Effective Date:

Monday, September 10, 2012

New Tests and Test Updates

In our continuing effort to provide you with the highest quality toxicology laboratory services available, we have compiled important changes regarding a number of tests we perform. Listed below are the types of changes that may be included in this notification, effective Monday, September 10, 2012

New Tests - Tests recently added to the NMS Labs test menu. *New Tests are effective immediately.*

Test Changes - Tests that have had changes to the method/ CPT code, units of measurement, scope of analysis, reference comments, or specimen requirements.

Discontinued Tests - Tests being discontinued with alternate testing suggestions.

Please use this information to update your computer systems/records. These changes are important to ensure standardization of our mutual laboratory databases.

If you have any questions about the information contained in this notification, please call our Client Support Department at (866) 522-2206. Thank you for your continued support of NMS Labs and your assistance in implementing these changes.

The CPT Codes provided in this document are based on AMA guidelines and are for informational purposes only. NMS Labs does not assume responsibility for billing errors due to reliance on the CPT Codes listed in this document.

NMS LABS
3701 Welsh Road
Willow Grove, PA 19090
www.NMSLabs.com

New Tests and Test Updates

Test Code	Test Name	New Test	Test Name	Method / CPT Code	Specimen Req.	Stability	Scope	Units	Reference Comments	Discontinue
3153U	Cotinine Screen, Urine									•
1777B	Dipyridamole, Blood				•					
1777SP	Dipyridamole, Serum/Plasma				•					
1777U	Dipyridamole, Urine				•					
2088B	Flecainide, Blood				•					
2088SP	Flecainide, Serum/Plasma				•					
2088U	Flecainide, Urine				•					
2541FL	LSD Screen, Fluid									•
6926H	LSD Screen, Hair (Forensic)									•
2541TI	LSD Screen, Tissue									•
3092SP	Moricizine, Serum/Plasma				•					
3092U	Moricizine, Urine				•					
8041B	Postmortem Toxicology - Basic with Vitreous Alcohol Confirmation, Blood (Forensic)	•								
8042B	Postmortem Toxicology - Expanded with Vitreous Alcohol Confirmation, Blood (Forensic)	•								
8043B	Postmortem Toxicology - Expert with Vitreous Alcohol Confirmation, Blood (Forensic)	•								
3795U	Pregabalin, Urine				•					
3976B	Propafenone, Blood				•					
3976FL	Propafenone, Fluid				•					
3976SP	Propafenone, Serum/Plasma				•					
4155B	Sativex®, Blood	•								
4155SP	Sativex®, Serum/Plasma	•								
4281U	Synthetic Cannabinoid Metabolites (Qualitative) - Expanded, Urine									•
9567OF	Synthetic Cannabinoids (Qualitative) Screen, Oral Fluid	•								
8106B	Therapeutic and Abused Drugs with CO Screen, Blood (Forensic)									•

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New Tests and Test Updates

New Tests

8041B Postmortem Toxicology - Basic with Vitreous Alcohol Confirmation, Blood (Forensic) — **Effective Immediately**

Scope of Analysis:	Acetone [Headspace GC], Amphetamines [ELISA], Barbiturates [ELISA], Benzodiazepines [ELISA], Blood Alcohol Concentration (BAC) [Headspace GC], Buprenorphine / Metabolite [ELISA], Cannabinoids [ELISA], Cocaine / Metabolites [ELISA], Ethanol [Headspace GC], Isopropanol [Headspace GC], Methadone [ELISA], Methanol [Headspace GC], Opiates [ELISA], Phencyclidine [ELISA], Propoxyphene [ELISA]
Method(s):	Enzyme-Linked Immunosorbent Assay (ELISA) Headspace Gas Chromatography (GC)
Purpose:	Forensic Analysis; Exclusion Screen
Category:	Hypnotic, Sedative, Stimulant, Stimulant, Anorexogenic, Anxiolytic, Sedative, Analgesic, Hypnotic, Sedative, Volatile, Narcotic Analgesic, Environmental/Occupation Toxin, Hallucinogen
Specimen Requirements:	7 mL Blood
Minimum Volume:	3.45 mL
Special Handling:	In addition to blood, collect 1 mL of Vitreous fluid for the Alcohol Confirmation. Collect sample using alcohol free skin preparation.
Specimen Container:	Gray top tube (Sodium Fluoride / Potassium Oxalate), Lavender top tube (EDTA)
Transport Temperature:	Refrigerated
Light Protection:	Not Required
Rejection Criteria:	None
Stability:	Room Temperature: Undetermined Refrigerated: Undetermined Frozen (-20 °C): Undetermined

Method: Enzyme-Linked Immunosorbent Assay (ELISA)

Set-Up Days / TAT: Monday-Friday 2nd Shift 1 day (after set-up)
CPT Code: 80101x9

Compound Name / Alias	Units	RL	Reference Comment
Opiates	ng/mL	20	
Cocaine / Metabolites	ng/mL	20	
Benzodiazepines	ng/mL	100	
Cannabinoids	ng/mL	10	
Amphetamines	ng/mL	20	
Barbiturates	mcg/mL	0.04	
Methadone	ng/mL	25	
Phencyclidine Angel Dust; PCP; Sherm	ng/mL	10	
Propoxyphene	ng/mL	50	

Method: Headspace Gas Chromatography (GC)

Set-Up Days / TAT: Monday-Friday 4 days (after set-up)
CPT Code: 82055

Compound Name / Alias	Units	RL	Reference Comment
Ethanol Ethyl Alcohol	mg/dL	10	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.

New Tests and Test Updates

New Tests

Compound Name / Alias	Units	RL	Reference Comment
Blood Alcohol Concentration (BAC)	g/100 mL	0.01	
Methanol Methyl Alcohol	mg/dL	5.0	Endogenous blood levels of methanol from metabolic and dietary sources are approximately 0.15 mg/dL. Exposure to 800 ppm methanol for 8 hours produced a maximum average blood methanol concentration of 3.1 mg/dL.
Isopropanol Isopropyl Alcohol]	mg/dL	5.0	Three workers exposed to 191 - 200 ppm isopropanol in air had blood isopropanol concentrations <1 mg/dL; acetone levels were 4 - 16 mg/dL during the exposure. After a sponge bath with isopropanol, one adult had a blood isopropanol concentration of 10 mg/dL. In a study of 31 isopropanol deaths, postmortem blood concentrations ranged from 10 to 250 mg/dL (mean, 140 mg/dL) and acetone blood concentrations ranged from 40 - 300 mg/dL (mean, 170 mg/dL).
Acetone	mg/dL	5.0	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.

Method: Enzyme-Linked Immunosorbent Assay (ELISA)

Set-Up Days / TAT: Monday Wednesday Friday 2nd Shift 1 day (after set-up)

CPT Code: 80101

Compound Name / Alias	Units	RL	Reference Comment
Buprenorphine / Metabolite Buprenex®; Suboxone®; Subutex®; Temgesic®	ng/mL	0.5	When a single 0.4 mg sublingual dose was administered 3 hours after a 0.3 mg intramuscular dose, the plasma levels following the sublingual dose were: 0.45 - 0.84 ng/mL at 2 hours 0.36 - 0.58 ng/mL at 6.5 hours 0.25 - 0.36 ng/mL at 10 hours

8042B **Postmortem Toxicology - Expanded with Vitreous Alcohol Confirmation, Blood (Forensic)** **Effective Immediately**

