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CONFIDENTIAL

Demo Report

Report Issued 08/15/2022 08:57

To: **88888**
Forensic Example Report
Attn: Example Reports
200 Welsh Road
Horsham, PA 19044

Patient Name	8054B-POS
Patient ID	8054B-POS
Chain	21001811
DOB	Not Given
Sex	Not Given
Workorder	21001811

Positive Findings:

Analyte	Result	Units	Matrix Source
Ethanol	85	mg/dL	001 - Blood
Blood Alcohol Concentration (BAC)	0.085	g/100 mL	001 - Blood
Phenobarbital	5.0	mcg/mL	001 - Blood
Alprazolam	50	ng/mL	001 - Blood
Cocaine	50	ng/mL	001 - Blood
6-Monoacetylmorphine - Free	50	ng/mL	001 - Blood
Gabapentin	50	mcg/mL	001 - Blood
Delta-9 THC	5.0	ng/mL	001 - Blood
Doxylamine	200	ng/mL	001 - Blood
2-fluoro Deschloroketamine	Positive	ng/mL	001 - Blood
Deschloroketamine	Positive	ng/mL	001 - Blood
3-hydroxy-PCP	Positive	ng/mL	001 - Blood
3-MeO-PCP	Positive	ng/mL	001 - Blood
Eutylone	50	ng/mL	001 - Blood
alpha-PHP / alpha-PiHP	Positive	ng/mL	001 - Blood
Benzylone	Positive	ng/mL	001 - Blood
N-butyl Pentylone	Positive	ng/mL	001 - Blood
Fentanyl	10	ng/mL	001 - Blood
4-ANPP	10	ng/mL	001 - Blood
Flualprazolam	5.0	ng/mL	001 - Blood
Warfarin	50	mcg/mL	001 - Blood
ADMB-FUBINACA	Positive	ng/mL	001 - Blood
5-fluoro-PICA 3,3-dimethylbutanoic acid	Positive	ng/mL	001 - Blood
5-fluoro-PINACA 3-methylbutanoic acid	Positive	ng/mL	001 - Blood
4-fluoro-BINACA 3,3-dimethylbutanoic acid	Positive	ng/mL	001 - Blood
FUBINACA 3-methylbutanoic acid	Positive	ng/mL	001 - Blood
5-fluoro-PINACA 3,3-dimethylbutanoic acid	Positive	ng/mL	001 - Blood
FUBINACA 3,3-dimethylbutanoic acid	Positive	ng/mL	001 - Blood
APP-BINACA	Positive	ng/mL	001 - Blood
5-fluoro-MDMB-PICA / 5-fluoro-EMB-PICA	Positive	ng/mL	001 - Blood
MMB-FUBINACA	Positive	ng/mL	001 - Blood
5-fluoro-MDMB-PINACA / 5-fluoro-EMB-PINACA	Positive	ng/mL	001 - Blood
MDMB-4en-PINACA	Positive	ng/mL	001 - Blood
ADMB-CHMINACA	Positive	ng/mL	001 - Blood
4-fluoro-MDMB-BINACA	Positive	ng/mL	001 - Blood

See Detailed Findings section for additional information

Testing Requested:

Test	Test Name
8054B	Postmortem, Expanded with NPS, Blood (Forensic)

Specimens Received:

ID	Tube/Container	Volume/ Mass	Collection Date/Time	Matrix Source	Labeled As
001	Clear vial	Not Given	Not Given	Blood	Not Applicable

All sample volumes/weights are approximations.

Specimens received on 12/13/2021.

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
Phenobarbital	5.0	mcg/mL	0.50	001 - Blood	GC/MS
Alprazolam	50	ng/mL	5.0	001 - Blood	LC-MS/MS
Cocaine	50	ng/mL	20	001 - Blood	GC/MS
6-Monoacetylmorphine - Free	50	ng/mL	1.0	001 - Blood	LC-MS/MS
Gabapentin	50	mcg/mL	1.0	001 - Blood	LC-MS/MS
Delta-9 THC	5.0	ng/mL	0.50	001 - Blood	LC-MS/MS
Ethanol	Confirmed	mg/dL	10	001 - Blood	Headspace GC
Doxylamine	200	ng/mL	100	001 - Blood	GC
2-fluoro Deschloroketamine	Positive	ng/mL	5.0	001 - Blood	LC-MS/MS
Deschloroketamine	Positive	ng/mL	5.0	001 - Blood	LC-MS/MS
3-hydroxy-PCP	Positive	ng/mL	5.0	001 - Blood	LC-MS/MS
3-MeO-PCP	Positive	ng/mL	5.0	001 - Blood	LC-MS/MS
Eutylone	50	ng/mL	5.0	001 - Blood	LC-MS/MS
alpha-PHP / alpha-PiHP	Positive	ng/mL	5.0	001 - Blood	LC-MS/MS
Benzylone	Positive	ng/mL	5.0	001 - Blood	LC-MS/MS
N-butyl Pentylone	Positive	ng/mL	5.0	001 - Blood	LC-MS/MS
Fentanyl	10	ng/mL	0.10	001 - Blood	LC-MS/MS
4-ANPP	10	ng/mL	0.10	001 - Blood	LC-MS/MS
Flualprazolam	5.0	ng/mL	2.0	001 - Blood	LC-MS/MS
Warfarin	50	mcg/mL	0.20	001 - Blood	LC-MS/MS
ADMB-FUBINACA	Positive	ng/mL	1.0	001 - Blood	LC-MS/MS
5-fluoro-PICA 3,3-dimethylbutanoic acid	Positive	ng/mL	5.0	001 - Blood	LC-MS/MS
5-fluoro-PINACA 3-methylbutanoic acid	Positive	ng/mL	5.0	001 - Blood	LC-MS/MS

