and Payment receipts

- Apparent College of American Pathologists Inspection deficiency report, with ExperTox Corrective Actions
- CAP Inspector's Summation Report; Inspection Date 29 July 2020
- Texas Forensic Science Commission's request for additional information re: above captioned complaint, dated 22 March 2021, and ExperTox reply, dated 29 March 2021.
- Litigation Data Pack
    - Containing some raw data
- Validation Studies for THC [Hair] and Lidocaine [Hair]
- SOP/Policy – "Non-Forensic Reporting" vs "Forensic Reporting"
- Baseline Hair Testing SOP
- ExperTox Lab Report without Non-Forensic Disclaimer [Accession #192750040] dated 25 Oct 2019

My comments and opinions will be focused on the Reliability and Validity of Testing and the Expert [Ernest D. Lykissa, PhD] opinion letter rendered in the above captioned matter; specifically:

1. Are the hair testing results reported by ExperTox supported by the data provided by the laboratory?
2. Are the hair testing results provided by ExperTox supported by accepted scientific reporting criteria in forensic toxicology?
3. Was the interpretation provided by ExperTox regarding impairment of the complainant (sic) scientifically valid?
4. Does Expert have any observations regarding the role of the accrediting body (CAP) in providing oversight for any issues observed during the course of Expert's review?
5. Are there any other observations Expert believes would assist the FSC in addressing the complaint filed in this matter?

The following facts and opinions are based upon my review of the aforementioned material, the technical, scientific and medical literature and my education, training and experience in the fields of pharmacology and toxicology.

- On 30 September 2019 at approximately 1215 hrs [12:15 pm], a hair sample was collected from a donor [name and other identifying information was redacted] by Arcpoint Labs, and sent via FedEx to ExperTox laboratory which received the specimen on 2 Oct 2019.
- The requested testing to be performed was a "Date Rape" test and a specific request to further test for lidocaine.

- ExperTox Laboratory reported [Accession #192750040] the following:

Hair:

- Gamma-Hydroxy Butyric Acid [GHB]: Detected - < 50 pg/mg
- Delta-9-THC: Detected - 7.5 pg/mg
- Lidocaine: Detected – 3.9 pg/mg

Baseline Findings:
Lidocaine: Detected at 0.43 pg/mg
Delta-9-THC: Not Detected

The following other drug/drug classes were reported non-detected:

- Barbiturates
- Benzodiazepines
- Opioids
- Sedative/Hypnotics
- Over-the-Counter drugs
- Muscle relaxants

Review of Analytical Data provided to support Reported Results [Accession #192750040]:

Overall evaluation of the data was challenging, given the "screen shots" of the sequence tables, and chromatograms were of poor quality and difficult to read the numerical values, along with the absence of key raw data [e.g. area counts of ions].

GHB:

The laboratory reported a GHB result of "**DETECTED**", at a concentration of less than 50 pg/mg of hair. The analysis was conducted 6 Oct – 14 Oct 2019.

The confirmation batch log for GHB does **not** indicate the GC/MS instrument utilized for the analysis. The batch log [Batch #09301908, 10031908] reflects that the Ion Ratios and Retention times [RT] for GHB case sample, calibrator, and controls, both required for identification, were within specifications. However, this could not be verified since the "Results Table" was not accompanied with supporting data and chromatograms. The sequence table does reflect the referenced sample [Line 43]; however the vial number [#6] does not match the Sample number [#5] on the handwritten GHB confirmation Batch Log.

The batch log reflects that the same stock solution [Lot#073019Bc 1] was used to make both the calibrator and controls.

The GHB result as reflected on the handwritten batch log was zero, as compared to the reported result of "Detected", less than 50 pg/mg. The detected less than would suggest that the compound was detected above the Limit of Detection [LOD], but was below the Limit of Quantitation [LOQ] of 50 pg/mg.

LIDOCAINE:

Lidocaine SOP

The lidocaine SOP provided for review was V**2017**-001 [assuming version date unknown month in 2017]; annual review page reflects first date of review of 30 Oct 2019. An email from Dr. Shaiju Vareed dated 30 Sept 2021 stated that the effective date for the Lidocaine SOP was 30 Oct 2019.

The SOP states that a 5-point calibration curve, *including the origin*, is generated for each client samples. The qualifier ion (± 30%) range is set by the *threshold* [calibrator] standard (100 pg/mg for lidocaine). [Lido SOP pg 4 of 8]

The SOP reflects Lidocaine quality control [QC] concentrations were 350 pg/mg [low QC] and 750 pg/mg [high QC]. The acceptance criteria [Lido SOP pg 4 of 8] for controls are [abstracted]:

- Positive controls quantitative value MUST be within ± 30% of established mean.
- Negative control must demonstrate no drug present as defined by Limit of Detection.
- Control has an unacceptable parameter (i.e. chromatographic quality).
- If the criteria are not met, "The run should be rejected".

There is no mention of chromatographic quality as far as acceptance or not for a calibration point. Case (Client) samples should have baseline resolution from any interfering peaks.

The SOP states "Review of the data is documented by the Director or Certifying Scientist's initials on the chromatograms." [Lido SOP pg 5 of 8]

The SOP further states that "Unknowns with values less than 100 pg/mg for lidocaine is reported as **Negative**. [Lido SOP pg 5 of 8]

It should be noted that the references listed in the SOP have no direct connection to lidocaine analyses, with a possible exception of the Baselt reference which I am assuming is the lidocaine monograph [page is not provided] in the book. [Lido SOP pg 6 of 8]

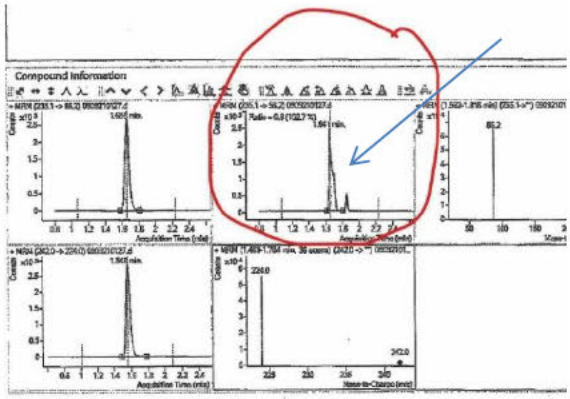
Lidocaine Linearity Study

Although a validation study for lidocaine was requested, the laboratory produced a "Linearity Study". The submitted study appears to be performed on LCMS#4; however the acquisition date [assuming performance date] was 10 Sept **2021**.

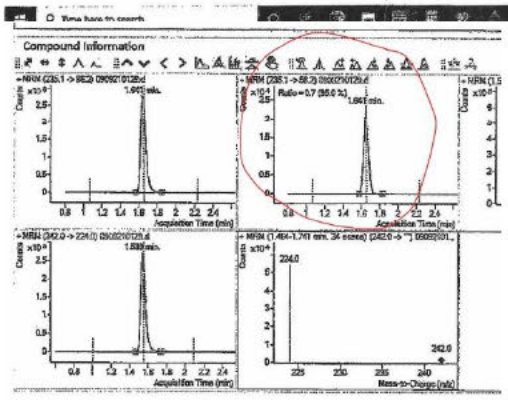
The Lidocaine Sequence Table has one file [0909210126] labeled as **50 cal** lido/h, although the sample type was listed as Sample and appears not used in the calibration curve. The chromatogram of the transition ion [235 to 58] exhibited poor chromatography, with a significant trailing shoulder [~30%].

The calibration curve DID NOT include the origin, contrary to the SOP.