Scope of Analysis: 10-Hydroxycarbazepine [GC/MS], 7-Amino Flunitrazepam [GC/MS], Acetaminophen [GC/MS], Acetone [Headspace GC], Alfentanil [GC/MS], Amitriptyline [GC/MS], Amobarbital [GC/MS], Amoxapine [GC/MS], Amphetamine [GC/MS], Atomoxetine [GC/MS], Atropine [GC/MS], Benzodiazepines [ELISA], Benztropine [GC/MS], Blood Alcohol Concentration (BAC) [Headspace GC], Brompheniramine [GC/MS], Bupivacaine [GC/MS], Buprenorphine / Metabolite [ELISA], Bupropion Metabolite [GC/MS], Bupropion [GC/MS], Buspirone [GC/MS], Butabarbital [GC/MS], Butalbital [GC/MS], Butorphanol [GC/MS], Caffeine [GC/MS], Cannabinoids [ELISA], Carbamazepine [GC/MS], Carbinoxamine [GC/MS], Carbromal [GC/MS], Carisoprodol [GC/MS], Cathine / Phenylpropanolamine [GC/MS], Cetirizine [GC/MS], Chlorpheniramine [GC/MS], Chlorpromazine [GC/MS], Chlorpropamide [GC/MS], Citalopram / Escitalopram [GC/MS], Clomipramine [GC/MS], Clozapine [GC/MS], Cocaine / Metabolites [ELISA], Cotinine [GC/MS], Cyclizine [GC/MS], Cyclobenzaprine [GC/MS], Desipramine [GC/MS], Desmethylclomipramine [GC/MS], Desmethyldoxepin [GC/MS], Dicyclomine [GC/MS], Diltiazem [GC/MS], Diphenhydramine [GC/MS], Diphenoxylate [GC/MS], Donepezil [GC/MS], Doxepin [GC/MS], Doxylamine [GC/MS], Duloxetine [GC/MS], EDDP [GC/MS], Ephedrine / Pseudoephedrine [GC/MS], Ethanol [Headspace GC], Ethosuximide [GC/MS], Ethotoin [GC/MS], Ethylmorphine [GC/MS], Etomidate [GC/MS], Fentanyl [GC/MS], Flunitrazepam [GC/MS], Fluoxetine [GC/MS], Fluvoxamine [GC/MS], Guaifenesin [GC/MS], Haloperidol [GC/MS], Hydroxybupropion [GC/MS], Hydroxychloroquine [GC/MS], Hydroxyzine [GC/MS], Ibuprofen [GC/MS], Imipramine [GC/MS], Isopropanol [Headspace GC], Ketamine [GC/MS], Lamotrigine

New Tests and Test Updates

New Tests

[GC/MS], Levetiracetam [GC/MS], Lidocaine [GC/MS], MDA [GC/MS], MDEA [GC/MS], MDMA [GC/MS], Maprotiline [GC/MS], Meclizine [GC/MS], Mefloquine [GC/MS], Meperidine [GC/MS], Mephenytoin [GC/MS], Mephobarbital [GC/MS], Mepivacaine [GC/MS], Meprobamate [GC/MS], Mesoridazine [GC/MS], Methadone [GC/MS], Methamphetamine [GC/MS], Methanol [Headspace GC], Methapyrilene [GC/MS], Methaqualone [GC/MS], Methcathinone [GC/MS], Methocarbamol [GC/MS], Methorphan [GC/MS], Methylephedrine [GC/MS], Methylphenidate [GC/MS], Metoclopramide [GC/MS], Metoprolol [GC/MS], Mirtazapine [GC/MS], Monoethylglycinexylidide (MEGX) [GC/MS], N-Acetylprocainamide [GC/MS], Naproxen [GC/MS], Nicotine [GC/MS], Nifedipine [GC/MS], Norclozapine [GC/MS], Norfentanyl [GC/MS], Norfluoxetine [GC/MS], Norketamine [GC/MS], Normeperidine [GC/MS], Normethsuximide [GC/MS], Norpropoxypheneamide [GC/MS], Nortriptyline [GC/MS], O-Desmethylvenlafaxine [GC/MS], Olanzapine [GC/MS], Opiates [ELISA], Orphenadrine [GC/MS], Other Findings [GC/MS], Papaverine [GC/MS], Paroxetine [GC/MS], Pentazocine [GC/MS], Pentobarbital [GC/MS], Phenacetin [GC/MS], Phencyclidine [GC/MS], Phendimetrazine [GC/MS], Pheniramine [GC/MS], Phenmetrazine [GC/MS], Phenobarbital [GC/MS], Phensuximide [GC/MS], Phentermine [GC/MS], Phenytoin [GC/MS], Primidone [GC/MS], Procainamide [GC/MS], Prochlorperazine [GC/MS], Promazine [GC/MS], Promethazine [GC/MS], Propoxyphene [GC/MS], Quetiapine [GC/MS], Quinidine [GC/MS], Quinine [GC/MS], Salicylates [ELISA], Secobarbital [GC/MS], Selegiline [GC/MS], Sertraline [GC/MS], Strychnine [GC/MS], Sufentanil [GC/MS], Theobromine [GC/MS], Theophylline [GC/MS], Thiopental [GC/MS], Thioridazine [GC/MS], Thiothixene [GC/MS], Ticlopidine [GC/MS], Tiletamine [GC/MS], Tramadol [GC/MS], Tranylcypromine [GC/MS], Trazodone [GC/MS], Trihexyphenidyl [GC/MS], Venlafaxine [GC/MS], Verapamil [GC/MS], Warfarin [GC/MS], Xylazine [GC/MS], Zaleplon [GC/MS], Zolazepam [GC/MS], Zolpidem [GC/MS]

Method(s): Enzyme-Linked Immunosorbent Assay (ELISA)
Gas Chromatography/Mass Spectrometry (GC/MS)
Headspace Gas Chromatography (GC)

Purpose: Forensic Analysis; Exclusion Screen

Category: Hypnotic, Sedative, Anesthetic, Cardiovascular, Analgesic, Anesthetic, Anticonvulsant, Sedative, Methylxanthine, Sleep Aid, Stimulant, Anesthetic (Local), Poison, Bronchodilator, Analgesic, Muscle Relaxant, Anesthetic, Opioid Analgesic, Oral Hypoglycemic Agent, Cognitive Adjuvant, Expectorant, Calcium Channel Blocker, Antiparkinson, Stimulant, Anorexogenic, Antihistamine, Antiperistaltic, Antihistamine, Anxiolytic, Antitussive, Hallucinogen, Antihypertensive, Appetite Suppressant, Anticoagulant, Pesticide, Anxiolytic, Sedative, Antiemetic, Antipsychotic, Antipsychotic (Neuroleptic), Analgesic, Antidepressant, Anxiolytic, Anticonvulsant, Antiepileptic, Analgesic, Anti-Inflammatory, Narcotic Analgesic, Hypnotic, Sedative, Volatile, Muscle Relaxant, Antipsychotic, Antiemetic, Bronchodilator, Stimulant, Antiepileptic, Anticonvulsant, Hallucinogen, Environmental/Occupation Toxin, Anticholinergic, Decongestant, Stimulant, Antimalarial, Muscle Relaxant, Vasodilator, Antiplatelet

Specimen Requirements: 10 mL Blood

Minimum Volume: 10 mL

Special Handling: In addition to blood, collect 1 mL of Vitreous fluid for the Alcohol Confirmation.
Collect sample using alcohol free skin preparation.

Specimen Container: Gray top tube (Sodium Fluoride / Potassium Oxalate), Lavender top tube (EDTA)

Transport Temperature: Refrigerated

Light Protection: Yes

Rejection Criteria: Not received Light Protected.

Stability: Room Temperature: Undetermined
Refrigerated: Undetermined
Frozen (-20 °C): Undetermined

Method: Enzyme-Linked Immunosorbent Assay (ELISA)

Set-Up Days / TAT: Monday-Friday 2nd Shift 1 day (after set-up)

CPT Code: 80101x4

Compound Name / Alias	Units	RL	Reference Comment
Salicylates	mcg/mL	120	
Opiates	ng/mL	20	
Cocaine / Metabolites	ng/mL	20	
Benzodiazepines	ng/mL	100	
Cannabinoids	ng/mL	10	

New Tests and Test Updates

New Tests

Method: Headspace Gas Chromatography (GC)

Set-Up Days / TAT: Monday-Friday 4 days (after set-up)
CPT Code: 82055

Compound Name / Alias	Units	RL	Reference Comment
Ethanol Ethyl Alcohol	mg/dL	10	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.
Blood Alcohol Concentration (BAC)	g/100 mL	0.01	
Methanol Methyl Alcohol	mg/dL	5.0	Endogenous blood levels of methanol from metabolic and dietary sources are approximately 0.15 mg/dL. Exposure to 800 ppm methanol for 8 hours produced a maximum average blood methanol concentration of 3.1 mg/dL.
Isopropanol Isopropyl Alcohol	mg/dL	5.0	Three workers exposed to 191 - 200 ppm isopropanol in air had blood isopropanol concentrations <1 mg/dL; acetone levels were 4 - 16 mg/dL during the exposure. After a sponge bath with isopropanol, one adult had a blood isopropanol concentration of 10 mg/dL. In a study of 31 isopropanol deaths, postmortem blood concentrations ranged from 10 to 250 mg/dL (mean, 140 mg/dL) and acetone blood concentrations ranged from 40 - 300 mg/dL (mean, 170 mg/dL).
Acetone	mg/dL	5.0	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.