Detailed Findings:

Analysis and Comments	Result	Units	Rpt. Limit	Specimen Source	Analysis By
4-fluoro-BINACA 3,3-dimethylbutanoic acid	Positive	ng/mL	5.0	001 - Blood	LC-MS/MS
FUBINACA 3-methylbutanoic acid	Positive	ng/mL	5.0	001 - Blood	LC-MS/MS
5-fluoro-PINACA 3,3-dimethylbutanoic acid	Positive	ng/mL	5.0	001 - Blood	LC-MS/MS
FUBINACA 3,3-dimethylbutanoic acid	Positive	ng/mL	5.0	001 - Blood	LC-MS/MS
APP-BINACA	Positive	ng/mL	0.10	001 - Blood	LC-MS/MS
5-fluoro-MDMB-PICA / 5-fluoro-EMB-PICA	Positive	ng/mL	0.10	001 - Blood	LC-MS/MS
MMB-FUBINACA	Positive	ng/mL	0.10	001 - Blood	LC-MS/MS
5-fluoro-MDMB-PINACA / 5-fluoro-EMB-PINACA	Positive	ng/mL	0.20	001 - Blood	LC-MS/MS
MDMB-4en-PINACA	Positive	ng/mL	0.10	001 - Blood	LC-MS/MS
ADMB-CHMINACA	Positive	ng/mL	0.10	001 - Blood	LC-MS/MS
4-fluoro-MDMB-BINACA	Positive	ng/mL	0.10	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:

1. 2-fluoro Deschloroketamine - :

   2-fluoro Deschloroketamine is a novel psychoactive substance (NPS) that is structurally related to ketamine. 2-Fluoro Deschloroketamine exerts the same type of pharmacological effect on the body as ketamine, resulting in the same spectrum of dissociative and analgesic-like effects. These effects may include profound analgesia, normal or enhanced skeletal muscle tone, cardiovascular and respiratory stimulation, hallucinations, delirium, irrational behavior and/or dream-like states.
   In a case series of 19 individuals who presented to the emergency department due to intoxication and 2-fluoro Deschloroketamine was subsequently analytically confirmed in urine samples, clinical effects were predominantly neurological (impaired consciousness, agitation, abnormal behavior) and cardiovascular (hypertension, tachycardia) and 5 patients had loss of consciousness or convulsions; co-ingestion with other ketamine analogs was common. 2-fluoro Deschloroketamine has been confirmed in the blood taken during the course of 5 driving under the influence investigations.

2. 3-MeO-PCP (3-Methoxy-PCP; 3-Methoxyphencyclidine) - Blood:

   3-MeO-PCP is structurally similar to PCP (phencyclidine) and is among the first PCP alternatives to emerge on the novel psychoactive substances (NPS) market. It is used recreationally as a dissociative hallucinogen due to retaining the dissociative anesthetic effects of PCP but is also reported to have improved euphoric properties.
   Adverse effects reported in cases positive for 3-MeO-PCP include hyperpyrexia, high blood pressure, tachycardia, and neurological manifestations including confusion, hallucinations, hypertonia, and agitation.
   The presence of 4-MeO-PCP above 1000 ng/mL may affect the identification of 3-MeO-PCP. If additional testing is needed, please contact the laboratory.

3. 3-hydroxy-PCP (3-HO-PCP; 3-OH-PCP; 3-hydroxyphencyclidine) - Blood:

   3-hydroxy-PCP is structurally similar to PCP (phencyclidine) and is considered a PCP alternative that has emerged on the novel psychoactive substances (NPS) market. It is used recreationally as a dissociative hallucinogen due to retaining the dissociative anesthetic effects of PCP but is also reported to have improved euphoric properties.
   3-hydroxy-PCP and N-ethylhexedrone, were qualitatively confirmed in the serum and urine of a 56 y/o male who arrived at the ED with hyperthermia, hypertension, tachycardia, reduced consciousness, visual hallucinations, and vertical nystagmus, later developing rhabdomyolysis.