Evaluation of the 100 pg/mg calibrator, in the single day study [10 Sept 21], which according to the SOP is used to set the retention time and ion [MRM] ratio for setting acceptance ranges for all calibrators, controls and case samples; exhibited poor chromatography of the transition ion [235 to 58], with a significant trailing shoulder [~50%].



100 ng Calibrator Transition ion [235 to 58]



1000 ng Calibrator Transition ion [235 to 58]

The "Linearity Study" was not summarized or signed off on for acceptance and/or approval for use in casework.

Assuming acceptable chromatography [which it isn't] the Limit of Detection [LOD] and Limit of Quantitation [LOQ] would be the lowest calibrator [100 pg/mg] , albeit it should have been rejected; the **LOD/LOQ for the assay is 100 pg/mg**.

Carryover limit may be surmised by the provided data, in that; the Negative control did follow the high calibrator [2000 pg/mg] with a measured response of less than the LOD of 28 pg/mg.

The study did not address other important parameters in a properly validated method, such as the following; in a method which appears to have been use for many years:

- Precision and Accuracy of the method
- Bias in the method
- Interferences by other compound with the method
- Ion suppression/enhancement in the LCMS method [matrix effects]

Case Data [#192750040]

The laboratory reported under additional findings a lidocaine result of "detected", at concentration of **3.9** pg/mg of hair. The report further indicates a "Baseline" concentration of lidocaine at **0.43** pg/mg of hair.

The initial lidocaine confirmation batch log [#10031908] ran on 16 Oct 2019, reflects the a negative control, case sample (192750040) and calibrator [Lot# 040819RH2 Exp date 4/21] and reports a lidocaine result of "detected", with an apparent concentration of 0.5 pg/mg, with the negative control as zero and the calibrator as positive.

This information was provided with the Complaint, data was requested to support the lidocaine testing, and this batch was **NOT** included in the data produced on 16 Sept 2021.

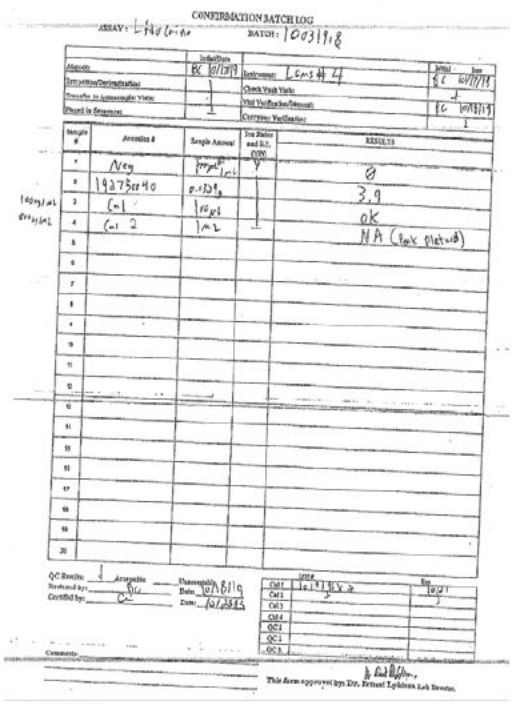
An additional confirmation lidocaine batch was run on 17 Oct 2019, and interestingly had the same batch number [10031908] as the batch run on 16 Oct 2019. [See inserted data below] The batch log listed the samples as follows; negative control, case sample, calibrator and calibrator 2. The worklist report reflects the same order, with a blank in between the case sample and calibrator 1. However, the Cal 1 and 2 lot numbers were different [Lot # 1019195V2 Exp 10/21 for both], as compared to the batch run on 16 Oct 2019. The batch log [17 Oct 2019] and result table, with the associated sample chromatogram, reflects a lidocaine concentration of 3.9 pg/mg. The second calibrator was not used, the batch log reflects a comment "NA (Peak Platued (sic))", assumed author meant the peak plateau; thus invalidating the calibrator for use.

*Cal***1** Lidocaine Peak also appears overloaded/saturated. Although the data suggests [difficult to "see" the raw responses for the MRMs due to the poor quality of the provided data], the transition ratio are acceptable for the identification of lidocaine, using an overload peaks for the calibrator will skew the results.

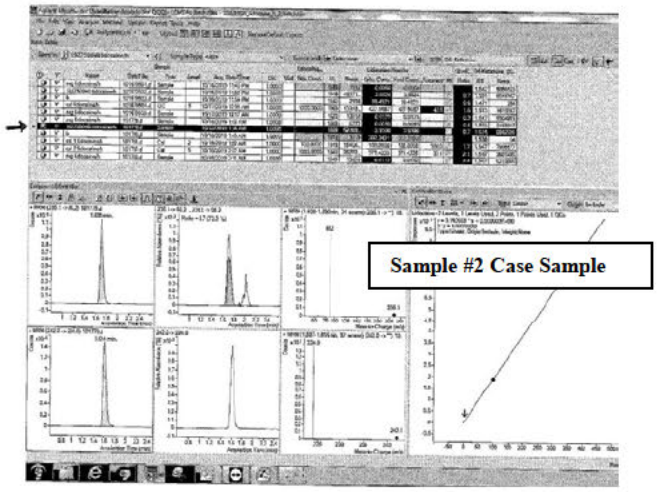
The chromatogram/calibration curve print out indicates a single point calibration was used; with the 100 pg/mg data point, and the origin. This is contrary to the stated SOP using four calibrators and the origin, as well as the presented linearity

study which did use four calibrators without the origin in the calibration curve. The reported result of 3.9 is well below the laboratories reporting limit of 100 pg/mg, and the LOD/LOQ presumably established in their linearity study.

The confirmation batch log [Batch #10031908] does not reflect that QC samples (controls) were run with the batch.

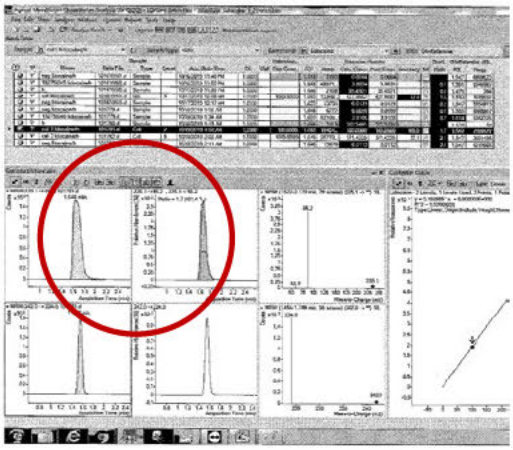

CONFIRMATION BATCH LOG

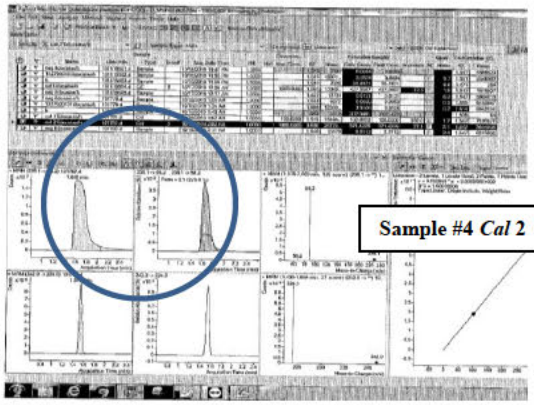
Lidocaine batch ran on 17 Oct 2019



Sample #2 Case Sample

Sample #3 *Cal* 1





Sample #4 *Cal* 2

The "Base Line" testing batch log [10031908] reflects, in the following order, a negative control, case sample (192750040), a low calibrator and a high calibrator; batch was run on 21 Oct 2019. The batch log lists the lot number and expiration date for only calibrator 1 (assuming low cal) with a result of OK. The results were as follows negative control zero, case sample 0.43, and a result for the high cal as N/A. However, the Worklist Report shows a blank inserted between the case sample and the low calibrator.