Method:

Set-Up Days / TAT: Monday-Friday 5 days (after set-up)
CPT Code: 80100

Method: Enzyme-Linked Immunosorbent Assay (ELISA)

Set-Up Days / TAT: Monday Wednesday Friday 2nd Shift 1 day (after set-up)
CPT Code: 80101

Compound Name / Alias	Units	RL	Reference Comment
Buprenorphine / Metabolite Buprenex®; Suboxone®; Subutex®; Temgesic®	ng/mL	0.5	When a single 0.4 mg sublingual dose was administered 3 hours after a 0.3 mg intramuscular dose, the plasma levels following the sublingual dose were: 0.45 - 0.84 ng/mL at 2 hours 0.36 - 0.58 ng/mL at 6.5 hours 0.25 - 0.36 ng/mL at 10 hours

Method: Gas Chromatography/Mass Spectrometry (GC/MS)

Set-Up Days / TAT: Monday-Friday 5 days (after set-up)
CPT Code: 80100

Compound Name / Alias	Units	RL	Reference Comment
10-Hydroxycarbazepine Oxcarbazepine Metabolite	mcg/mL	0.5	Proposed therapeutic range: 10 - 35 mcg/mL.
7-Amino Flunitrazepam Flunitrazepam Metabolite	ng/mL	100	7-Amino Flunitrazepam is present in plasma at a concentration of approx. 0.8 ng/mL at 24 hours after a single 2 mg oral dose of Flunitrazepam.

New Tests and Test Updates

New Tests

Compound Name / Alias	Units	RL	Reference Comment
Acetaminophen	mcg/mL	20	Usual therapeutic range (following one gram): 5 - 20 mcg/mL. Hepatic damage may occur if concentration is greater than 120 mcg/mL at 4 hours or greater than 50 mcg/mL at 12 hours after ingestion.
Alfentanil Alfenta®	ng/mL	5.0	Following an intravenous injection of 50 mcg/kg to two subjects, a mean plasma concentration of 540 ng/mL was reported at 1 minute, decreasing to 38 ng/mL at 1 hour.
Amitriptyline Elavil®; Endep®	ng/mL	25	
Amobarbital			Following a single oral administration of 120 mg, serum concentrations peaked at about 1.8 mcg/mL at 2 hours, and declined slowly thereafter with a half-life of approximately 24 hours. Potentially toxic at plasma concentrations greater than 9 mcg/mL.
Amoxapine Asendin®	ng/mL	25	Reported serum concentrations following a 300 mg daily regimen ranged from 17 - 93 ng/mL. The ratio of whole blood concentration to serum or plasma concentration is unknown for this analyte.
Amphetamine	ng/mL	20	Amphetamine is a drug as well as the metabolite of Methamphetamine. Therapeutic Range (treatment of Narcolepsy or Attention Deficit Disorder) with doses between 10 and 30 mg daily: Mean peak plasma concentrations between 35 and 110 ng/mL.
Atomoxetine Strattera®	ng/mL	12	
Atropine d,l-Hyoscyamine	ng/mL	12	Following a single pre-operative anticholinergic 1 mg I.V. dose: Initial peak of 200 ng/mL, falling to 5 ng/mL by 20 minutes. Following a single 1 mg I.M. dose: Peak levels of 3 ng/mL were obtained after 30 minutes.
Benztropine Cogentin®	ng/mL	2.5	Most probable therapeutic range: 5 - 25 ng/mL. Disorientation has been reported at levels greater than 50 ng/mL.
Brompheniramine Dimetane; Dimetapp	ng/mL	6.2	Therapeutic range: 5 - 15 ng/mL. Toxic: Greater than 500 ng/mL.
Bupivacaine Marcaine®	mcg/mL	0.02	Following a single 150 mg peridural blocking dose: Up to 1.1 mcg/mL.
Bupropion Wellbutrin®	ng/mL	100	Maximum antidepressant response was observed at trough plasma concentrations of 50 - 100 ng/mL bupropion with virtually no response below 25 ng/mL. Juvenile patients taking once daily, extended release bupropion for two weeks had the following peak plasma levels: 100 mg/day (n = 11), 25 +/- 8 ng/mL bupropion 200 mg/day (n = 8), 53 +/- 22 ng/mL bupropion The ratio of whole blood concentration to serum or plasma concentration is unknown for this analyte. Specimens must be kept frozen. If specimens are not kept frozen, this may cause lower or negative values.
Bupropion Metabolite	ng/mL		

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Compound Name / Alias	Units	RL	Reference Comment
Buspirone BuSpar®	ng/mL	500	Peak plasma levels of 1 - 6 ng/mL have been observed 40 to 90 minutes after a single oral dose of 20 mg.
Butabarbital Butisol Sodium			Plasma concentrations of 2 - 3 mcg/mL produce sedation and plasma concentrations of 25 mcg/mL produce sleep in most patients. Plasma concentrations of greater than 30 mcg/mL may produce coma and plasma concentrations in excess of 50 mcg/mL are potentially lethal.
Butalbital			A single oral 100 mg dose resulted in a mean peak blood concentration of 2.1 mcg/mL (range, 1.7 - 2.6 mcg/mL) at 2 hours, with a decline to 1.5 mcg/mL (range, 1.3 - 1.7 mcg/mL) by 24 hours. Potentially toxic at plasma concentrations greater than 10 mcg/mL.
Butorphanol Stadol®	ng/mL	10	Peak plasma level following a 2 mg intramuscular dose: 2 ng/mL, one hour after dose.
Caffeine No-Doz	mcg/mL	0.1	Adults: Usual stimulant levels approximately 3 - 15 mcg/mL. Infants: Recommended range during treatment of apnea due to prematurity: 8 - 20 mcg/mL. Toxic: Greater than 50 mcg/mL.
Carbamazepine Tegretol®	mcg/mL	0.1875	Usual antiepileptic range: 4 - 12 mcg/mL. Toxic: Greater than 15 mcg/mL.
Carbinoxamine Palgic	ng/mL	20	
Carbromal	mcg/mL	1.0	Following a single oral 1000 mg dose: Up to 6.0 mcg/mL.
Carisoprodol Soma®	mcg/mL	1.0	Therapeutic levels: Up to 25 mcg/mL.
Cathine / Phenylpropanolamine	ng/mL	25	
Cetirizine Zyrtec®	ng/mL	100	Mean (+/- 1 SD) steady-state peak Plasma levels from patients on a 10 mg daily regimen: 271 - 352 ng/mL at 0.5 to 1.5 hours post dose. Elimination half-life of 7 to 10 hours.
Chlorpheniramine Chlor-Trimeton	ng/mL	2.5	Therapeutic range: 4 - 17 ng/mL. Toxic: Greater than 500 ng/mL.
Chlorpromazine Thorazine®	ng/mL	12	Optimal antipsychotic concentrations: 150 - 300 ng/mL.
Chlorpropamide Diabinese®	mcg/mL	2.5	Therapeutic range with chronic intake: 75 - 250 mcg/mL.
Citalopram / Escitalopram Celexa®/Lexapro®	ng/mL	12	Steady-state serum or plasma levels from patients on a daily regimen of 30 to 60 mg Citalopram: 9 - 200 ng/mL. Steady-state peak plasma levels from patients on a regimen of 10 or 30 mg Escitalopram: 21 and 64 ng/mL, respectively, and occur at approximately 4 hours post dose. This test is not chiral specific; therefore, citalopram and/or escitalopram may be present.
Clomipramine Anafranil®	ng/mL	12	
Clozapine Clozaril®	ng/mL	100	After typical therapeutic doses of Clozapine, plasma concentrations are reported to range from 60 - 1000 ng/mL, with average concentrations between 200 - 400 ng/mL. At an average dose of 3.09 mg/Kg, steady-state plasma concentrations of Clozapine averaged 231 ng/mL +/- 144 ng/mL (mean +/- SD). Norclozapine concentrations averaged 84% of Clozapine. Whole blood clozapine concentrations are approximately 10% lower than plasma concentrations where as Norclozapine blood concentrations are approximately 30% higher than plasma concentrations.