Reference Comments:

4. 4-ANPP (Despropionyl fentanyl) - Blood:

   4-ANPP (despropionylfentanyl) is a precursor chemical used in the production of fentanyl and is also a fentanyl metabolite. It may be used in the production of other related compounds such as acetyl fentanyl, butyryl fentanyl and furanyl fentanyl and may be a metabolite of these and other fentanyl-related compounds. It is considered to be pharmacologically weak.

5. 4-fluoro-BINACA 3,3-dimethylbutanoic acid (4-fluoro MDMB BINACA butanoic acid metabolite) - Blood:

   4-fluoro-BINACA 3,3-dimethylbutanoic acid is a known or presumed metabolite of the following synthetic cannabinoid(s): 4-fluoro-MDMB-BINACA.

   It may also be a metabolite of other synthetic cannabinoids with similar structures.

6. 5-fluoro-MDMB-PICA / 5-fluoro-EMB-PICA (5-fluoro-EMB-PICA) - Blood:

   5-fluoro-MDMB-PICA / 5-fluoro-EMB-PICA are synthetic cannabinoid drugs. The drug is typically sprayed on botanical material and smoked, although it can be ingested in liquid or powder form. It binds to and demonstrates functional activity at the same brain receptor as THC, the active component of marijuana.

   This test does not differentiate between these isomeric compounds.

7. 5-fluoro-MDMB-PINACA / 5-fluoro-EMB-PINACA (5-fluoro-ADB/5-fluoro-AEB) - Blood:

   5-fluoro-MDMB-PINACA and 5-fluoro-EMB-PINACA are synthetic cannabinoid drugs. These drugs are typically sprayed on botanical material and smoked, although they can be ingested in liquid or powder form. They bind to and demonstrates functional activity at the same brain receptor as THC, the active component of marijuana.

   This test does not differentiate between these isomeric compounds.

8. 5-fluoro-PICA 3,3-dimethylbutanoic acid (5-fluoro MDMB-PICA metabolite 7) - Blood:

   5-fluoro-PICA 3,3-dimethylbutanoic acid is a known or presumed metabolite of the following synthetic cannabinoid(s): 5-fluoro-MDMB-PICA.

   It may also be a metabolite of other synthetic cannabinoids with similar structures.

9. 5-fluoro-PINACA 3,3-dimethylbutanoic acid (5-fluoro-ADB metabolite) - Blood:

   5-fluoro-PINACA 3,3-dimethylbutanoic acid (5F-ADB 3,3-dimethylbutanoic acid) is a known or presumed metabolite of the following synthetic cannabinoid(s): 5-fluoro-MDMB-PINACA (5F-ADB); 5-fluoro-EDMB-PINACA.

   It may also be a metabolite of other synthetic cannabinoids with similar structures.

10. 5-fluoro-PINACA 3-methylbutanoic acid (5-fluoro AMB metabolite 7) - Blood:

    5-fluoro-PINACA 3-methylbutanoic acid (5F-AMB 3-methylbutanoic acid) is a known or presumed metabolite of the following synthetic cannabinoid(s): 5-fluoro-MMB-PINACA (5-fluoro AMB); 5-fluoro-EMB-PINACA (5F-AEB).

    It may also be a metabolite of other synthetic cannabinoids with similar structures.

11. 6-Monoacetylmorphine - Free (6-MAM; Heroin Metabolite) - Blood:

    6-monoacetylmorphine (6-MAM) is the 6-monoacetylated form of morphine, which is pharmacologically active. When present, it is generally indicative of heroin (diacetylmorphine) use. 6-MAM has also been reported to occur as an artifact in samples with unusually high blood morphine concentrations.

    A healthy man administered 12 mg heroin intravenously achieved peak blood concentrations at two minutes post injection of 150 ng/mL of 6-MAM and 44 ng/mL of morphine, which declined with half-lives of 7 minutes and 33 minutes, respectively.

    Eight subjects who died within fifteen minutes of heroin administration had postmortem blood 6-MAM concentrations averaging 19 ng/mL with a range from less than 1.0 to 82 ng/mL.

12. ADMB-CHMINACA (ADB-CHMINACA; MAB-CHMINACA) - Blood:

    ADMB-CHMINACA is one of many synthetic cannabinoid drugs. The drug is typically sprayed on botanical material and smoked, although it can be ingested in liquid or powder form. It binds to and demonstrates functional activity at the same brain receptor as THC, the active component of marijuana.

