



**NMS Labs**

**CONFIDENTIAL**

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Robert A. Middleberg, PhD, DABFT, DABCC-TC, Laboratory Director

**Toxicology Report**

**Report Issued** 09/25/2013 15:01

**Patient Name** PTASZEK, DILLON  
**Patient ID** ME13-648  
**Chain** 11601095  
**Age** 25 Y  
**Gender** Male  
**Workorder** 13224641

**To: 10372**  
University of Michigan - Washtenaw County  
Attn: Dr. Jeffrey Jentzen  
NI2D19 300 NIB  
Ann Arbor, MI 48109

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**Positive Findings:**

<u>Compound</u>	<u>Result</u>	<u>Units</u>	<u>Matrix Source</u>
Ethanol	184	mg/dL	Iliac Blood
Blood Alcohol Concentration (BAC)	0.184	g/100 mL	Iliac Blood
Amphetamine	75	ng/mL	Iliac Blood
Delta-9 THC	3.4	ng/mL	Iliac Blood
Delta-9 Carboxy THC	< 5.0	ng/mL	Iliac Blood
Carboxyhemoglobin	10	%Saturation	Iliac Blood
Cannabinoids	Presump Pos	ng/mL	Urine

See Detailed Findings section for additional information

**Testing Requested:**

<u>Analysis Code</u>	<u>Description</u>
1002B	Carbon Monoxide Exposure Biouptake Screen, Blood
8050U	Postmortem Toxicology - Urine Screen Add-on (6-MAM Quantification only)
8056B	Postmortem Toxicology - Basic, Blood - University of MI (CSA)

**Specimens Received:**

<u>ID</u>	<u>Tube/Container</u>	<u>Volume/ Mass</u>	<u>Collection Date/Time</u>	<u>Matrix Source</u>	<u>Miscellaneous Information</u>
001	Gray Top Tube	10.7 mL	09/13/2013	Iliac Blood	
002	Gray Top Tube	9 mL	09/13/2013	Iliac Blood	
003	Red Top Tube	2.3 mL	09/13/2013	Vitreous Fluid	
004	Green Vial	12.2 mL	09/13/2013	Urine	
005	White Plastic Container	41.09 g	09/13/2013	Liver Tissue	

All sample volumes/weights are approximations.

Specimens received on 09/16/2013.



Detailed Findings:

Analysis and Comments	Result	Units	Rpt. Limit	Specimen Source	Analysis By
Ethanol	184	mg/dL	10	001 - Iliac Blood	Headspace GC
Blood Alcohol Concentration (BAC)	0.184	g/100 mL	0.010	001 - Iliac Blood	Headspace GC
Amphetamine	75	ng/mL	5.0	001 - Iliac Blood	LC-MS/MS
Delta-9 THC	3.4	ng/mL	1.0	001 - Iliac Blood	GC-GC-GC/MS
Delta-9 Carboxy THC	< 5.0	ng/mL	5.0	001 - Iliac Blood	GC-GC-GC/MS
Ethanol	Confirmed	mg/dL	10	001 - Iliac Blood	Headspace GC
Carboxyhemoglobin	10	%Saturation	2	001 - Iliac Blood	GC/MS
Cannabinoids	Presump Pos	ng/mL	20	004 - Urine	EIA

This test is an unconfirmed screen. Confirmation by a more definitive technique such as GC/MS is recommended.

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:

1. Amphetamine - Iliac Blood:

Amphetamine (Adderall, Dexedrine) is a Schedule II phenethylamine CNS-stimulant. It is used therapeutically in the treatment of narcolepsy and obesity and also in the treatment of hyperactivity in children. Amphetamine has a high potential for abuse. When used in therapy, initial doses should be small and increased gradually. In the treatment of narcolepsy, amphetamine is administered in daily divided doses of 5 to 60 mg. For obesity and children with attention deficits, usual dosage is 5 or 10 mg daily.

Following a single oral dose of 10 mg amphetamine sulfate, a reported peak blood concentration of 40 ng/mL was reached at 2 hr. Following a single 30 mg dose to adults, an average peak plasma level of 100 ng/mL was reported at 2.5 hr. A steady-state blood level of 2000 - 3000 ng/mL was reported in an addict who consumed approximately 1000 mg daily.