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Compound Name / Alias	Units	RL	Reference Comment
Cotinine Nicotine Metabolite	ng/mL	12	Cotinine concentrations from use of tobacco products and/or nicotine replacement therapy: 100 - 1200 ng/mL.
Cyclizine Marezine®	ng/mL	50	Following a single oral 50 mg dose: Up to 69 ng/mL.
Cyclobenzaprine Flexeril®	ng/mL	12	Daily regimen of 30 mg: 3 - 36 ng/mL.
Desipramine Imipramine Metabolite; Norpramin®; Pertofrane®	ng/mL	12	Therapeutic range in outpatients on 100 to 200 mg Desipramine/day: 40 - 250 ng/mL.
Desmethylclomipramine Clomipramine Metabolite	ng/mL	12	The plasma concentrations of Clomipramine and metabolite vary widely between patients. The suggested antidepressant range for the sum of Clomipramine plus Desmethylclomipramine: 200 - 500 ng/mL plasma.
Desmethyldoxepin Doxepin Metabolite	ng/mL	12	Patients on an average antidepressant dose of 113 mg Doxepin/day: 0 - 80 ng Desmethyldoxepin/mL.
Dicyclomine Bentyl®	ng/mL	20	Following a single 20 mg oral dose: Up to 20 ng/mL.
Diltiazem Cardizem®	ng/mL	12	Reported therapeutic range: Approximately 50 - 200 ng/mL.
Diphenhydramine Benadryl®	ng/mL	50	Usual antihistaminic/hypnotic range: 100 - 1000 ng/mL. Toxicity reported at greater than 1000 ng/mL.
Diphenoxylate Lomotil®; Lonox®	ng/mL	100	Following a single 5 mg oral dose: Up to 12 ng/mL.
Donepezil Aricept®	ng/mL	20	Acetylcholinesterase inhibition (50 - 90%) has been observed at steady-state plasma concentrations between 15 - 50 ng/mL. Steady-state levels are achieved after approximately 2 weeks of daily dosing.
Doxepin Sinequan®	ng/mL	25	Patients on an average antidepressant dose of 113 mg Doxepin/day: 5 - 115 ng/mL
Doxylamine Unisom®	ng/mL	12	Following a single 25 mg oral dose: Up to 170 ng/mL.
Duloxetine Cymbalta®	ng/mL	200	Steady-state trough plasma concentrations after 5 days of oral therapy were: 20 mg twice daily: 4 - 22 ng/mL 30 mg twice daily: 8 - 48 ng/mL 40 mg twice daily: 12 - 60 ng/mL.
EDDP Methadone Metabolite			
Ephedrine / Pseudoephedrine	ng/mL	37	
Ethosuximide Zarontin®	mcg/mL	5.0	Usual antiepileptic range: 40 - 100 mcg/mL.
Ethotoin Peganone®	mcg/mL	2.0	Usual antiepileptic range: 6 - 20 mcg/mL.
Ethylmorphine Dionin	ng/mL	300	
Etomidate Amidate®	ng/mL	100	Plasma levels required to induce anesthesia are approximately 2000 ng/mL, but hypnosis is maintained with concentrations greater than 230 ng/mL.
Fentanyl Duragesic®; Sublimaze®	ng/mL	2.5	Immediately following a single 2 mcg/kg I.V. dose: Up to 11 ng/mL, declining to 1 ng/mL after one hour. Following the application of a 100 mcg/hour transdermal patch, serum levels (after an initial lag time of approximately six hours) of 0.8 - 2.6 ng/mL were maintained for more than 24 hours after application. Peak plasma levels following a single oral transmucosal dose (Fentanyl Oralet) of 15 mcg/kg to children: 2 - 4 ng/mL at 20 minutes.

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Compound Name / Alias	Units	RL	Reference Comment
Flunitrazepam Rohypnol®	ng/mL	300	Flunitrazepam is present in plasma at a concentration of approximately 1.5 ng/mL at 24 hours after a single 2 mg oral dose.
Fluoxetine Prozac®	ng/mL	12	Daily therapy with 40 mg Fluoxetine/day: Steady-state concentration at 4 to 8 hours after dosing ranges from 91 - 302 ng/mL serum.
Fluvoxamine Luvox®	ng/mL	12	Steady-state plasma levels following a daily regimen of 150 to 300 mg/day: 78 - 920 ng/mL (mean of 510).
Guaifenesin Glyceryl Guaiacolate	mcg/mL	5.0	Following a single 600 mg oral dose: Peak blood concentrations averaged 1.4 mcg/mL at 15 minutes post dose. Half-life in blood: 60 minutes.
Haloperidol Haldol®	ng/mL	50	Steady-state antipsychotic plasma concentration during daily regimen of 1 to 90 mg/day: 0.5 - 120 ng/mL (mean, 6 ng/mL). Blood to plasma ratio: 0.79.
Hydroxybupropion Bupropion Metabolite	ng/mL	40	Juvenile patients taking once daily, extended release bupropion for two weeks had the following peak plasma levels: 100 mg/day (n = 11), 450 +/- 210 ng/mL hydroxybupropion 200 mg/day (n = 8), 710 +/- 350 ng/mL hydroxybupropion The ratio of whole blood concentration to serum or plasma concentration is unknown for this analyte.
Hydroxychloroquine Plaquenil®	mcg/mL	0.1	
Hydroxyzine Vistaril®	ng/mL	6.2	Peak level following a single 100 mg oral dose: Up to 80 ng/mL.
Ibuprofen Motrin®	mcg/mL	10	Therapeutic: 10 - 50 mcg/mL. Toxic: Greater than 100 mcg/mL.
Imipramine Tofranil®	ng/mL	25	
Ketamine Ketalar®	ng/mL	37	Reported levels during anesthesia: 500 - 6500 ng/mL.
Lamotrigine Lamictal®	mcg/mL	0.4	Therapeutic range: 3 - 14 mcg/mL.
Levetiracetam Keppra®	mcg/mL	1.0	Steady-state trough serum or plasma levels following doses of 1000 to 3000 mg/day: 3 - 37 mcg/mL. The same dosage regimen will typically result in peak levels of 10 - 60 mcg/mL, at approximately 1.5 hours post dose.
Lidocaine Xylocaine®	mcg/mL	0.1	Reported antiarrhythmic range: 2 - 5 mcg/mL.
Maprotiline Ludiomil®	ng/mL	10	Following daily oral doses of 50, 100 and 150 mg, the steady-state mean blood concentrations were 70, 140 and 220 ng/mL respectively.
Meclizine Antivert®	ng/mL	6.2	Following a single 25 mg oral dose to one patient: Approximately 85 ng/mL at 4 hours post dose (peak), and less than 10 ng/mL at 24 hours post dose.
Mefloquine Lariam®	ng/mL	100	Steady-state whole blood concentrations following a weekly regimen of 125 mg/week: 310 - 470 ng/mL peak at 6 hours post dose and 130 - 240 ng/mL at trough. Steady-state whole blood concentrations following a weekly regimen of 250 mg/week: 110 - 1000 ng/mL peak at 6 hours post dose and 333 - 640 ng/mL at trough.