Reference Comments:

13. ADMB-FUBINACA (ADB-FUBINACA) - Blood:

    ADMB-FUBINACA is one of many synthetic cannabinoid drugs. The drug is typically sprayed on botanical material and smoked, although it can be ingested in liquid or powder form. It binds to and demonstrates functional activity at the same brain receptor as THC, the active component of marijuana.

14. APP-BINACA (APP-BUTINACA) - Blood:

    APP-BINACA is one of many synthetic cannabinoid drugs. The drug is typically sprayed on botanical material and smoked, although it can be ingested in liquid or powder form. It binds to and demonstrates functional activity at the same brain receptor as THC, the active component of marijuana.

15. Alprazolam (Xanax®) - Blood:

    Alprazolam is a DEA Schedule IV second-generation benzodiazepine, which is effective at very low doses. It shares the actions of other benzodiazepines in the management of anxiety disorders and short-term relief of anxiety associated with depressive symptoms. Alpha-hydroxyalprazolam is an active metabolite of alprazolam. Common CNS-depressant side effects of alprazolam include drowsiness and fatigue. For anxiety, daily doses of 0.8 to 4 mg are effective whereas for phobic and panic disorders, 6 to 9 mg daily is recommended.

    Reported therapeutic plasma concentrations of alprazolam are proportional to dose given: 3 mg/day produced steady-state levels of 30 ng/mL; 6 mg/day, 60 ng/mL; and 9 mg/day, 100 ng/mL.

    In reported cases involving driving under the influence, alprazolam concentrations ranged from 8 - 640 ng/mL. Alcohol greatly enhances the activity of benzodiazepines.

    Reported blood concentrations of alprazolam in alprazolam-related fatalities ranged from 100 - 400 ng/mL (mean, 200 ng/mL). In combination with other central nervous system depressants such as ethyl alcohol, alprazolam can become toxic at low concentrations.

16. Benzylone (3,4-Methylenedioxy-N-benzylcathinone; BMDP; N-benzyl methylone; N-benzyl-3,4-methylenedioxycathinone) - Blood:

    Benzylone is classified as a synthetic stimulant and belongs to the beta-keto-methylenedioxyamphetamine subclass, which includes synthetic stimulants methylone, butylone, ethylone, and N-ethylpentylone. This subclass of novel psychoactive substances (NPS) features compounds that are chemical hybrids of MDMA and cathinone. Novel stimulants have been reported to cause stimulant-like effects, similar to amphetamines.

17. Cocaine - Blood:

    Cocaine is a DEA Schedule II controlled central nervous stimulant drug. Effects following cocaine use can include euphoria, excitement, restlessness, risk taking, sleep disturbance, and aggression. A period of mental and physical fatigue and somnolence follow the use of cocaine after the excitant-stimulant effects wear off. Cocaine is metabolized to the inactive compounds benzoylecgonine, ecgonine methyl ester, and ecgonine. Benzoylecgonine and ecgonine methyl ester can form from cocaine breakdown after death and even after sample collection. The average blood cocaine concentration in 906 impaired drivers was 87 ng/mL (range 5 - 2390 ng/mL). Blood cocaine concentrations in patients admitted to an emergency room for cocaine related medical complaints were 260 ng/mL (SD = 500 ng/mL). Cocaine concentrations in plasma following oral administration of 2 g/day over 6 days, averaged 1260 ng/mL. The average blood cocaine concentration in 37 cocaine related fatalities was 4600 ng/mL (range 40 - 31000 ng/mL).

18. Delta-9 THC (Active Ingredient of Marijuana) - 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. Delta-9-carboxy-THC (THCC) is the inactive metabolite of THC 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.
    THC concentrations in blood are usually about one-half of serum/plasma concentrations. Usual peak levels in serum for 1.75% or 3.55% THC marijuana cigarettes: 50 - 270 ng/mL at 6 to 9 minutes after beginning smoking, decreasing to less than 5 ng/mL by 2 hrs.

Reference Comments:

19. Deschloroketamine - :

    Deschloroketamine is a novel psychoactive substance (NPS) that is structurally related to ketamine. Deschloroketamine exerts the same type of pharmacological effect on the body as ketamine, resulting in the same spectrum of dissociative and analgesic-like effects. These effects may include profound analgesia, normal or enhanced skeletal muscle tone, cardiovascular and respiratory stimulation, hallucinations, delirium, irrational behavior and/or dream-like states.

20. Doxylamine (Unisom®) - Blood:

    Doxylamine is an antihistamine with sedative effects. It is sometimes used in the short-term relief of insomnia. It is also found as a constituent of cold preparations. The usual antihistamine dosage is 12.5 mg every 4 to 6 hrs.

    Following an oral 25 mg dose of doxylamine, reported peak plasma concentrations averaged 99 ng/mL (range, 69 - 140 ng/mL). At therapeutic concentrations, the elimination half-life is approximately 10 hours.

