



NMS Labs

TESTING: TESTLIMS

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Toxicology Report

Report Issued 08/26/2016 08:22

Patient Name Patient last Name, First name
Patient ID Patient ID here
Chain 16001176
Age 42 Y DOB Not Given
Gender Male
Workorder 16001176

To: 88888
NMS Labs
Attn: Example Report
3701 Welsh Road
Willow Grove, PA 19090

Page 1 of 4

Positive Findings:

Table with 4 columns: Compound, Result, Units, Matrix Source. Rows include Ethanol, Blood Alcohol Concentration (BAC), Methanol, Isopropanol, Acetone, 11-Hydroxy Delta-9 THC, Delta-9 Carboxy THC, and Delta-9 THC.

Quantitative results are reported as Result +/- Uncertainty of Measurement (UM). Ethanol results are reported at a coverage probability of 99.73%; all other analytes are reported at a coverage probability of 95.45%.

See Detailed Findings section for additional information

Testing Requested:

Table with 2 columns: Analysis Code, Description. Row: 8151B, DUID/DRE Panel (w/Alcohol) ProofPOSITIVE®, Blood (Forensic)

Specimens Received:

Table with 5 columns: ID, Tube/Container, Volume/Mass, Collection Date/Time, Matrix Source, Miscellaneous Information. Row: 001, Clear vial, Not Given, 08/24/2016 09:42, Blood

All sample volumes/weights are approximations.

Specimens received on 08/26/2016.

Detailed Findings:

Analysis and Comments	Result	Units	Rpt. Limit	Specimen Source	Analysis By
Ethanol	85	mg/dL	10	001 - Blood	Headspace GC
Blood Alcohol Concentration (BAC)	0.085	g/100 mL	0.010	001 - Blood	Headspace GC
Methanol	85	mg/dL	5.0	001 - Blood	Headspace GC
Isopropanol	85	mg/dL	5.0	001 - Blood	Headspace GC
Acetone	85	mg/dL	5.0	001 - Blood	Headspace GC
Ethanol	Confirmed	mg/dL	10	001 - Blood	Headspace GC
Methanol	Confirmed	mg/dL	5.0	001 - Blood	Headspace GC
Isopropanol	Confirmed	mg/dL	5.0	001 - Blood	Headspace GC
Acetone	Confirmed	mg/dL	5.0	001 - Blood	Headspace GC
11-Hydroxy Delta-9 THC	50	ng/mL	1.0	001 - Blood	LC-MS/MS
Delta-9 Carboxy THC	50	ng/mL	5.0	001 - Blood	LC-MS/MS
Delta-9 THC	50	ng/mL	0.50	001 - Blood	LC-MS/MS

Other than the above findings, examination of the specimen(s) submitted did not reveal any positive findings of toxicological significance by procedures outlined in the accompanying Analysis Summary.

Reference Comments:

- 11-Hydroxy Delta-9 THC (Active Metabolite) - Blood:

11-Hydroxy Delta-9 THC is an active intermediate metabolite of tetrahydrocannabinol (THC) the active component of marijuana. THC (Tetrahydrocannabinol) is the active component of marijuana, and cannabis. THC is extensively metabolized to active 11-hydroxy-THC and inactive 9-carboxy-THC metabolites.

- Acetone - Blood:

Acetone is a solvent used for chemicals, paints, etc. It is also a product of diabetic- and fasting-induced ketoacidosis as well as a metabolite following isopropanol ingestion. In high concentrations, acetone can have CNS-depressing effects. Symptoms include lethargy, ataxia, headache, nausea and lightheadedness. Stupor and coma appear in severe cases. Acetone produced in the body as a result of uncontrolled diabetes can also be converted to isopropanol.

Reported normal endogenous acetone levels in blood are up to 3 mg/dL. Levels associated with diabetic or fasting ketoacidosis range from 10 - 70 mg/dL. After exposure to 100 and 500 ppm acetone for 2 hr, reported blood acetone concentrations peaked at 2 and 10 mg/dL, respectively. A blood level of 250 mg/dL was reported in an individual who became lethargic following ingestion of acetone.