As with the case sample calibrators, there were similar chromatographic issues [peak saturation/overload] with the "identification" of lidocaine in the *baseline testing*.

The chromatogram/calibration curve print out indicates a single point calibration was used; with the 100 pg/mg data point, and the origin.

This is contrary to the stated SOP using four calibrators and the origin, as well as the presented linearity study which did use four calibrators without the origin in the calibration curve. The reported result of 0.43 is below the laboratory's reporting limit of 100 pg/mg, and the LOD/LOQ presumably established in their linearity study.

The confirmation batch log does not reflect that QC samples (controls) were run with the batch.

<u>Comments and Conclusions</u>

It appears the laboratory was operating under an unapproved SOP. The analyses were completed [case sample and baseline] on or about 25 Oct 19. The SOP was approved by Dr. Lykissa on 30 Oct 19, which was corroborated by Dr. Vareed.

The laboratory did **NOT** follow the presented SOP, as far as using a multi-point calibrations curve; instead use a single point calibrator which is not a forensically acceptable method to produce a quantitative value. Furthermore, the laboratory did NOT follow its reporting criteria, in that the case sample and "baseline" result should have both been reported out as NEGATIVE, since both results were below the apparent LOD/LOQ of the method, and the questionable identification of lidocaine based upon the presented data.

The laboratory **did not validate** the lidocaine method as required by CAP and good forensic laboratory practice. The only presented "validation data" [minimal at best] was generated **AFTER** a request for the validation study relating to the captioned complaint.

In both confirmation batches, the calibrators appear to be overloaded, and in neither of these batches were QC samples analyzed.

Delta-9-THC:

THC SOP

A 4-point calibration curve is generated; the SOP is silent on whether the origin is included in the calibration curve. The SOP does not define the "Threshold Standard"; in which the ion ratios of the controls and client [case] sample are compared, although one may assume the reporting cut-off calibrator [5 pg/mg] is the same as the threshold standard.

The acceptance criteria [THC SOP pg 4 of 8] for controls are [abstracted]:

- Negative control must demonstrate no drug present as defined by Limit of Detection.
- The Positive Controls Quantitative Value must be within ± 30% of the established mean. However, under Calibration, the SOP states the QCs should be within ± 30% of the *targeted* values.
- The Retention Time must be within ± 4% of the Threshold Standard.
- Control has an acceptable parameter (i.e. chromatographic quality).
- If the criteria are not met, "The run should be rejected".

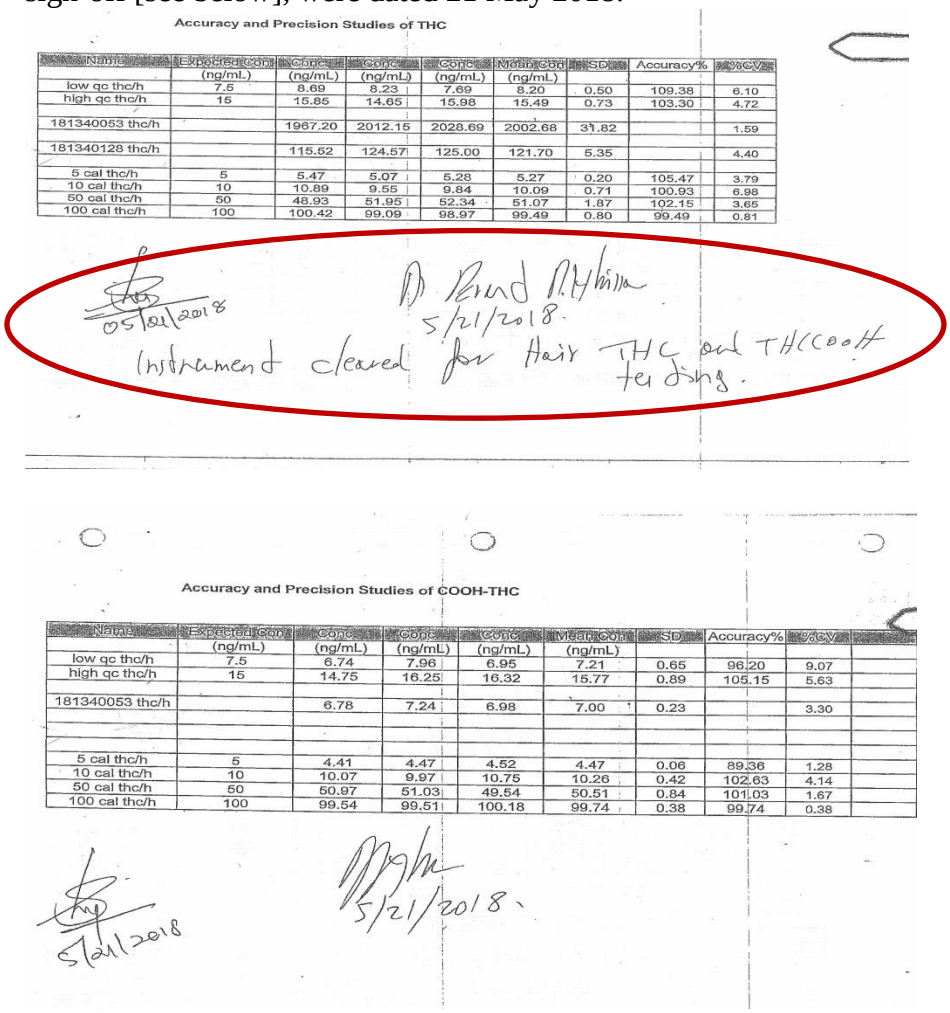
There is no mention of chromatographic quality as far as acceptance or not for a calibration point and/or batch run.

The SOP states "Review of the data is documented by the Director or Certifying Scientist's initials on the chromatograms."

THC Validation Study

An undated or signed summary of THC and Carboxy-THC validation parameters, excluding ion suppression/enhancement results was presented.

The Accuracy and Precision Studies for THC and Carboxy-THC, with approval sign-off [see below], were dated 21 May 2018.



Accuracy and Precision Studies of THC

Name	Expected Conc (ng/mL)	Conc (ng/mL)	Conc (ng/mL)	Conc (ng/mL)	Mean Conc (ng/mL)	SD	Accuracy%	%CV
low qc thc/h	7.5	8.69	8.23	7.69	8.20	0.50	109.38	6.10
high qc thc/h	15	15.85	14.65	15.98	15.49	0.73	103.30	4.72
181340053 thc/h		1967.20	2012.15	2028.69	2002.68	31.82		1.59
181340128 thc/h		115.52	124.57	125.00	121.70	5.35		4.40
5 cal thc/h	5	5.47	5.07	5.28	5.27	0.20	105.47	3.79
10 cal thc/h	10	10.89	9.55	9.84	10.09	0.71	100.93	6.98
50 cal thc/h	50	48.93	51.95	52.34	51.07	1.87	102.15	3.65
100 cal thc/h	100	100.42	99.09	98.97	99.49	0.80	99.49	0.81

05/21/2018

D. Reed M. Lykissa 5/21/2018.

Instrument cleared for Hair THC and THCCOOH testing.