    In overdosage, doxylamine can produce sedation, respiratory depression and coma. Fatal blood doxylamine concentrations between 700 - 12000 ng/mL (mean, 6500 ng/mL) have been reported. However, more recently, cases of fatalities have been published with postmortem doxylamine concentrations of 22000 ng/mL and above.

21. Ethanol (Ethyl Alcohol) - 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.

22. Eutylone (N-ethylbutylone; beta-keto-Ethylbenzodioxolylbutanamine; bk-EBDB) - Blood:

    Eutylone is classified as a synthetic stimulant and belongs to the beta-keto-methylenedioxyamphetamine subclass, which includes synthetic stimulants methylone, butylone, ethylone, and N-ethylpentylone. This subclass of novel psychoactive substances (NPS) features compounds that are chemical hybrids of MDMA and cathinone. Novel stimulants have been reported to cause stimulant-like effects, similar to amphetamines. The average concentration of eutylone in reported postmortem blood samples (n=67) was 1,020 +/- 2,242 ng/mL (median: 110 ng/mL, range: 1.2-11,000 ng/mL). The average concentration of eutylone in blood from DUID cases (n=7) was 942 +/- 1,407 ng/mL (median: 140 ng/mL, range: 17-3,600 ng/mL).

23. FUBINACA 3,3-dimethylbutanoic acid (MDMB-FUBINACA metabolite 1) - Blood:

    FUBINACA 3,3-dimethylbutanoic acid (MDMB-FUBINACA 3,3-dimethylbutanoic acid) is a known or presumed metabolite of the following synthetic cannabinoid(s): MDMB-FUBINACA; ADMB-FUBINACA (ADB-FUBINACA).

    It may also be a metabolite of other synthetic cannabinoids with similar structures.

24. FUBINACA 3-methylbutanoic acid (AB-FUBINACA metabolite 3) - Blood:

    FUBINACA 3-methylbutanoic acid (FUB-AMB 3-methylbutanoic acid) is a known or presumed metabolite of the following synthetic cannabinoid(s): AMB-FUBINACA (AB-FUBINACA); MMB-FUBINACA (FUB-AMB); EMB-FUBINACA.

    It may also be a metabolite of other synthetic cannabinoids with similar structures.

25. Fentanyl (Duragesic®; Sublimaze®) - Blood:

    Fentanyl is a DEA Schedule II synthetic morphine substitute anesthetic/analgesic. It is reported to be 80 to 200 times as potent as morphine and has a rapid onset of action as well as addictive properties.

    It is reported that patients lost consciousness at mean plasma levels of fentanyl of 34 ng/mL when infused with 75 mcg/Kg over a 15 min period; peak plasma levels averaged 50 ng/mL.

    After application of a fentanyl transdermal preparation (patch), serum fentanyl concentrations are reported to be in the following ranges within 24 hours:
    25 mcg/hour patch: 0.3 - 1.2 ng/mL
    50 mcg/hour patch: 0.6 - 1.8 ng/mL
    75 mcg/hour patch: 1.1 - 2.6 ng/mL
    100 mcg/hour patch: 1.9 - 3.8 ng/mL

Reference Comments:

Following removal of the patch, serum fentanyl concentrations are reported to decrease with a mean elimination half-life of 17 hours (range, 13 to 22 hours).

The mean peak plasma serum fentanyl concentration in adults given an 800 mcg oral transmucosal fentanyl preparation over 15 minutes is reported at 2.1 ng/mL (range, 1.4 - 3.0 ng/mL) at approximately 0.4 hours.

Signs associated with fentanyl toxicity include severe respiratory depression, seizures, hypotension, coma and death. In fatalities from fentanyl, blood concentrations are variable and have been reported as low as 3 ng/mL.

26. Flualprazolam - Blood:

Flualprazolam is a benzodiazepine that is used as a novel psychoactive substance. It is reported to have CNS depressant properties and shares anticonvulsant, muscle relaxant, hypnotic, anxiolytic and sedative effects with other benzodiazepines. It is not marketed for use as a pharmaceutical product in any country.
Flualprazolam has been reported in both drug impaired driving and death investigation casework.
Flualprazolam has been confirmed in 22 blood samples collected from DUID investigations; the blood concentrations ranged from 4.4-68 ng/mL. A blood concentration of 13 ng/mL was the only finding in a case of a motor vehicle crash. For postmortem cases (n=167), flualprazolam blood mean and median concentrations were reported as 20 +/- 63 and 8.2 ng/mL, (2.0- 620 ng/mL). Flualprazolam was also confirmed in another postmortem case series (n=33); the median flualprazolam blood concentration was reported as 18 ng/mL (3.1-71 ng/mL).