New Tests and Test Updates

New Tests

Compound Name / Alias	Units	RL	Reference Comment
Meperidine Demerol®	mcg/mL	0.025	
Mephenytoin Mesantoin®	mcg/mL	0.5	
Mephobarbital Mebaral®			Oral daily doses of 100 - 400 mg resulted in plasma concentrations ranging from 0.5 - 1.7 mcg/mL.
Mepivacaine Carbocaine®; Polocaine®	mcg/mL	0.05	Usual local anesthetic range: 2 - 5 mcg/mL.
Meprobamate Carisoprodol Metabolite	mcg/mL	1.0	Usual therapeutic range: 10 - 30 mcg/mL.
Mesoridazine Serentil®	ng/mL	200	Therapeutic range: 100 - 1400 ng/mL.
Methadone Dolophine®	ng/mL	50	Usual narcotic stabilization range: 50 - 1000 ng/mL.
Methamphetamine	ng/mL	20	Therapeutic Range (treatment of Obesity and Attention Deficit Disorder) following a 12.5 mg oral dose: Mean peak blood concentrations were 20 ng/mL at 2.5 hours. This test reports Methamphetamine as the total of the undifferentiated d and l enantiomers. The ratio of these enantiomers is important in determining whether the source of Methamphetamine is from over the counter medications, prescribed medication or controlled substances. Call lab for further information on d to l enantiomer ratio determination.
Methapyrilene	ng/mL	100	Peak plasma levels following a single 50 mg oral dose: Up to 50 ng/mL at 1.5 hours post dose with no apparent sedation.
Methaqualone Quaalude	mcg/mL	0.1	Reported blood levels associated with: Erratic driving: 2 - 12 mcg/mL Mild Toxicity: 2 - 16 mcg/mL Unconsciousness: Greater than 8 mcg/mL
Methcathinone CAT	ng/mL	20	
Methocarbamol Robaxin®	mcg/mL	0.2	Peak levels 1 to 2 hours following a single oral dose: 2 g: 26 mcg/mL 4 g: 41 mcg/mL
Methorphan Coricidin; DXM; Dex	ng/mL	12	
MDA Adam; Methylenedioxyamphetamine	ng/mL	50	Methylenedioxyamphetamine (MDA) is a drug as well as a metabolite of both Methylenedioxymethamphetamine (MDMA) and Methylenedioxyethylamphetamine (MDEA). Expected blood or plasma concentrations after common doses of MDA are not available; but by analogy with Amphetamine are probably less than 400 ng/mL.
MDEA Eve; Methylenedioxyethylamphetamine	ng/mL	10	A single oral 140 mg dose given to 6 adults produced peak plasma concentrations that averaged 260 ng/mL at 2.2 hours.
MDMA Ecstasy; Methylenedioxymethamphetamine	ng/mL	50	Following a single 50 mg oral dose, the mean peak plasma concentration was 110 ng/mL at 2 hours.
Methylephedrine	ng/mL	10	

New Tests and Test Updates

New Tests

Compound Name / Alias	Units	RL	Reference Comment
Methylphenidate Ritalin®	ng/mL	50	Peak plasma concentrations of 8 - 22 ng/mL are usual at 1 to 2 hours following 10 to 20 mg oral pediatric anti-hyperkinetic doses.
Metoclopramide Reglan®	ng/mL	62	Peak plasma levels 1 to 2 hours following a single oral dose: 10 mg: 30 - 40 ng/mL 20 mg: 70 - 90 ng/mL
Metoprolol Lopressor®	ng/mL	500	Following oral administration of multiple doses of Metoprolol Tartrate (50 to 80 mg 3 times daily) peak plasma concentrations range from 20 - 340 ng/mL.
Mirtazapine Remeron®	ng/mL	12	Steady-state peak (0.7 to 4.8 hours post-dose) and trough plasma concentrations following a daily regimen: 15 mg/day: 27 - 51 ng/mL peak; 4.3 - 12 ng/mL trough 30 mg/day: 56 - 104 ng/mL peak; 11 - 25 ng/mL trough 45 mg/day: 84 - 142 ng/mL peak; 17 - 39 ng/mL trough 60 mg/day: 117 - 199 ng/mL peak; 24 - 52 ng/mL trough 75 mg/day: 137 - 225 ng/mL peak; 28 - 64 ng/mL trough Elimination half-life: 20 to 40 hours.
Monoethylglycinexylidide (MEGX) Lidocaine Metabolite	mcg/mL	0.5	
N-Acetylprocainamide NAPA	ng/mL	1000	
Naproxen Naprosyn®	mcg/mL	50	Anti-inflammatory or analgesic range: 30 - 90 mcg/mL.
Nicotine	ng/mL	12	Nicotine concentrations from use of tobacco products and/or nicotine replacement therapy: 5 - 50 ng/mL.
Nifedipine Procardia®	ng/mL	100	Reported therapeutic range: 25 - 100 ng/mL.
Norclozapine Clozapine Metabolite	ng/mL	500	The rate of formation and biologic activity of Clozapine metabolites have not been fully elucidated. One study of patients dosed with 400 mg Clozapine daily for 4 weeks showed that patients were most likely to respond to therapy when plasma concentrations of Clozapine plus Norclozapine (limited activity) totaled at least 450 ng/mL.
Norfentanyl Fentanyl Metabolite	ng/mL	2.5	
Norfluoxetine Fluoxetine Metabolite	ng/mL	12	Daily therapy with 40 mg Fluoxetine/day: Steady-state concentration at 4 to 8 hours after dosing ranges from 72 - 258 ng/mL serum.
Norketamine Ketamine Metabolite	ng/mL	37	The intravenous administration of 2 mg/kg of Ketamine followed by continuous infusion of 41 mcg/kg/minute produced an average steady-state plasma concentration of 2200 ng Ketamine/mL and an average peak Norketamine level of 1050 ng/mL which occurred near the end of the 3 hour infusion.
Normeperidine Meperidine Metabolite	ng/mL	12	Expected analgesic range: 100 - 600 ng Meperidine/mL. Normeperidine concentrations: Up to 500 ng/mL.
Normethsuximide Methsuximide Metabolite	mcg/mL	5.0	Usual therapeutic range: 10 - 40 mcg/mL.
Norpropoxypheneamide	mcg/mL	0.5	
Nortriptyline Amitriptyline Metabolite; Aventyl®; Pamelor®	ng/mL	12	Nortriptyline is a metabolite of Amitriptyline and is also available as an independent therapeutic agent. When Amitriptyline is the administered drug: Usual therapeutic range for the total of Amitriptyline plus Nortriptyline: 80 - 250 ng/mL. When Nortriptyline is the administered drug: Usual therapeutic range: 50 - 150 ng/mL.

New Tests and Test Updates

New Tests

Compound Name / Alias	Units	RL	Reference Comment
O-Desmethylvenlafaxine Desvenlafaxine; Pristiq®; Venlafaxine Metabolite	mcg/mL	15	Steady-state peak plasma levels following a daily regimen of Venlafaxine occur at approximately 2.5 hours for O-Desmethylvenlafaxine: 94 - 200 ng/mL (75 mg/day), 85 - 472 ng/mL (150 mg/day), 243 - 515 ng/mL (225 mg/day), 390 - 1096 ng/mL (450 mg/day). Steady-state trough plasma levels following a 150 mg per day regimen: 65 - 300 ng O-Desmethylvenlafaxine/mL.
Olanzapine Zyprexa®	ng/mL	200	Proposed therapeutic range: 5.0 - 75 ng/mL.
Orphenadrine Flexon; Norflex	ng/mL	12	During chronic oral muscle relaxing 300 mg/day: 100 - 200 ng/mL.
Papaverine Cerespan®	mcg/mL	0.05	Concentrations as high as 4 mcg/mL have been observed 2 hours after the ingestion of 300 mg.
Paroxetine Paxil®	ng/mL	12	Trough steady-state Plasma levels in adult patients have great inter-individual variability. The following steady-state data is from patients on a daily single dose regimen and represent the mean +/- 1 SD: 49 +/- 26 ng/mL (20 mg/day), 86 +/- 61 ng/mL (30 mg/day), 129 +/- 86 ng/mL (40 mg/day), 117 +/- 90 ng/mL (50 mg/day).
Pentazocine Talwin®	ng/mL	10	Following a 75 mg oral dose, peak plasma concentrations averaged 160 ng/mL in 2 to 3 hours. Following a 45 mg IM dose, peak plasma concentrations averaged 140 ng/mL within 60 minutes. Plasma concentrations in surgical patients (5 to 10 minutes after IV injection) may be between 200 - 1000 ng/mL.
Pentobarbital			Peak serum concentrations of 1.2 - 3.1 mcg/mL were produced 0.5 - 2.0 hours after a 100 mg oral dose and peak serum concentrations of 3 mcg/mL were produced 6 min. following a 100 mg IV dose. Potentially toxic at blood concentrations greater than 10 mcg/mL.
Phenacetin	mcg/mL	0.1	Following a single 650 mg oral dose: Up to 2.2 mcg/mL.
Phencyclidine Angel Dust; PCP; Sherm			
Phendimetrazine Bontril®; Prelu-2®	ng/mL	50	Following a single 35 mg oral dose (immediate-release preparation), serum concentrations averaged 90 ng/mL at 1 hour. Following a single 105 mg oral dose (sustained-release preparation), the mean peak serum concentration was 52 ng/mL at 1 hour.
Pheniramine	ng/mL	20	Expected peak level following a single 75 mg oral antihistaminic dose: 190 ng/mL.
Phenmetrazine Preludin®	ng/mL	50	Phenmetrazine is a drug as well as the metabolite of Phendimetrazine. Following a single 75 mg oral dose, mean peak plasma concentrations were reported to be 130 ng/mL at 2 hours, declining to 60 ng/mL after 12 hours.