Accuracy and Precision Studies of COOH-THC

Name	Expected Conc (ng/mL)	Conc (ng/mL)	Conc (ng/mL)	Conc (ng/mL)	Mean Conc (ng/mL)	SD	Accuracy%	%CV
low qc thc/h	7.5	6.74	7.96	6.95	7.21	0.65	96.20	9.07
high qc thc/h	15	14.75	16.25	16.32	15.77	0.89	105.15	5.63
181340053 thc/h		6.78	7.24	6.98	7.00	0.23		3.30
5 cal thc/h	5	4.41	4.47	4.52	4.47	0.06	89.36	1.28
10 cal thc/h	10	10.07	9.97	10.75	10.26	0.42	102.63	4.14
50 cal thc/h	50	50.97	51.03	49.54	50.51	0.84	101.03	1.67
100 cal thc/h	100	99.54	99.51	100.18	99.74	0.38	99.74	0.38

5/21/2018

5/21/2018.

Although the sign-off by unknown individual indicated the instrument was cleared for use, it failed to identify the instrumental platform.

The above Accuracy and Precision Studies did not have supporting data for the above approval.

Data for Interference Studies, and a Carry-Over Study had acquisition dates of 9 July 2018, and Additional Accuracy Studies with an acquisition date of 27 July 2018. The additional Accuracy study was approved on 30 July 2018 by Dr. Lykissa. The Summary Table for Carry-Over reflects a 100 ng calibrator

followed by a 2.5 ng calibrator, whereas the sequence table appears to reflect a 1000 ng THC calibrator followed by 2.5 ng calibrator.

The THC Hair Validation study did not address other important parameters in a properly validated method, such as the following; in a method which appears to have been use for many years:

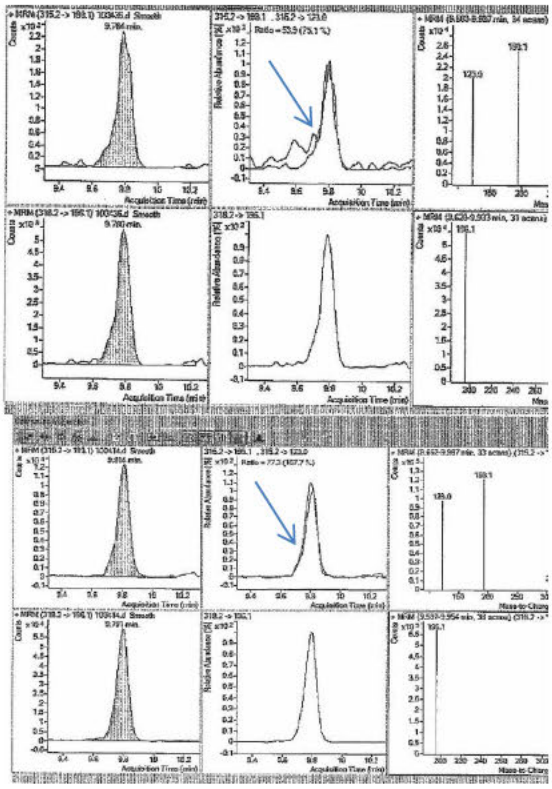
- Bias in the method
- Interferences by other compound with the method
    - Although the method was challenged with a number of commonly encountered compounds, it was not challenged with any synthetic cannabinoids for interference.
- Ion suppression/enhancement in the LCMS method [matrix effects]

Case Data [#192750040]

The THC SOP states [THC SOP pg 4 of 8] "If the quantitative value for the positive control is out of range or any other parameters are unacceptable (i.e. retention time, ion ratios, chromatographic quality, etc.). The run is to be **rejected**."

The Confirmation Batch Log Worksheet [Batch 10031904; 4 Oct 2019] does have QC results "checked" as acceptable. However, the case data does not reflect the established mean and/or range for the Controls. Although, if one relies upon the target values, then it appears the QCs are within acceptable ranges.

The SOP states that any interfering peak on the case sample should have baseline resolution. It is apparent, as shown below, that there is some interference with the case sample chromatography, and thus calls into question of the identification based upon transition ratios.



Case Sample THC 7.5 pg/mg

Low QC THC Target 7.5 pg/mg

Comments and Conclusions

The Validation Study did not have supporting data for the determination of the Accuracy and Precision of the method. Furthermore, it lacked key components for a forensically acceptable study: Bias, Interferences, and Ion suppression/enhancement in the LCMS method.

The laboratory reported out a quantitative result, with poor quality identification data for the case sample.

It is unclear what acceptable range for the controls were utilized by the laboratory.

Overall Opinion and Comments

In summary, on 25 Oct 2019 EXPERTOX issued a hair test result, and subsequently an expert opinion report on 25 Feb 2020 relative to the interpretation of the results in a criminal proceeding in Philadelphia, PA. As a result of an initial review of the report/opinion by an outside expert, the State dismissed the criminal charges and filed a complaint with the Texas Forensic Science Commission.

As a result of that complaint, I was asked to review and evaluate the case material and provided a response to the below questions [my response is indicated briefly following each question].

1. **Are the hair testing results reported by ExperTox supported by the data provided by the laboratory?**

   NO

2. **Are the hair testing results provided by ExperTox supported by accepted scientific reporting criteria in forensic toxicology?**

   NO

It is my opinion that the Toxicology Report should never have been issued, and the "expert opinion" is not founded or support by the scientific literature.

My opinions and response to the posed questions are further supported by the following:

- GHB reported "Detected < 50 pg/mg" is in conflict with the result of zero written on the confirmation batch log.
- Not following approved SOP or testing without approved SOP [Lidocaine]
- Ignoring poor quality of the raw data
- Using an assay [lidocaine] that had absolutely no validation or anything remotely associated with establishing any validation parameters in the batch that the case sample was run; and most disturbing when the validation study was asked for in August 2021[relative to this inquiry], the laboratory finally produce the "Linearity Study" which was run on or about **10 Sept 2021**.
- Lab Report states "This test is developed and **validated** by ExperTox Laboratory."
- Reported lidocaine values were below the SOP stated reporting limit and should have been reported as **negative**.
- In Dr. Lykissa's letter of 29 March 2021 to Mr. Robert Smith, he states in reference to this matter that the tests were not performed with forensic criteria.
- Given the poor quality of the produced data and apparent missing key data points, i.e. ion abundances; one can't assess whether or not the ion ratios are acceptable according to standard forensic practices. The SOP states they must be within $\pm$ 30%, the print out does suggest they are. However, $\pm$30% may not be acceptable given the abundances of the two ions are unknown.

3. **Was the interpretation provided by ExperTox regarding impairment of the complainant (sic) scientifically valid?**

NO

In Dr. Lykissa's report [reference to ExperTox Hair Drug Test collected 30 September 2019], dated 25 February 2020 he states: *"It is my professional opinion that these amounts of THC and Lidocaine detected in Ms. (name redacted) hair, constitute evidence of potential serious combined enhanced pharmacological effect to her ability to control her Mental and Physical faculties."*

The following comments and opinions are assuming that the THC and Lidocaine were actually present in the hair, as discussed previously, they results should have been negative and hence there is nothing to interpret.

THC *may have* a cognitive impact while the individual is acutely intoxicated. However, the presence of a drug(s) in a hair sample will only **indicate exposure** to the drug and cannot be directly associated with intoxication, in isolation, on a particular day.

The ExperTox request form [A308361; collection date 30 Sept 2019] does ask that the submitted hair sample be tested for lidocaine.