27. Gabapentin (Neurontin®) - Blood:

Gabapentin is an antiepileptic/anticonvulsant drug used in adults and children. Gabapentin is marketed in capsules (100, 200 and 300 mg), tablets (600 and 800 mg) and an oral solution (250 mg/5 mL). The common daily oral dose range for adults is from 900 to 1800 mg per day in divided doses; pediatric doses (3 to 12 years of age) are dependent of the child's body weight and range from 10 to 15 mg/kg per day.

Mean steady-state plasma levels (+/- SD) following daily regimens of:
900 mg/day = 1.88 (+/- 0.70) mcg/mL
1200 mg/day= 2.62 (+/- 0.86) mcg/mL
Reported threshold for seizure control: Greater than 2 mcg/mL.

The drug is also used to treat postherpetic neuralgia in adults. The common adult dosage for this indication is 1800 mg per day in divided doses following lower doses during initial treatment.

The most common adverse effects of gabapentin are related to the central nervous system and include sedation, dizziness, nystagmus, ataxia and fatigue. All of these adverse effects are reversible and subside with reduction of dosage or discontinuation of therapy with the drug.

28. MDMB-4en-PINACA - Blood:

MDMB-4en-PINACA is one of many synthetic cannabinoid drugs. The drug is typically sprayed on botanical material and smoked, although it can be ingested in liquid or powder form. It binds to and demonstrates functional activity at the same brain receptor as THC, the active component of marijuana.

29. MMB-FUBINACA (AMB-FUBINACA, FUB-AMB) - Blood:

MMB-FUBINACA is one of many synthetic cannabinoid drugs. The drug is typically sprayed on botanical material and smoked, although it can be ingested in liquid or powder form. It binds to and demonstrates functional activity at the same brain receptor as THC, the active component of marijuana.

30. N-butyl Pentylone (N-butylpentylone; bk-BBDP; bk-Butyl-K) - Blood:

N-butyl Pentylone is classified as a synthetic stimulant and belongs to the beta-keto-methylenedioxyamphetamine subclass, which includes synthetic stimulants methylone, butylone, ethylone, and N-ethylpentylone. This subclass of novel psychoactive substances (NPS) features compounds that are chemical hybrids of MDMA and cathinone. Novel stimulants have been reported to cause stimulant-like effects, similar to amphetamines.

Reference Comments:

31. Phenobarbital (Luminal®) - Blood:

    Phenobarbital is a DEA Schedule IV barbiturate derivative with a long duration of action. It is primarily used as therapy in the control of seizures due to its CNS-depressant activity. It may be encountered as a parent compound or as the metabolite of primidone. At excessively high levels, drowsiness, slurring of speech, ataxia, respiratory depression and coma may be manifested. The recommended therapeutic range for effective anticonvulsant therapy is 10 - 30 mcg/mL.

    Reported blood levels of phenobarbital in fatalities associated with use of this compound range from 64 - 116 mcg/mL.

    Concomitant use of phenobarbital with other CNS-depressant agents, e.g., ethyl alcohol, would produce at least additive CNS-depressant effects.

32. Warfarin (Coumadin®) - Blood:

    Warfarin is an anticoagulant used in the prophylaxis and treatment of venous thrombosis, pulmonary and other emboli and in the treatment of coronary occlusion. It is also used as a rodenticide. The usual initial adult dose is 2 to 5 mg daily and may be increased to 10 mg to maintain the prothrombin time International Normalized Ratio (INR) within the target range. Warfarin can induce fatal internal bleeding and has a narrow therapeutic index.

    Peak plasma concentrations following single 10 mg doses averaged 0.6 mcg/mL for both R-warfarin and S-warfarin (combined concentration 1.2 mcg/mL). The blood to plasma ratio is approximately 0.5. This test is not chiral specific and does not distinguish between the R and S enantiomers of warfarin.

33. alpha-PHP / alpha-PiHP (PV-7; a-PHP; a-PiHP; alpha-Pyrrolidinohexanophenone; alpha-Pyrrolidinohexiophenone; alpha-Pyrrolidinoisohexanophenone) - Blood:

    Alpha-PHP and alpha-PiHP (alpha-Pyrrolidinohexiophenone, alpha-Pyrrolidinohexanophenone, alpha-Pyrrolidinoisohexanophenone) are psychoactive stimulants of the pyrrolidinophenone series that are structurally related to alpha-PVP. These compounds have been sold as novel psychoactive substances (NPS) for their stimulating and empathogenic effects and are used as alternatives to amphetamine, MDMA, and/or cocaine.
    A 27 y/o male self-reported to a psychiatric hospital for a drug abuse evaluation for recent abuse of cathinones, and he presented with adverse effects including bone and muscular pains, agitation, aggression and visual hallucinations. After three days, the patient was discovered deceased and an autopsy revealed cerebral and pulmonary edema, visceral congestion, and left ventricular hypertrophy; alpha-PHP was confirmed in his blood. Alpha-PiHP was detected in the blood, liver, kidney and brain tissue from an 18 y/o male with a known history of abusing NPS who was found deceased; it was determined that he died from acute circulatory and respiratory failure caused by alpha-PiHP intoxication.
    Alpha-PHP and its isomer alpha-PiHP are not differentiated. If additional testing is needed, please contact the laboratory.