New Tests and Test Updates

New Tests

Compound Name / Alias	Units	RL	Reference Comment
Phenobarbital Luminal®			Serum/plasma concentrations of 10 - 30 mcg/mL are generally considered desirable when given as an anticonvulsant. A blood/plasma ratio of 0.81 has been reported.
Phensuximide Milontin®	mcg/mL	2.0	During chronic oral anti-epileptic doses of 3 grams/day: 4 - 8 mcg/mL.
Phentermine Adipex-P®; Ionamin®; Pro-Fast®	ng/mL	50	A single 26 mg/70 kg oral dose produced a mean peak blood concentration of 90 ng/mL at 4 hours, declining to 30 ng/mL after 40 hours. Adults receiving 30 mg daily oral doses for 2 weeks achieved a mean steady-state plasma concentration of 360 ng/mL (range 180 to 510 ng/mL).
Phenytoin Dilantin®	mcg/mL	1.0	Antiepileptic range: 10 - 20 mcg/mL.
Primidone Mysoline®	mcg/mL	1.0	Antiepileptic range: 5 - 12 mcg/mL.
Procainamide Procan® SR	mcg/mL	1.0	
Prochlorperazine Compazine®	ng/mL	2.5	Following a single 12.5 mg oral tranquilizing dose: Up to approximately 1 ng/mL.
Promazine Sparine®	ng/mL	20	Following a 100 mg oral dose, mean peak plasma concentration was 137 ng/mL at 1.5 hours, declining with an average half-life of 13 hours.
Promethazine Phenergan®	ng/mL	30	Following a single 50 mg oral dose: Up to 23 ng/mL.
Propoxyphene Darvon®			Average serum concentrations following a daily regimen of 195 mg Propoxyphene: 0.42 mcg Propoxyphene/mL.
Quetiapine Seroquel®	ng/mL	62	Steady-state peak (1.0 to 1.5 hours) plasma levels following a t.i.d. daily regimen: 286 ng/mL (225 mg/day) 598 ng/mL (450 mg/day) 828 ng/mL (750 mg/day) The plasma half-life is approximately 6 hours.
Quinidine	mcg/mL	0.05	Usual therapeutic range: 2 - 6 mcg/mL. Toxicity generally seen at concentrations greater than 8 mcg/mL.
Quinine	mcg/mL	0.05	
Secobarbital Seconal®			A 3.3 mg/kg oral dose (approx. 230 mg/70 kg) produced a mean peak blood concentration of 2.0 mcg/mL (range, 1.8 - 2.2 mcg/mL) at 3 hours, diminishing to 1.3 mcg/mL by 20 hours and 0.8 mcg/mL by 40 hours. Potentially toxic at blood concentrations greater than 8 mcg/mL.
Selegiline Eldepryl®	ng/mL	20	A 10 mg oral dose given to 10 adults produced a mean peak plasma concentration of less than 10 ng/mL at 0.9 hours.
Sertraline Zoloft®	ng/mL	12	Following single oral doses of 50, 100, 200, 300 and 400 mg, the peak plasma levels were 9.5, 16, 56, 78, and 88 ng/mL, respectively, and occurred at 6 to 10 hours post dose. Mean peak steady-state plasma levels following daily regimens of 50, 100, 150 and 200 mg/day were 32, 54, 144 and 190 ng/mL, respectively, and occurred at 4.5 to 8.4 hours following the last dose.

New Tests and Test Updates

New Tests

Compound Name / Alias	Units	RL	Reference Comment
Strychnine	ng/mL	50	Potentially lethal concentrations are in excess of 500 ng/mL.
Sufentanil Sufenta®	ng/mL	10	Following I.V. administration of 30 mcg Sufentanil/kg for surgical analgesia, mean peak plasma levels range from 36 - 43 ng/mL and decline to 0.33 ng/mL at 23 hours. Terminal plasma elimination half-life (average = 2.7 hours) occurs at 2 hours post dose. Reported analgesic range: 0.05 - 0.3 ng/mL.
Theobromine Xantheose	mcg/mL	5.0	Mean plasma levels following a single 10 mg/kg oral dose: 9.8 mcg/mL at 2.1 hours post dose; falling to 5.8 mcg/mL at 6 hours post dose.
Theophylline Aminophylline	mcg/mL	0.5	Usual therapeutic range: 10 - 20 mcg/mL.
Thiopental Pentothal®	mcg/mL	1.0	Hypnotic range: 1 - 5 mcg/mL Therapeutic coma: 30 - 100 mcg/mL Anesthesia: 7 - 130 mcg/mL
Thioridazine Mellaril®	ng/mL	200	Steady-state serum concentration during chronic oral administration of 400 mg daily: 140 - 2600 ng/mL. Therapeutic steady-state concentrations may overlap levels associated with toxicity.
Thiothixene Navane®	ng/mL	100	
Ticlopidine Ticlid®	mcg/mL	0.02	Steady state peak plasma levels from patients on a 250 mg twice daily regimen: 0.22 - 2.1 mcg/mL (mean of 0.99) at 2 hours post dose.
Tiletamine Telazol®	ng/mL	40	
Tramadol Ultram®; Ultrex®	ng/mL	25	Peak plasma levels following a single 100 mg oral dose: 230 - 380 ng/mL. Steady-state plasma levels following a 100mg 4 times daily regimen: 420 - 770 ng/mL.
Tranylcypromine Parnate®	ng/mL	10	Following a single oral 30 mg dose: Up to 39 ng/mL.
Trazodone Desyrel®	mcg/mL	0.1	Therapeutic range: 0.3 - 1.5 mcg/mL.
Trihexyphenidyl Artane®	ng/mL	1.0	Usual therapeutic levels: Up to 40 ng/mL.
Venlafaxine Effexor®	ng/mL	12	Steady-state peak plasma levels following a daily regimen occur at 2 hours for Venlafaxine: 35 - 79 ng/mL (75 mg/day), 93 - 334 ng/mL (150 mg/day), 68 - 265 ng/mL (225 mg/day), 196 - 597 ng/mL (450 mg/day). Steady-state trough plasma concentrations following a 150 mg per day regimen: 0 - 141 ng/mL.
Verapamil Calan®; Isoptin®	ng/mL	25	Probable therapeutic range: 70 - 350 ng/mL. Two to three fold greater plasma Verapamil concentrations are required after oral dosing, as compared to I.V. dosing, to elicit the same increase in a-v conduction time.
Warfarin Coumadin	mcg/mL	50	Usual therapeutic range: 2 - 8 mcg/mL.
Xylazine Rompum®	mcg/mL	0.4	

New Tests and Test Updates

New Tests

Compound Name / Alias	Units	RL	Reference Comment
Zaleplon Sonata®	ng/mL	50	Zaleplon is a short-acting hypnotic agent used for the treatment of insomnia. Peak plasma levels 1 hour following a single 10 or 20 mg oral dose are 26 and 49 ng/mL, respectively. The drug has an elimination half-life of approximately 1 hour.
Zolazepam Flupyrazapon®	ng/mL	100	
Zolpidem Ambien®	ng/mL	12	Plasma concentrations following single oral 5 mg and 10 mg immediate release doses range from 29 - 110 ng/mL (mean, 59 ng/mL) and 58 - 270 ng/mL (mean, 120 ng/mL), respectively, occurring at a mean time of 1.6 hrs. Peak plasma concentrations following a single oral 12.5 mg extended release dose ranged from 69 - 190 ng/mL (mean = 130 ng/mL) occurring at a mean time of 1.5 hrs. The ratio of whole blood concentration to serum or plasma concentration is unknown for this analyte.