Lidocaine is a local anesthetic and antiarrhythmic drug and is generally **not known** for its intoxicating or impairing effects. It has a generally low bioavailability, approximately 35%; therefore with oral administration most of the drug will not reach systemic circulation and therefore will have little to no central effect. At high systemic [IV] doses, this medication *may* cause some adverse side-effects; including CNS effects such as dizziness, confusion and loss of consciousness. The incidence of CNS toxicity (i.e. depression) is dose dependent and quite rare, with reported frequency of less than 1% following IV administration.

An isolated report suggests that lidocaine has been used to facilitate a sexual assault [Suchan and Adamowicz 2013]. Fathy et al [2019] suggest that IV lidocaine may cause postoperative cognitive impairment. In commenting on Fathy et al [2019], van der Veen and Slagt [2019] they state that the postoperative cognitive dysfunction is not due to the anesthetic technique or drug, but patient characteristics; such as age and frailty.
The presence of lidocaine may be due to the sexual assault examination [coating of the speculum with lidocaine], topical treatment of minor injuries sustain in the time frame in question, and/or as a lubricant used during the alleged assault.

A review of the literature does not suggest any clinically relevant potentiation, additive or synergistic effect(s) of lidocaine with the co-administration of THC.

4. **Does the Expert have any observations regarding the role of the accrediting body (CAP) in providing oversight for any issues observed during the course of Expert's review?**

YES

CAP performed a laboratory assessment of ExperTox on or about 8 June 2018. One of the deficiencies that related to this evaluation was TLC.10475.

TLC.10475 [Validation of LC (MSMS) 4]

In CAP's 29 June 2018 letter to Dr. Lykissa, they listed criteria that should be presented in a validation study; e.g. accuracy, precision, interferences, reportable range, and matrix matched reference material. It appears this was provided by ExperTox for THC in hair to CAP on or about 18 July 2018.

However, when the validation study was requested on or about 30 Aug 2021 from ExperTox, as part of this review [TPR], it was received on 16 Sept 2021 key components of a forensically acceptable validation study were still absent. As discussed previously, the study did not address other important parameters in a properly validated method as required by CAP; such as the following:

- Precision and Accuracy of the method
- Bias in the method
- Interferences by other compound with the method
- Ion suppression/enhancement in the LCMS method [matrix effects]

Comments and Conclusions

It appears that ExperTox was using an improperly validated method for lidocaine, and in my opinion still is, after being put on notice and required to correct for another analyte [THC] several years prior to the case specimen in question.

It appears that the absence of a validation study for Lidocaine was not noted by the CAP inspection of 29 July 2020. The only deficiency reported was GEN.20450; the inspector commented on "There were write-overs on temperature OCs. No correction of write-over was observed."

The CAP Inspector's Summation Report for inspection date 29 July 2020 reflects no deficiencies for the Forensic Drug Test Unit. Given the issues noted by my review, I am assuming the CAP inspector only looked at the target analytes for their program, and not additional compounds [i.e. lidocaine] tested in ExperTox's "Date Rape Panel-Hair" panel. I further suspect the possibility that the inspector was presented with limited and "clean data" for review, or perhaps just data from urine specimens.

5. **Are there any other observations Expert believes would assist the FSC in addressing the complaint filed in this matter?**

Yes

5.1: The overall quality of documentation was poor.

5.2: CAP initially advised EXPERTOX of validation deficiencies for LCMS#4 on 29 June 2018, and gave the laboratory a list of needed validation parameters. The laboratory apparently ignored this advisory for lidocaine, in that a validation study was not performed. Upon request [20 Aug 2021] for the validation studies, on 30 Aug 2021 Dr. Lykissa asked for additional week to produce the required studies. However, they used this time, on or about 10 Sept 2021, to conduct a "validation study" for lidocaine. These were received on 16 September 2021. The Lidocaine study only addressed a few of the criteria; i.e. linearity and apparent carry-over.

5.3: The data requested both by the Philadelphia DA and your Commission was of such poor quality [legibility] that a review was difficult at best. Several data points were missing so one could not verify [ion ratios] compliance with either EXPERTOX SOPs or standard practice in the industry.

5.4: The use of the same stock solution for calibrator(s) and controls or the absence of documentation of the lots numbers for the calibrators and controls.

- GHB: Issue discussed in prior GHB section.
- General "Date Rape" Screen [Batch 09301908/10031908] and Fentanyl [Batch 10021904] had the same lot number and expiration date [01032019 & 1/21] for ALL calibrators and controls.
- Opioid batch for Tramadol and Meperidine lacked documentation of the Lot # and Expiration date for calibrator(s) and controls.

5.5: There was an overall perception of poor or non-existent management review and approval of validation studies, SOPs and case data.

5.6: <u>Non-Forensic Report v Forensic Report</u>

On 22 March 2021, Staff Attorney Robert Smith inquired to ExperTox what their policy relating to "Results are for CLINICAL USE ONLY, NOT FOR FORENSIC PURPOSES". ExperTox Laboratory Director Ernest Lykissa replied that the statement is used as a disclaimer for establishing the validity of our published results only for clinical practice. "….since the [tests] were not performed with forensic criteria (i.e. valid Forensic Chain of Custody, Forensically validated methods.)"

ExperTox SOP for Non-Forensic Reporting v Forensic Reporting, signed by Ernest Lykisaa, PhD on 8 Sept 2018 states in part the following:

"The stellar discrepancy of a clinical test vs. forensic is the lack of a valid forensic chain of custody. In addition, the original clinical report does not usually meet forensic criteria. Therefore, in order to remedy these discrepancies, we will review all documentation, received in the lab regarding the specimen, and generated by instrumental analyses. We may then contact the sample collecting facility and advise them that we need an affidavit signed by the collector that addresses the omissions of the clinical requisition form, and the need to generate a forensic chain of custody form. The sample tested needs to be retrieved if it resulted in positive drug findings and retested under forensic protocol per our SOP and reported as such."

There does not appear to be data to support a retest, and the Lab Report without the Clinical disclaimer does not reflect it is an amendment or addendum report. In a comparison of the two reports, it appears that the only change/amendment [not reflected on the report] was the removal of the Clinical Disclaimer statement. There appears to be two invoices from ExperTox to ARCpoint [collection site] for the "Date Rape Panel"; Invoice #81833 31 Oct 19 for Accession #1927550050, with Donor Name redacted in the amount of $345.00 and the second Invoice #82169 for a "Forensic Version" of the Report, with the donor name redacted in the amount of $1,315.00.

The significant upcharge for a simple removal of the disclaimer, without retesting or review and no indication of an amendment/addendum should raise some ethical concerns.

I believe the review of the provided material is sufficient to call into question the accuracy and quality of data in the matter at hand.

I reserve the right to review any additional information subsequently made available and to modify, if necessary, my opinion based upon the new information.

If I may be of further assistance and/or you would like to discuss this report, please do not hesitate to call.

Respectfully submitted,

/s/ *Timothy P. Rohrig*

Timothy P. Rohrig, Ph.D., F-ABFT

Suchan M, Adamowicz P. Problems of Forensic Sciences 2013:96 752-64.
Fathy W, Hussein M, Khalil, H. Local and Regional Anesthesia 2019:12 1-6.
Van der Veen GJ, Slagt C. Local and Regional Anesthesia 2019:12 27-28.

EXHIBIT L

ExperTox
drugs.alcohol.poisons.laboratory

1430 Center Street
Deer Park, Texas 77536
Ph. 281-476-4600
Fx. 281-930-8532
www.expertox.com

Date: March 29, 2021

Robert Smith Esq.