Overdose with amphetamine can produce restlessness, hyperthermia, convulsions, hallucinations, respiratory and/or cardiac failure. Reported blood concentrations in amphetamine-related fatalities ranged from 500 - 41000 ng/mL (mean, 9000 ng/mL). Amphetamine is also a metabolite of methamphetamine, benzphetamine and selegiline.

2. Cannabinoids - Urine:

Cannabinoids are chemical compounds derived from the plant Cannabis sativa (marijuana), including active components, chemical congeners and metabolites. Delta-9-Tetrahydrocannabinol (THC) is the principal active component. This result derives from a presumptive test, which may be subject to cross-reactivity with non-cannabinoid compounds; therefore, a confirmatory test is recommended.

3. Carboxyhemoglobin (COHb) - Iliac Blood:

Hemoglobin is a protein found in red blood cells that is responsible for the oxygen carrying capacity of blood. In normal conditions, hemoglobin receives oxygen via blood circulation through the lungs and delivers the oxygen to tissues and organs throughout the body. In situations where the inspired air is high in carbon monoxide concentration, the hemoglobin then binds the carbon monoxide in place of oxygen. This leads to a functional deficiency in oxygen delivery to the organs and tissues of the body.

**Reference Comments:**

Measurement of carbon monoxide hemoglobin saturation gives an indication of the carbon monoxide concentration in the inspired air and its possible sequelae. Normal endogenous carboxyhemoglobin levels are generally up to 4% in non-smokers and up to 8% in smokers (although it may be higher); toxic symptoms may be noted at levels >10%. Concentrations over 10% saturation have been reported to produce adverse effects, e.g., headache and nausea. Deaths from carbon monoxide, in the absence of resuscitative measures, generally have associated carboxyhemoglobin levels >40%. However, individuals with a compromised cardiovascular system are at a potentially greater risk of toxic effects at much lower carbon monoxide hemoglobin saturation values.

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

Marijuana is a DEA Schedule I hallucinogen. Pharmacologically, it has depressant and reality distorting effects. Collectively, the chemical compounds that comprise marijuana are known as Cannabinoids.

Delta-9-THC is the principle psychoactive ingredient of marijuana/hashish. Delta-9-carboxy-THC (THCC) is the inactive metabolite of THC with peak concentrations attained 32 to 240 minutes after smoking and may be detected for up to one day or more in blood. Both delta-9-THC and THCC may be present substantially longer in chronic users. THCC is usually not detectable after passive inhalation.

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

Marijuana is a DEA Schedule I hallucinogen. Pharmacologically, it has depressant and reality distorting effects. Collectively, the chemical compounds that comprise marijuana are known as Cannabinoids.

Delta-9-THC is the principle psychoactive ingredient of marijuana/hashish. It rapidly leaves the blood, even during smoking, falling to below detectable levels within several hours. THC concentrations in blood are usually about one-half that of serum/plasma concentrations. The active metabolite, 11-hydroxy-THC, may also fall below detectable levels shortly after inhalation. Delta-9-carboxy-THC (THCC) is the inactive metabolite of THC with peak concentrations attained 32 to 240 minutes after smoking and may be detected for up to one day or more in blood. Both delta-9-THC and THCC may be present substantially longer in chronic users.

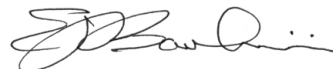
Reported usual peak THC concentrations in serum after smoking 1.75% or 3.55% THC marijuana cigarettes are 50 - 270 ng/mL after beginning of smoking, decreasing to less than 5 ng/mL by 2 hrs. Corresponding delta-9-carboxy-THC concentrations range from 10 - 101 ng/mL about 32 to 240 minutes after the beginning of smoking and decline slowly. Passive inhalation of marijuana smoke has been reported to produce blood THC concentrations up to 2 ng/mL. Delta-9-carboxy THC concentrations in blood may not be present following passive inhalation of marijuana smoke.