Other Findings

8043B **Postmortem Toxicology - Expert with Vitreous Alcohol Confirmation, Blood (Forensic)** **Effective Immediately**

Scope of Analysis:	*** For complete listing, contact Client Support at 800.522.6671 ***
Method(s):	Enzyme-Linked Immunosorbent Assay (ELISA) Gas Chromatography/Mass Spectrometry (GC/MS) Headspace Gas Chromatography (GC)
Purpose:	Forensic Analysis; Exclusion Screen
Category:	Hypnotic, Sedative, Benzocaine Analog, Parkinsonian Agent, Anesthetic, Cardiovascular, Sleep Aid, Analgesic, Anesthetic, Anticonvulsant, Sedative, Methylxanthine, Antihistamine, Decongestant, Stimulant, Anesthetic (Topical), Antiemetic, Antihistamine, Anorexic, Hemostatic, Sketetal Muscle Relaxant, Anesthetic (Local), Adrenergic, Anti-Inflammatory, Poison, Bronchodilator, Antibacterial, Analgesic, Muscle Relaxant, Oral Hypoglycemic Agent, Anesthetic, Opioid Analgesic, Cognitive Adjuvant, Expectorant, Cocaine Cutting Agent, Alzheimers Drug, Drug Analog, Calcium Channel Blocker, Antiparkinson, Anticholinergic, Poison, Anti-Estrogen, Anti-Adrenergic, Beta-Blocker, Antihypertensive, Stimulant, Anorexogenic, Antihistamine, Antifungal, Antihistamine, Antipruritic, Antiperistaltic, Hypnotic, Antihyperlipidemic, Antihistamine, Anxiolytic, Dye, Antitussive, Hallucinogen, Appetite Suppressant, Topical Decongestant, Anticoagulant, Pesticide, Anxiolytic, Sedative, Antiemetic, Antipsychotic, Stimulant (Respiratory), Antiarrhythmic, Antipsychotic (Neuroleptic), Anti-Impotence Drug, Analgesic, Sedative, Anticonvulsant, Antiepileptic, Antiviral, Antidepressant, Anxiolytic, Disinfectant, Analgesic, Anti-Inflammatory, Cardiac Depressant, Occular Vasoconstrictor, Narcotic Analgesic, Hypnotic, Sedative, Volatile, Decomposition Product, Muscle Relaxant, Antipsychotic, Neurotoxin, Antiemetic, Vasodilator, Bronchodilator, Stimulant, Antiepileptic, Anticonvulsant, Hallucinogen, Environmental/Occupation Toxin, Opioid Analgesic, Analgesic, Antipyretic, Anticholinergic, Decongestant, Stimulant, Muscle relaxant, Sedative, Antimalarial, Muscle Relaxant, Vasodilator, Antiplatelet
Specimen Requirements:	10 mL Blood
Minimum Volume:	10 mL
Special Handling:	In addition to blood, collect 1 mL of Vitreous fluid for the Alcohol Confirmation. Collect sample using alcohol free skin preparation.
Specimen Container:	Gray top tube (Sodium Fluoride / Potassium Oxalate), Lavender top tube (EDTA)
Transport Temperature:	Refrigerated
Light Protection:	Yes
Rejection Criteria:	Not received Light Protected.
Stability:	Room Temperature: Undetermined Refrigerated: Undetermined Frozen (-20 °C): Undetermined

New Tests and Test Updates

New Tests

Method: Headspace Gas Chromatography (GC)

Set-Up Days / TAT: Monday-Friday 4 days (after set-up)
CPT Code: 82055

Compound Name / Alias	Units	RL	Reference Comment
Ethanol Ethyl Alcohol	mg/dL	10	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.
Blood Alcohol Concentration (BAC)	g/100 mL	0.01	
Methanol Methyl Alcohol	mg/dL	5.0	Endogenous blood levels of methanol from metabolic and dietary sources are approximately 0.15 mg/dL. Exposure to 800 ppm methanol for 8 hours produced a maximum average blood methanol concentration of 3.1 mg/dL.
Isopropanol Isopropyl Alcohol	mg/dL	5.0	Three workers exposed to 191 - 200 ppm isopropanol in air had blood isopropanol concentrations <1 mg/dL; acetone levels were 4 - 16 mg/dL during the exposure. After a sponge bath with isopropanol, one adult had a blood isopropanol concentration of 10 mg/dL. In a study of 31 isopropanol deaths, postmortem blood concentrations ranged from 10 to 250 mg/dL (mean, 140 mg/dL) and acetone blood concentrations ranged from 40 - 300 mg/dL (mean, 170 mg/dL).
Acetone	mg/dL	5.0	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.

Method: Enzyme-Linked Immunosorbent Assay (ELISA)

Set-Up Days / TAT: Monday-Saturday 2nd Shift 1 day (after set-up)
CPT Code: 80101x5

Compound Name / Alias	Units	RL	Reference Comment
Salicylates	mcg/mL	120	
Opiates	ng/mL	20	
Cocaine / Metabolites	ng/mL	20	
Benzodiazepines	ng/mL	100	
Cannabinoids	ng/mL	10	

Method: Enzyme-Linked Immunosorbent Assay (ELISA)

Set-Up Days / TAT: Monday Wednesday Friday 2nd Shift 1 day (after set-up)
CPT Code: 80101

Compound Name / Alias	Units	RL	Reference Comment
Buprenorphine / Metabolite Buprenex®; Suboxone®; Subutex®; Temgesic®	ng/mL	0.5	When a single 0.4 mg sublingual dose was administered 3 hours after a 0.3 mg intramuscular dose, the plasma levels following the sublingual dose were: 0.45 - 0.84 ng/mL at 2 hours 0.36 - 0.58 ng/mL at 6.5 hours 0.25 - 0.36 ng/mL at 10 hours

New Tests and Test Updates

New Tests

Method:

Set-Up Days / TAT: Monday-Friday 5 days (after set-up)

CPT Code: 80100

Method: Gas Chromatography/Mass Spectrometry (GC/MS)

Set-Up Days / TAT: Monday-Friday 5 days (after set-up)