1. In the last 3 years I can recall of five cases (see below) in which the Donors of the Hair specimen submitted the reports of Expertox to authorities , as proof of abstinence or adherence to Court dictates (i.e. probation). To clarify, the report was issued to the submitting collection facility, which forwarded the report to the Donor of the Hair specimen

2. In the last 3 years and in at least 5 instances that I can recall, out of state District Attorneys demanded phone interpretation of hair testing results. In every occasion they also asked for written interpretational reports which I declined in every case, and asked them to call NMS Labs in Pennsylvania.
For example, in the Wood Carrie case in Philadelphia, the DA asked me to testify on this case for which I declined since the test had been performed for Clinical Use only. The reason been that we did not have, a Forensically validated hair testing method for Lidocaine at this time, only for clinical testing. Then the DA literally begged me to write something down hypothetically for the Lidocaine and THC combined effect on someone's mental state which reluctantly I did (my wrong decision) send her the standard report I issue to the Medical Centers in the Houston area to Medical Doctors handling critical care patients.. I also recall telling her that the Lidocaine detected in the baseline segment was disproving the claim of the plaintiff that the Lidocaine was administered by the defendant. Only the THC was pertinent. I also advised her to talk to NMS for supportive testimony. The complaint was filed with your Commission by the Defense Attorney who demanded from my assistants, for me to consult with her which I declined.
Please note: In the last 3 years, there have been multiple phone consultations with Medical Practitioners about the Clinical significance of the hair testing findings issued by my Laboratory. In these cases, i.e. Memorial Hermann Prevention Facility for Substance Abuse Rehabilitation, and for Critical Care patients in Hermann Hospital and Children's Hospital of Houston written interpretational reports were issued.

3.The statement on our reports, issued by our laboratory, "FOR CLINICAL USE ONLY AND NOT FOR FORENSIC PURPOSES", is utilized as a disclaimer for establishing the validity of our published results only for the clinical practice that originally ordered these test reports. No attorneys or prosecutors may issue subpoenas for these tests since they were not performed with forensic criteria (i.e., valid Forensic

Chain of Custody, Forensically validated methods). The Forensic Mandates in accordance to the mandates of our National Forensic Accreditation by the College of American Pathologists, are only utilized for testing hair samples of, i.e., Houston Police Deputies, and for Human Resources Entities, for Pre- Employment of new Hires, and or for Cause on the job sites of Houston.

4.
Expertox List of Hair Drug Testing Confirmations by GCMS/LCMSMS

Amphetamine, Methamphetamine, MDA, MDMA (Extasy), MDEA,
THC and metabolites,
Opiates, 6- Acetylmorphine,
Cocaine and metabolites,
PCP,
Benzodiazepines and metabolites,
Barbiturates,
Methadone and metabolite,
Propoxyphene and metabolite,
Meperidine and metabolite,
Tramadol and metabolite,
Fentanyl, Sufentanyl, Ketamine and metabolite,
Lidocaine,
Promethazine,
Amitriptyline, Nortriptyline, Imipramine, Desipramine, Doxepin, Desmethyl-Doxepin,
Buprenorphine and metabolite,
Chlorpheniramine,
Citalopram,
Sertraline,
Dextromethorphan,
Dimethyltryptamine,
Diphenhydramine,
Ethyl Glucuronide,
Fluoxetine,
Gabapentin,
GHB (Gamma Hydroxy Butyrate), 1,4 Butanediol
Mitragynine,7-Hydroxymitragynine,
LSD, 2-OXO-3-OH-LSD,
Methylphenidate,
Naltrexone,
Tizanidine,
Nicotine, Cotinine,
Psilocybin, Psilocin,
Scopolamine,
Tapentadol,

Doxylamine, Brompheniramine,
Carisoprodol, Meprobamate,
Cyclobenzaprine,
Methocarbamol,
Phentermine
Methaqualone,
Zolpidem, Zopiclon

Note: Dr. S. Vareed and myself have obtained Provisional Texas Forensic Analyst Licenses at this time (early in March 2021). And need be by the commission we will seek whatever additional accreditations will satisfy any requirements we must meet.

Ernest D. Lykissa Ph.D.
Molecular Pharmacology,
Medicine and Experimental Surgery
Clinical and Forensic Toxicologist
Expertox Laboratory Director

EXHIBIT M

FORENSIC SCIENCE COMMISSION QUARTERLY MEETING

JANUARY 29, 2021

VIA ZOOM

(Requested excerpt begins)

MARK DANIEL: Which brings us to complaints, and our first is 20.55. It's brought by the Philadelphia attorney's office that's making allegations against ExperTox Lab concerning hair follicle testing. They allege they conducted scientifically unreliable testing on hair follicles on a sexual assault survivor. The analysis of the hair was for the presence of delta(9)-THC and also lidocaine. The district attorney's office consulted and obtained NMS Labs to review the case and offer opinions regarding the testing of ExperTox.

We now have NMS's final report available to us. It's consistent with their original draft. NMS found the testing form did not align with generally accepted requirements of forensics testing. It found the testing for lidocaine did not contain the appropriate quality control samples. It found the method used to quantify the baseline specimen and the case specimen were wholly inconsistent. It found the single point calibration used to quantify lidocaine in the case was not really successful, and then the analytical result did not support a final indication of lidocaine.

So with that being said, we reached out to

ExperTox and they had responded that this was for clinical purposes only and not forensic. I understand Dr. Ernest Lykissa -- I may have pronounced -- mispronounced that name -- is available today to respond to that or enlighten us on what they mean on clinical purpose versus forensic.

And, Lynn, maybe that might be -- make him available for discussion. Questions about that might be appropriate.

LYNN GARCIA: Yes, I believe they're on the line.

So, Leigh, can you make sure that they can unmute?

Let me see, I'm going to ask to unmute.

LEIGH TOMLIN: Yeah, they can.

LYNN GARCIA: Okay, super. Thank you.

ERNEST LYKISSA: Okay, can you hear us now?

LEIGH TOMLIN: Yes.

ERNEST LYKISSA: Okay. We're on.

MARK DANIEL: Let me begin with a question if I may, Dr. Barnard. I saw the response that they said that their work was for clinical purposes only and not forensic, and that's fine, but I understood the sample was submitted to them in connection with a sexual assault matter. So I'm trying to understand that. If

y'all can help us, please.

ERNEST LYKISSA: Okay. We will tell you that they were informed at the time because they had written specifically for lidocaine. They were informed at the time that the only method of lidocaine we had in our laboratory validated -- it was not for a hair lidocaine. We don't usually do hair with lidocaines. They said, well, can you see it? If you -- if you see it, that will be enough quantitatively. That's what we were told by the -- the district attorney, okay, up there.

And so we did find lidocaine, but it was in a clinical method. We had no time to validate anything here, okay. We were just going to tell them quantitatively.

The THC was perfectly there, and it had not been there on the baseline. The baseline refers to a growth segment of the hair that does not correspond to the growth of the -- of the incident date, something from before, because we get long hair. So the -- the most proximal ending is usually the one that they are interested in. So we went before that and we tested, believe it or not, in the baseline about one month's worth of growth between June of 19 and 7 of 19, and what we did obtain in this particular one -- no. No. No,

let me see here. Excuse me.

7-16. Yes, 7-16 to 8-13 was the incident date. The baseline was 6-18 to 7-16. In that particular one, we detected lidocaine in a very small amount and then we detected no THC.