- Blood Alcohol Concentration (BAC) - Blood:

I certify that I am the analyst of record for this report. In that capacity I am authorized by NMS Labs to provide the final analytical review of the results in this case. This report cannot be released without my review, and I am responsible for the accuracy of results contained herein. This laboratory is nationally accredited by the American Board of Forensic Toxicologists Inc., and complies with accreditation standards for internal chain of custody, standard operating procedures, analysis of appropriate blanks, calibrators and controls, and other quality control and quality assurance measures, all of which I am familiar with, and which help ensure test result accuracy. I have considered all the information available to me at this time, and it is my opinion and belief that the analysis was properly performed in compliance with laboratory standards and policies, that the results are supported by the analytical data, and that the results accurately reflect the toxicological findings for this subject to a reasonable degree of scientific certainty. If lawfully subpoenaed, I will testify to the above facts in a court of law.

Reference Comments:

4. Delta-9 Carboxy THC (Inactive Metabolite) - Blood:

Delta-9-carboxy-THC (THCC) is the inactive metabolite of THC (tetrahydrocannabinol) the major active component of marijuana, and cannabis. After smoking a user-preferred 300 mcg/kg dose average THC concentrations at 35 minutes were reported at 16.1 (range 4.7 - 30.9) ng/mL, and had declined to 1.5 (range 0.4 - 3.2) ng/mL after 190 minutes. Corresponding concentrations of THCC were 15.3 (range 4.2 - 39.6) at 35 minutes last use, and 10.0 (range 1.5 - 36.3) at 190 minutes. While THC disappears from the blood rapidly, THCC may persist for several hours, and in heavy chronic use may be present at low concentrations for several days. In a population of 3102 drivers arrested for driving under the influence, Carboxy-THC concentrations ranged from 1 - > 100 ng/mL, with a median of 18.0 ng/mL. Other drugs may also have been present.

5. Delta-9 THC (Active Ingredient of Marijuana) - Blood:

Delta-9-THC is the principle psychoactive ingredient of marijuana (cannabis, hashish). It is also the active component of the prescription medication Marinol®. Whole blood THC concentrations are typically half those in a corresponding plasma sample. After smoking a user-preferred 300 mcg/kg dose average THC concentrations at 35 minutes were reported at 16.1 (range 4.7 - 30.9) ng/mL, and had declined to 1.5 (range 0.4 - 3.2) ng/mL after 190 minutes. Marijuana use causes relaxation, distorted perception, euphoria and feelings of well being, along with confusion, dizziness, somnolence, ataxia, speech difficulties, lethargy and muscular weakness. Effects of marijuana use on driving ability may include weaving, inattention, poor coordination and slowed reaction time with increased error rates in complex tasks. These effects worsen with increased THC concentrations. Peak effects typically last from 1-4 hours. THC concentrations in the blood decline rapidly after use, and may be undetectable within 1-3 hours following smoking. Numerous studies have associated marijuana use with impaired driving performance.

6. Ethanol (Ethyl Alcohol) - Blood:

Ethanol (beverage alcohol) is a central nervous system depressant. It causes impairment of cognitive, perceptual and psychomotor capabilities manifested as decrements in alertness, judgment, perception, coordination, response time and sense of care and caution. Potential effects on driving include, but are not limited to, weaving, crossing center or fog lines, failure to obey traffic signals, wide turns, inappropriate speed for conditions, and involvement in collisions. Generally, a person's level of intoxication will increase with rising blood alcohol concentration. Effects are more pronounced in individuals with limited tolerance, especially minors, however at blood alcohol concentrations of 80 mg/dL (0.08 g/100 mL or 0.08% w/v), virtually all individuals exhibit impairment on some critical driving measures.

Analysis performed in duplicate by, internally standardized, headspace Gas Chromatography (GC). The average of the two headspace GC results is reported.