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.

Test 50011B - Barbiturates Confirmation, Blood - Blood

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

Analyte	Rpt. Limit	Analyte	Rpt. Limit
Butalbital	0.20 mcg/mL	Phenobarbital	0.50 mcg/mL
Pentobarbital	0.20 mcg/mL	Secobarbital	0.20 mcg/mL

Test 50012B - Benzodiazepines Confirmation, Blood - Blood

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

Analysis Summary and Reporting Limits:

Analyte	Rpt. Limit	Analyte	Rpt. Limit
7-Amino Clonazepam	5.0 ng/mL	Flurazepam	2.0 ng/mL
Alpha-Hydroxyalprazolam	5.0 ng/mL	Hydroxyethylflurazepam	5.0 ng/mL
Alprazolam	5.0 ng/mL	Hydroxytriazolam	5.0 ng/mL
Chlordiazepoxide	20 ng/mL	Lorazepam	5.0 ng/mL
Clobazam	20 ng/mL	Midazolam	5.0 ng/mL
Clonazepam	2.0 ng/mL	Nordiazepam	20 ng/mL
Desalkylflurazepam	5.0 ng/mL	Oxazepam	20 ng/mL
Diazepam	20 ng/mL	Temazepam	20 ng/mL
Estazolam	5.0 ng/mL	Triazolam	2.0 ng/mL

Test 50014B - Cocaine and Metabolites Confirmation, Blood - Blood

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

Analyte	Rpt. Limit	Analyte	Rpt. Limit
Benzoylecgonine	50 ng/mL	Cocaine	20 ng/mL
Cocaethylene	20 ng/mL		

Test 50016B - Opiates - Free (Unconjugated) Confirmation, Blood - Blood

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

Analyte	Rpt. Limit	Analyte	Rpt. Limit
6-Monoacetylmorphine - Free	1.0 ng/mL	Hydromorphone - Free	1.0 ng/mL
Codeine - Free	5.0 ng/mL	Morphine - Free	5.0 ng/mL
Dihydrocodeine / Hydrocodol - Free	5.0 ng/mL	Oxycodone - Free	5.0 ng/mL
Hydrocodone - Free	5.0 ng/mL	Oxymorphone - Free	1.0 ng/mL

Test 52144B - Gabapentin Confirmation, Blood - Blood

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

Analyte	Rpt. Limit	Analyte	Rpt. Limit
Gabapentin	1.0 mcg/mL		

Test 52198B - Cannabinoids Confirmation, Blood - Blood

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

Analyte	Rpt. Limit	Analyte	Rpt. Limit
11-Hydroxy Delta-9 THC	1.0 ng/mL	Delta-9 THC	0.50 ng/mL
Delta-9 Carboxy THC	5.0 ng/mL		

Test 52250B - Alcohols and Acetone Confirmation, Blood - Blood

-Analysis by Headspace Gas Chromatography (GC) for:

Analyte	Rpt. Limit	Analyte	Rpt. Limit
Acetone	5.0 mg/dL	Isopropanol	5.0 mg/dL
Ethanol	10 mg/dL	Methanol	5.0 mg/dL

Test 52285B - Doxylamine Confirmation, Blood - Blood

Analysis Summary and Reporting Limits:

-Analysis by Gas Chromatography (GC) for:

Analyte	Rpt. Limit	Analyte	Rpt. Limit
Doxylamine	100 ng/mL		

Test 52306B - 3-MeO-PCP and 3-hydroxy-PCP Confirmation (Qualitative), Blood - Blood

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

Analyte	Rpt. Limit	Analyte	Rpt. Limit
3-MeO-PCP	5.0 ng/mL	3-hydroxy-PCP	5.0 ng/mL

Test 52307B - Eutylone Confirmation, Blood - Blood

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

Analyte	Rpt. Limit	Analyte	Rpt. Limit
Eutylone	5.0 ng/mL		

Test 52308B - NPS Stimulants Confirmation (Qualitative), Blood - Blood

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

Analyte	Rpt. Limit	Analyte	Rpt. Limit
Benzylone	5.0 ng/mL	alpha-PHP / alpha-PiHP	5.0 ng/mL
N-butyl Pentylone	5.0 ng/mL		