Now, the THC -- there's no problem with the THC. They never mentioned anything about the THC. I told them, I said, look -- when they called me, I said, this test was done clinically. You can take it for approximately, you know, and look at it, and we see a 3.9 showing up on the incident date. You see a .43. Who tells you that she did no take it by herself. She was taking it before. We don't have any evidence, okay. I said, I do not want to testify on this case. I do not -- I cannot offer you anything scientifically valid.

I said, and please read the caveat that I bolded for you, you know, capitalized for you, clinical use only, not for forensic purposes. I cannot say it any louder and not clearly without being obnoxious.

LYNN GARCIA: So this is Lynn Garcia. I'm -- I'm looking at a report that ExperTox released February 25th of 2020, and it says, it is my professional opinion that these amounts of THC and lidocaine detected in the survivor's hair constitute evidence of potential serious combined enhanced

pharmacological effect to her ability to control her mental and physical faculties. If these drugs were administered to her without her consent, then that could constitute a drug facilitated assault by the perpetrator.

ERNEST LYKISSA: Well --

LYNN GARCIA: And when I read that, what I see is -- you know, setting aside whether that type of statement is supportable just as a scientific matter --

ERNEST LYKISSA: Well, it's not an absolute.

LYNN GARCIA: Well, what I am -- but let me finish my statement.

So what I see there is what we would classify under Texas law as interpretive toxicology. So you're talking about pharmacological effects of drugs in a person's system. This is clearly within the context of a criminal action, and so my question is -- you know, Texas law requires two things. One is accreditation of the laboratory, and the second is licensing of analysts. So under 38.01 of the Code of Criminal Procedure, it states that a person may not act or offer to act as a forensic analyst unless the person holds a forensic analyst license.

So just to be really clear, there are a

number of concerns, I think, that we have about ExperTox's -- I understand that you do a lot that does not have to do with the criminal justice system, but to the extent that the work you do does interface with the criminal justice system, there are -- the legislature has set forth very clear parameters within which people are expected to operate and within which we have, you know, many, many, many labs - small, large, public, private, inside of Texas, outside of Texas - who comply with all of these requirements.

So for me, there are multiple questions that arise in reviewing this complaint that was filed by the DA's office in Philadelphia.

ERNEST LYKISSA: Are you waiting for a reply?

DR. BARNARD: Well, do you have a reply?

ERNEST LYKISSA: Well, yeah. I mean, we -- I mean, if you look at my resume, sir, I was doing forensic toxicology in California before there was such a field. Okay. And -- with my other (unintelligible) mass specs that we had there in SAMHSA labs both in Los Angeles and in -- also in the Fresno, California area. And I've testified in a lot of federal courts, and I think with my 75 years on my head, I can tell you that I have seen everything that the forensic arena can show,

okay, but I've been a professor at Baylor College of Medicine in clinical and forensic toxicology, and as far as I'm concerned, these tests should not have been used because I did tell her finally, even though I wrote that report, that it -- that those results, based on what we -- we published on this report, are consistent with someone having a -- because I also in my PhD, I have experimental medicine and surgery and molecular pharmacology. So I have a pharmacological professional opinion, okay. So I'm not a chemist from somewhere, okay, to put out in the protections that I know nothing about the drugs.

So these drugs, if I find them in somebody and I have validated methods -- the THC method was validated. That was a validated method. And according to the College of American Pathology forensic accreditation, we are fully accredited to do things outside of Texas because with Texas, you -- the Texas Commission has put me on a -- on a watch list for not doing anything forensic in Texas, and I have refused a lot -- every day we are refusing specimens from Texas, okay, when attorneys want to do secondary testing for this and that, and I -- and I tell them, we cannot do that in Texas.

And as far as I'm concerned, we also have

ISO 17025 in hair testing, and we are No. 3 laboratory in the SAMHSA list of laboratories to be starting hair testing for forensic purposes by SAMHSA, okay, in truck drivers starting of this year.

So all I can tell you is I know what I'm talking about, and I feel that my caveat at the bottom of that result, clinical use only, not for forensic purposes, was put there for only one reason, to absolve me from having something like this happening to me, okay. And I don't take it very nicely, obviously. I'm sorry, but I'm suffering from some vaccine or COVID low-grade fevers right now.

So anyway. So that's all I'm going to tell you, and I find it completely -- I mean, the THC was perfect. The only thing that we had was the lidocaine, and the lidocaine, as far as I'm concerned, with one standard in clinical practice with a calibrator on a LC triple quad mass spec not only visualizes the molecule for you, but also you can get some intensity of signal that you can qualify over a -- another injection of a standard. So that's all we did, okay.

LYNN GARCIA: So I just want to be clear about something in terms of the law, which is that the law defines what forensic analysis is, and forensic analysis is an expert examination or test on physical

evidence for the purpose of connecting the evidence to a criminal action. The term "criminal action" is broadly defined under Texas law. What the law does not say is that if you write a sentence in the bottom of your report that says this is not intended for forensic purposes but you know that the client is using it for forensic purposes --

ERNEST LYKISSA: Oh, I did not at the time. No, I did not. It came through a collector. Excuse me. It came from our point in Philadelphia. I didn't know why they were testing. The specimen showed up at our door and we went ahead and test it, okay, but they were also told that the lidocaine was only validated for clinical purposes. So we put that caveat at the bottom for that reason.

So I would like to beg you guys to look at this, okay, from my position and understand that sometimes between the collectors and the lady that went to the collector with a self test that she paid them, okay, and then I get the test and I'm not given any knowledge like you have in your cases that you do in your laboratories. You have officers testifying with you telling you I arrested somebody for this, I arrested -- I don't know anything about these people that are sending the specimen to me.

LYNN GARCIA: So you --

ERNEST LYKISSA: Go ahead.

LYNN GARCIA: But it is quite clear from everything that we have that you interacted directly with the DA's office, and it's also quite clear that you provided an opinion about drug-facilitated assault by the perpetrator, your words. So I just want --

ERNEST LYKISSA: No, possible perpetrator. Please, you're making the statement absolute when it's not.

LYNN GARCIA: I'm reading your report. That's all I'm doing. Word -- verbatim, the language that is in your report.

So I guess what I would say is one of two things, either -- if it is true that you don't do criminal -- that you don't do forensic analysis as that term is defined under the Code of Criminal Procedure, then the best option is just to take you off the list of accredited laboratories in Texas so that there's no confusion among the criminal --

ERNEST LYKISSA: I don't see why my accreditation in Texas has anything to do with something that happened in Philadelphia.

LYNN GARCIA: The point is that if you are doing -- if you are holding yourself out as a forensic

analyst and you're doing that work in Texas, you need to be licensed and the lab needs to be accredited. That is what the law says. So you can't have it both ways. And that's what I think is -- is happening here, is that you want to be able to caveat your way out of -- of the requirements of state law, and that is not what any other lab that works within our jurisdiction -- whether physically located here or not, nobody else gets to do that. No matter if they've been a PhD toxicologist for 60 years or 70 years, everybody is subjected to the same requirements if you meet the statutory definition.

So what I would suggest is that one of two things either is going to happen. One is that you remove yourselves from our jurisdiction by getting off the list of accredited laboratories for purposes of being able to have your evidence entered in criminal trials, or if you're going to be subject to our jurisdiction because you want the ability to do that, then that means that everything else that all -- every other lab has to subject themselves to in terms of our rules and our oversight and the licensing requirements, then all of that applies. So it has to be one or the other. It can't be both.