6. Ethanol (Ethyl Alcohol) - Iliac Blood:

Ethyl alcohol (ethanol, drinking alcohol) is a central nervous system depressant and can cause effects such as impaired judgment, reduced alertness and impaired muscular coordination. Ethanol can also be a product of decomposition or degradation of biological samples. The blood alcohol concentrations (BAC) can be expressed as a whole number with the units of mg/dL or as a decimal number with units of g/100 mL which is equivalent to % w/v. For example, a BAC of 85 mg/dL equals 0.085 g/100 mL or 0.085% w/v of ethanol.

Unless alternate arrangements are made by you, the remainder of the submitted specimens will be discarded two (2) years from the date of this report; and generated data will be discarded five (5) years from the date the analyses were performed.

Workorder 13224641 was electronically signed on 09/25/2013 14:52 by:



Edward J. Barbieri, Ph.D.  
Forensic Toxicologist

**Analysis Summary and Reporting Limits:**

Acode 1002B - Carbon Monoxide Exposure Biouptake Screen, Blood - Iliac Blood



**Analysis Summary and Reporting Limits:**

-Analysis by Spectrophotometry (SP) for:

<u>Compound</u>	<u>Rpt. Limit</u>	<u>Compound</u>	<u>Rpt. Limit</u>
Carboxyhemoglobin	5 %Saturation		

Acode 50010B - Amphetamines Confirmation, Blood (Forensic) - Iliac Blood

-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>
Amphetamine	5.0 ng/mL	Norpseudoephedrine	5.0 ng/mL
Ephedrine	5.0 ng/mL	Phendimetrazine	10 ng/mL
MDA	5.0 ng/mL	Phenmetrazine	5.0 ng/mL
MDEA	10 ng/mL	Phentermine	10 ng/mL
MDMA	5.0 ng/mL	Phenylpropanolamine	5.0 ng/mL
Methamphetamine	5.0 ng/mL	Pseudoephedrine	5.0 ng/mL
Methylephedrine	5.0 ng/mL	Selegiline	5.0 ng/mL

Acode 50013B - Cannabinoids Confirmation, Blood (Forensic) - Iliac Blood

-Analysis by Multi-dimensional Gas Chromatography/Mass Spectrometry (GC-GC-GC/MS) for:

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

Acode 52250B - Alcohols and Acetone Confirmation, Blood (Forensic) - Iliac Blood

-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

Acode 5654B - Carbon Monoxide Exposure Biouptake Confirmation, Blood - Iliac Blood

-Analysis by Gas Chromatography/Mass Spectrometry (GC/MS) for:

<u>Compound</u>	<u>Rpt. Limit</u>	<u>Compound</u>	<u>Rpt. Limit</u>
Carboxyhemoglobin	2 %Saturation		

Acode 8050U - Postmortem Toxicology - Urine Screen Add-on (6-MAM Quantification only)

-Analysis by Enzyme Immunoassay (EIA) for:

<u>Compound</u>	<u>Rpt. Limit</u>	<u>Compound</u>	<u>Rpt. Limit</u>
Amphetamines	1000 ng/mL	Methadone	300 ng/mL
Barbiturates	0.30 mcg/mL	Opiates	300 ng/mL
Benzodiazepines	50 ng/mL	Phencyclidine	25 ng/mL
Cannabinoids	20 ng/mL	Propoxyphene	300 ng/mL
Cocaine / Metabolites	300 ng/mL		

Acode 8056B - Postmortem Toxicology - Basic, Blood - University of MI (CSA) - Iliac Blood



**Analysis Summary and Reporting Limits:**

-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	25 ng/mL
Barbiturates	0.040 mcg/mL	Opiates	20 ng/mL
Benzodiazepines	100 ng/mL	Phencyclidine	10 ng/mL
Cannabinoids	10 ng/mL	Propoxyphene	50 ng/mL
Cocaine / Metabolites	20 ng/mL		

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

<u>Compound</u>	<u>Rpt. Limit</u>	<u>Compound</u>	<u>Rpt. Limit</u>
Buprenorphine / Metabolite	0.50 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