Test 52486B - Fentanyl and 4-ANPP Confirmation, Blood - Blood

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

Analyte	Rpt. Limit	Analyte	Rpt. Limit
4-ANPP	0.10 ng/mL	Fentanyl	0.10 ng/mL
Acetyl Fentanyl	0.10 ng/mL	Norfentanyl	0.20 ng/mL

Test 52502B - Designer Benzodiazepines Confirmation 1, Blood - Blood

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

Analyte	Rpt. Limit	Analyte	Rpt. Limit
Alpha-Hydroxyetizolam	2.0 ng/mL	Etizolam	2.0 ng/mL
Bromazepam	5.0 ng/mL	Flualprazolam	2.0 ng/mL
Clonazolam	5.0 ng/mL	Flubromazepam	20 ng/mL
Delorazepam	5.0 ng/mL	Flubromazolam	2.0 ng/mL
Diclazepam	5.0 ng/mL	Phenazepam	20 ng/mL

Test 52505B - Warfarin Confirmation, Blood - Blood

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

Analyte	Rpt. Limit	Analyte	Rpt. Limit
Warfarin	0.20 mcg/mL		

Test 5970B - Synthetic Cannabinoids Confirmation (Qualitative), Blood - Blood

Analysis Summary and Reporting Limits:

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

Analyte	Rpt. Limit	Analyte	Rpt. Limit
4-fluoro-BINACA 3,3-dimethylbutanoic acid	5.0 ng/mL	ADMB-CHMINACA	0.10 ng/mL
4-fluoro-MDMB-BINACA	0.10 ng/mL	ADMB-FUBINACA	1.0 ng/mL
5-fluoro-MDMB-PICA / 5-fluoro-EMB-PICA	0.10 ng/mL	APP-BINACA	0.10 ng/mL
5-fluoro-MDMB-PINACA / 5-fluoro-EMB-PINACA	0.20 ng/mL	FUBINACA 3,3-dimethylbutanoic acid	5.0 ng/mL
5-fluoro-PICA 3,3-dimethylbutanoic acid	5.0 ng/mL	FUBINACA 3-methylbutanoic acid	5.0 ng/mL
5-fluoro-PINACA 3,3-dimethylbutanoic acid	5.0 ng/mL	MDMB-4en-PINACA	0.10 ng/mL
5-fluoro-PINACA 3-methylbutanoic acid	5.0 ng/mL	MMB-FUBINACA	0.10 ng/mL

Test 8054B - Postmortem, Expanded with NPS, Blood (Forensic) - Blood

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

Analyte	Rpt. Limit	Analyte	Rpt. Limit
Barbiturates	0.040 mcg/mL	Gabapentin	5.0 mcg/mL
Cannabinoids	10 ng/mL	Salicylates	120 mcg/mL

-Analysis by Headspace Gas Chromatography (GC) for:

Analyte	Rpt. Limit	Analyte	Rpt. Limit
Acetone	5.0 mg/dL	Isopropanol	5.0 mg/dL
Ethanol	10 mg/dL	Methanol	10 mg/dL

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

Analyte	Rpt. Limit	Analyte	Rpt. Limit
4-fluoro-BINACA 3,3-dimethylbutanoic acid	5.0 ng/mL	ADMB-CHMINACA	0.10 ng/mL
4-fluoro-MDMB-BINACA	0.10 ng/mL	ADMB-FUBINACA	1.0 ng/mL
5-fluoro-MDMB-PICA / 5-fluoro-EMB-PICA	0.10 ng/mL	APP-BINACA	0.10 ng/mL
5-fluoro-MDMB-PINACA / 5-fluoro-EMB-PINACA	0.20 ng/mL	FUBINACA 3,3-dimethylbutanoic acid	5.0 ng/mL
5-fluoro-PICA 3,3-dimethylbutanoic acid	5.0 ng/mL	FUBINACA 3-methylbutanoic acid	5.0 ng/mL
5-fluoro-PINACA 3,3-dimethylbutanoic acid	5.0 ng/mL	MDMB-4en-PINACA	0.10 ng/mL
5-fluoro-PINACA 3-methylbutanoic acid	5.0 ng/mL	MMB-FUBINACA	0.10 ng/mL

-Analysis by High Performance Liquid Chromatography/Time of Flight-Mass Spectrometry (LC/TOF-MS) for: The following is a general list of analyte classes included in this screen. The detection of any specific analyte is concentration-dependent. Note, not all known analytes in each specified analyte class are included. Some specific analytes outside of these classes are also included. For a detailed list of all analytes and reporting limits, please contact NMS Labs. Amphetamines, Anticonvulsants, Antidepressants, Antihistamines, Antipsychotics, Benzodiazepines, CNS Stimulants, Cocaine and Metabolites, Hallucinogens, Hypnosedatives, Muscle Relaxants, Non-Steroidal Anti-Inflammatory Agents, Opiates and Opioids.