ERNEST LYKISSA: Well, we'll take the second one. If you can give us probation in order to --

for some time, whatever you -- your members decide to proceed with your guidance and try to achieve a fulfillment. I'll be -- I'll be retired by next month, so, you know, my -- Dr. Vareed next to me, he will make sure that these things are taken care of.

LYNN GARCIA: Okay. So if that's the case, then -- if they are going to be subject to -- like all of the other accredited labs and labs that need to be licensed, then my suggestion would be that a panel be created in order to address all of these issues.

DR. BARNARD: Mr. Daniel?

MARK DANIEL: Well, Dr. Barnard, in light of -- we appreciate Dr. Lykissa's response and comments.

(Requested excerpt concludes)

REPORTER'S CERTIFICATE

STATE OF TEXAS)
COUNTY OF TRAVIS)

I, Shonna K. Castillo, Certified Shorthand Reporter, certify that the foregoing is a correct transcription, to the best of my ability, from the video recording of the proceedings as provided to me in the above-entitled matter.

I further certify that I am neither counsel for, related to, nor employed by any of the parties to the action in which this hearing was taken, and further that I am not financially or otherwise interested in the outcome of the action.

WITNESS MY OFFICIAL HAND this the 7th day of June, 2021.

Original certified for Forensic Science Commission

/s/ Shonna K. Castillo
SHONNA K. CASTILLO
Certified Shorthand Reporter
Texas Merit Reporter
Registered Professional Reporter
Certification No. 4896
Expires: 10-31-21
(512) 589-3152
shonnacsr@gmail.com

EXHIBIT N

ETHICS

Guiding Principles of Professional Responsibility

>> Download SOFT's Ethics Procedures <<
>> Download SOFT's Ethics Complaint Form<<

Society of Forensic Toxicologists (SOFT) Code of Ethics

As a Member of the Society of Forensic Toxicologists (the "Society"), I agree to conduct myself in a professional manner, in accordance with the following ethical principles. I understand if I behave in a manner detrimental to the organization or the profession of forensic toxicology in general, I may be censured or expelled from membership.

Members agree to:

1. Perform professional activities with honesty, integrity and objectivity.

2. Refrain from knowingly misrepresenting professional qualifications including, but not limited to: education, training, experience, certification, area of expertise, and professional memberships.

3. Hold in confidence and refrain from misuse of information obtained or received in the course of professional activities.

4. Provide expert advice and opinions within the limits of individual competence and generally accepted scientific principles.

5. Render testimony in a truthful manner without bias or misrepresentation.

6. Refrain from exercising professional or personal conduct adverse to the best interests and objectives of the Society.

Guiding Principles Preamble

The Guiding Principles are intended to create a culture of ethical behavior and professional responsibility among SOFT members and/or affiliates. The concepts presented here have been drawn from other professional codes and suggestions made by leaders in the forensic community[1]. The Guiding Principles have been vetted and adopted by the Society of Forensic Toxicologists (SOFT) Board of Directors with the expectation that forensic toxicologists and forensic toxicology laboratory personnel and management will use them in training sessions, performance evaluations, disciplinary decisions, and as guides in other professional and management decisions. It is important that all individuals engaged in forensic toxicology are equally aware of these Guiding Principles and incorporate the principles into their daily work.

These Guiding Principles provide a framework for describing ethical and professional responsibilities in the forensic community. While not all inclusive, they describe key areas and provide some specific rules to supplement the existing Code of Ethics adopted by SOFT.

Professionalism

The ethical and professionally responsible forensic toxicologist and forensic toxicology laboratory manager:

1. Are independent, impartial, detached, and objective, approaching all examinations with due diligence and an open mind.
2. Conduct full and fair examinations. Conclusions are based on the evidence and reference material relevant to the evidence, not on extraneous information, political pressure, or other outside influences.
3. Are aware of their limitations and only render conclusions that are within their area of expertise and about matters which they have given formal consideration.
4. Honestly communicate with all parties (the investigator, prosecutor, defense, and other expert witnesses) about all information relating to their analyses, when communications are permitted by law and agency practice.
5. Report to the appropriate legal or administrative authorities unethical, illegal, scientifically questionable conduct or impaired competence.
6. Take appropriate action if there is potential for, or there has been, a miscarriage of justice due to circumstances that have come to light, incompetent practice or malpractice.
7. Report conflicts between their ethical/professional responsibilities and applicable agency policy, law, regulation, or other legal authority, and attempt to resolve them.
8. Do not accept or participate in any case on a contingency fee basis or in which they have any other personal or financial conflict of interest or an appearance of such a conflict.

Competency and Proficiency

The ethical and professionally responsible forensic toxicologist and forensic toxicology laboratory manager:

1. Are committed to career-long learning in the forensic disciplines in which they practice and staying abreast of new technologies and techniques. Conclusions and opinions are based on generally accepted tests and procedures.
2. Are properly trained and determined to be competent through testing prior to undertaking the examination of the evidence.
3. Give utmost care to the treatment of any samples or items of potential evidentiary value to avoid tampering, adulteration, loss or unnecessary consumption.

Clear Communications

The ethical and professionally responsible forensic toxicologist and forensic toxicology laboratory manager:

1. Accurately represent their education, training, experience, and area of expertise.
2. Present accurate and complete data in reports, testimony, publications and oral presentations.
3. Make and retain full, contemporaneous, clear and accurate records of all examinations and tests conducted, and conclusions drawn, in sufficient detail to allow meaningful review and assessment of the conclusions by an independent person competent in the field.
4. Prepare reports in which facts, opinions and interpretations are clearly distinguishable, and which clearly describe limitations on the methods, interpretations and opinions presented.
5. Do not alter reports or other records, or withhold information from reports for strategic or tactical litigation advantage.
6. Support sound scientific techniques and practices and do not use their positions to pressure an examiner or technician to arrive at conclusions or results that are not supported by data.
7. Testify to results obtained and conclusions reached only when they have confidence that the opinions are based on good scientific principles and methods. Opinions are to be stated so as to be clear in their meaning.

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[1] The Guiding Principles of Professional Responsibility are based upon the ASCLD/LAB Guiding Principles of Professional Responsibility for Crime Laboratories and Forensic Scientists. Prior to adoption, ASCLD/LAB disseminated the Guiding Principles to thirty forensic science organizations (including the Society of Forensic Toxicologists) for comment.

EXHIBIT O

ExperTox Inc.

1430 Center Street
Deer Park, TX 77536

Invoice

Date	Invoice #
12/2/2019	82169

PAID 12/05/2019

Bill To
ARCpoint - Philadelphia 233 S 6th Street, Independence Pl Unit C-2 Philadelphia, PA 19106

REMIT TO:
EXPERTOX INC
EIN #76-0651367
1430 CENTER STREET
DEER PARK TX 77536
Ph: 281-476-4600, Fax: 281-930-8532

Account #
7381665

Terms	P.O. Number	Due Date
Credit Card On File		12/2/2019

New Test!! We now offer an Extended Opioids test that can be ordered without a panel! Please call Customer Service for pricing. We offer this test in Hair, Nails, Blood & Urine! See our new brochure at www.expertox.com

Quantity	Description	Rate	Amount
1	Forensic Version of Reported-- DFSA- W/O ETG-- (Balance owed) Donor:	1,315.00	1,315.00

ALL SERVICES ARE NONREFUNDABLE ONCE TESTING AND/OR CONSULTING HAS COMMENCED. Finance charges of 2.5%, monthly on past due invoice balances, a fee for any returned checks or credit card payments, as well as costs associated with collection of past due amounts, including attorney's fees may be charged to your account.

Total	$1,315.00
Balance Due	$0.00