NMS Labs is an approved Laboratory for Alcohol analysis in the Commonwealth of Pennsylvania.

7. Isopropanol (Isopropyl Alcohol) - Blood:

Isopropanol is a common industrial and laboratory chemical that is available as a 70% aqueous solution in 'Rubbing Alcohol'. Isopropanol may be consumed for its intoxicating effects. Isopropanol produces effects in man similar to those produced by ethanol, including impairment of cognitive, perceptual and psychomotor capabilities presenting as decrements in alertness, judgment, perception, coordination, response time and sense of care and caution. As a central nervous system depressant, isopropanol has about two times the potency of ethanol; therefore, while the effects produced are similar, impairment caused by isopropyl alcohol will occur at blood concentrations substantially lower than those of ethanol. Isopropyl alcohol is metabolized to acetone, however acetone produced in the body as a result of uncontrolled diabetes can also be converted to isopropanol.

8. Methanol (Methyl Alcohol) - Blood:

Methanol is contained in paints, cleaners, windshield washer fluid, 'canned heat', and other household products. It may be consumed for its intoxicating properties which are similar to ethanol; however it is much more toxic. In addition to central nervous system depression with its associated slowing of reaction time, lethargy and confusion, methanol can cause blindness due to its toxic metabolites.

Chain of custody documentation has been maintained for the analyses performed by NMS Labs.

Unless alternate arrangements are made by you, the remainder of the submitted specimens will be discarded six (6) weeks from the date of this report; and generated data will be discarded five (5) years from the date the analyses were performed.



Analysis Summary and Reporting Limits:

All of the following tests were performed for this case. For each test, the compounds listed were included in the scope. The Reporting Limit listed for each compound represents the lowest concentration of the compound that will be reported as being positive. If the compound is listed as None Detected, it is not present above the Reporting Limit. Please refer to the Positive Findings section of the report for those compounds that were identified as being present.

Acode 54003B - Cannabinoids Confirmation (DUID/DRE), Blood (Forensic)

-Analysis by High Performance Liquid Chromatography/Tandem Mass Spectrometry (LC-MS/MS) for:

<u>Compound</u>	<u>Rpt. Limit</u>	<u>Compound</u>	<u>Rpt. Limit</u>
11-Hydroxy Delta-9 THC	1.0 ng/mL	Delta-9 THC	0.50 ng/mL
Delta-9 Carboxy THC	5.0 ng/mL		

Acode 8151B - DUID/DRE Panel (w/Alcohol) ProofPOSITIVE®, Blood (Forensic)

-Analysis by Enzyme-Linked Immunosorbent Assay (ELISA) for:

<u>Compound</u>	<u>Rpt. Limit</u>	<u>Compound</u>	<u>Rpt. Limit</u>
Amphetamines	20 ng/mL	Methadone / Metabolite	25 ng/mL
Barbiturates	0.040 mcg/mL	Methamphetamine / MDMA	20 ng/mL
Benzodiazepines	20 ng/mL	Opiates	20 ng/mL
Cannabinoids	10 ng/mL	Oxycodone / Oxymorphone	10 ng/mL
Carisoprodol / Metabolite	500 ng/mL	Phencyclidine	10 ng/mL
Cocaine / Metabolites	20 ng/mL	Zolpidem	5.0 ng/mL

-Analysis by Headspace Gas Chromatography (GC) for:

<u>Compound</u>	<u>Rpt. Limit</u>	<u>Compound</u>	<u>Rpt. Limit</u>
Acetone	5.0 mg/dL	Isopropanol	5.0 mg/dL
Ethanol	10 mg/dL	Methanol	5.0 mg/dL

-Analysis by Headspace Gas Chromatography (GC) for:

<u>Compound</u>	<u>Rpt. Limit</u>	<u>Compound</u>	<u>Rpt. Limit</u>
Acetone	5.0 mg/dL	Isopropanol	5.0 mg/dL
Ethanol	10 mg/dL	Methanol	5.0 mg/dL