CPT Code: 80100

Compound Name / Alias	Units	RL	Reference Comment
10-Hydroxycarbazepine Oxcarbazepine Metabolite	mcg/mL	0.5	Proposed therapeutic range: 10 - 35 mcg/mL.
4-Bromo-2,5-Dimethoxyphenethylamine 2-CB; Nexus	ng/mL	30	
5-Methoxy-N,N-Diisopropyltryptamine Foxy; Foxymethoxy	ng/mL	200	
7-Amino Flunitrazepam Flunitrazepam Metabolite	ng/mL	100	7-Amino Flunitrazepam is present in plasma at a concentration of approx. 0.8 ng/mL at 24 hours after a single 2 mg oral dose of Flunitrazepam.
Acepromazine ACP; Atravert	ng/mL	20	Acepromazine is for veterinary use only. It was reported as the causative agent in a suicide with blood concentration of 600 ng/mL.
Acetaminophen	mcg/mL	20	Usual therapeutic range (following one gram): 5 - 20 mcg/mL. Hepatic damage may occur if concentration is greater than 120 mcg/mL at 4 hours or greater than 50 mcg/mL at 12 hours after ingestion.
Acetohexamide Dymelor®	mcg/mL	5.0	Usual therapeutic range: 20 - 60 mcg/mL.
Alfentanil Alfenta®	ng/mL	5.0	Following an intravenous injection of 50 mcg/kg to two subjects, a mean plasma concentration of 540 ng/mL was reported at 1 minute, decreasing to 38 ng/mL at 1 hour.
Allobarbital Allobarbitone	mcg/mL	0.1	In plasma, the therapeutic concentration is usually in the range of 15 - 40 mcg/mL. Potentially toxic at plasma concentrations greater than 50 mcg/mL.
Alphaprodine Prisilidine	ng/mL	20	
Alphenal	ng/mL	200	
Amantadine Symmetrel®	ng/mL	25	Steady-state plasma concentrations after oral administration of 100 mg twice daily: 200 - 1100 ng/mL. Steady-state plasma concentrations after daily chronic 300 mg oral dose: 700 - 1000 ng/mL. Toxicity reported above 2000 ng/mL.
Amitriptyline Elavil®; Endep®	ng/mL	25	
Amlodipine Norvasc®	ng/mL	10	Steady-state plasma levels following a 5 mg daily regimen: 3 - 11 ng/mL
Amobarbital			Following a single oral administration of 120 mg, serum concentrations peaked at about 1.8 mcg/mL at 2 hours, and declined slowly thereafter with a half-life of approximately 24 hours. Potentially toxic at plasma concentrations greater than 9 mcg/mL.
Amoxapine Asendin®	ng/mL	25	Reported serum concentrations following a 300 mg daily regimen ranged from 17 - 93 ng/mL. The ratio of whole blood concentration to serum or plasma concentration is unknown for this analyte.

New Tests and Test Updates

New Tests

Compound Name / Alias	Units	RL	Reference Comment
Amphetamine	ng/mL	20	Amphetamine is a drug as well as the metabolite of Methamphetamine. Therapeutic Range (treatment of Narcolepsy or Attention Deficit Disorder) with doses between 10 and 30 mg daily: Mean peak plasma concentrations between 35 and 110 ng/mL.
Antipyrine Phenazone	mcg/mL	0.01	Following a single oral dose of 10 mg/kg, peak plasma levels ranged from 10 - 15.5 mcg/mL at 1 hour post dose. Plasma half-life ranges from 7 to 15 hours and is readily influenced by certain disease states and other drugs.
Aprobarbital Oramon	mcg/mL	1.0	In plasma, the therapeutic range is usually between 10 and 40 mcg/mL. Following a single oral dose of 750 mg, a mean peak plasma concentration of 15 mcg/mL (range, 12 - 18 mcg/mL) was produced at 12 hours with a decline to 10 mcg/mL (range, 4 - 14 mcg/mL) after 36 hours. Potentially toxic at plasma concentrations greater than 40 mcg/mL.
Atomoxetine Strattera®	ng/mL	12	
Atropine d,l-Hyoscyamine	ng/mL	12	Following a single pre-operative anticholinergic 1 mg I.V. dose: Initial peak of 200 ng/mL, falling to 5 ng/mL by 20 minutes. Following a single 1 mg I.M. dose: Peak levels of 3 ng/mL were obtained after 30 minutes.
Azatadine Trinalin®	ng/mL	10	Peak plasma concentrations in the low ng/mL range are expected following a 2 mg oral dose.
Barbital Metharbital Metabolite	mcg/mL	0.2	Following a single oral dose of 1500 mg, a mean peak plasma level of 26 mcg/mL (range, 21 - 31 mcg/mL) was reported at 12 hours; the concentration declined to 21 mcg/mL (range, 19 - 23 mcg/mL) by 36 hours. Potentially toxic at plasma concentrations greater than 20 mcg/mL.
BDB 1-(1,3-benzodioxol-5-yl)butan-2-amine	ng/mL		
Benzocaine Orabase; Oragel	mcg/mL	0.05	
Benzoic Acid, 4 Amino-, Methyl Ester Methyl 4-Aminobenzoate	ng/mL		
Benzphetamine Didrex®	ng/mL	20	
Benztropine Cogentin®	ng/mL	2.5	Most probable therapeutic range: 5 - 25 ng/mL. Disorientation has been reported at levels greater than 50 ng/mL.
N-Benzylpiperazine BZP	ng/mL	10	Mean peak plasma concentration following a 200 mg oral dose was reported to be 262 ng/mL (range 222 to 344 ng/mL), 75 min post dose. The whole blood to plasma ratio has not been reported for this drug.
Beta-Phenethylamine PEA	ng/mL	250	
Biperiden Akineton®	ng/mL	10	Most probable antiparkinsonian range: 5 - 25 ng/mL.
Bromocriptine Parlodel	ng/mL	20	

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Compound Name / Alias	Units	RL	Reference Comment
Bromodiphenhydramine Neo-Benadryl	ng/mL	20	The properties of Bromodiphenhydramine are very similar to Diphenhydramine. Based on their similarities, antihistaminic blood values are expected to be in the range of 10 - 100 ng/mL.
Brompheniramine Dimetane; Dimetapp	ng/mL	6.2	Therapeutic range: 5 - 15 ng/mL. Toxic: Greater than 500 ng/mL.
Bupivacaine Marcaine®	mcg/mL	0.02	Following a single 150 mg peridural blocking dose: Up to 1.1 mcg/mL.
Bupropion Wellbutrin®	ng/mL	100	Maximum antidepressant response was observed at trough plasma concentrations of 50 - 100 ng/mL bupropion with virtually no response below 25 ng/mL. Juvenile patients taking once daily, extended release bupropion for two weeks had the following peak plasma levels: 100 mg/day (n = 11), 25 +/- 8 ng/mL bupropion 200 mg/day (n = 8), 53 +/- 22 ng/mL bupropion The ratio of whole blood concentration to serum or plasma concentration is unknown for this analyte. Specimens must be kept frozen. If specimens are not kept frozen, this may cause lower or negative values.
Bupropion Metabolite	ng/mL		
Buspirone BuSpar®	ng/mL	500	Peak plasma levels of 1 - 6 ng/mL have been observed 40 to 90 minutes after a single oral dose of 20 mg.
Butabarbital Butisol Sodium			Plasma concentrations of 2 - 3 mcg/mL produce sedation and plasma concentrations of 25 mcg/mL produce sleep in most patients. Plasma concentrations of greater than 30 mcg/mL may produce coma and plasma concentrations in excess of 50 mcg/mL are potentially lethal.
Butalbital			A single oral 100 mg dose resulted in a mean peak blood concentration of 2.1 mcg/mL (range, 1.7 - 2.6 mcg/mL) at 2 hours, with a decline to 1.5 mcg/mL (range, 1.3 - 1.7 mcg/mL) by 24 hours. Potentially toxic at plasma concentrations greater than 10 mcg/mL.
Butorphanol Stadol®	ng/mL	10	Peak plasma level following a 2 mg intramuscular dose: 2 ng/mL, one hour after dose.
Caffeine No-Doz	mcg/mL	0.1	Adults: Usual stimulant levels approximately 3 - 15 mcg/mL. Infants: Recommended range during treatment of apnea due to prematurity: 8 - 20 mcg/mL. Toxic: Greater than 50 mcg/mL.
Carbamazepine Tegretol®	mcg/mL	0.1875	Usual antiepileptic range: 4 - 12 mcg/mL. Toxic: Greater than 15 mcg/mL.
Carbinoxamine Palgic	ng/mL	20	
Carbromal	mcg/mL	1.0	Following a single oral 1000 mg dose: Up to 6.0 mcg/mL.
Carisoprodol Soma®	mcg/mL	1.0	Therapeutic levels: Up to 25 mcg/mL.
Cathine / Phenylpropanolamine	ng/mL	25	
Cathinone Khat	ng/mL	10	

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Compound Name / Alias	Units	RL	Reference Comment
Cetirizine Zyrtec®	ng/mL	100	Mean (+/- 1 SD) steady-state peak Plasma levels from patients on a 10 mg daily regimen: 271 - 352 ng/mL at 0.5 to 1.5 hours post dose. Elimination half-life of 7 to 10 hours.
Chlorcyclizine Diparalene	ng/mL	20	Following a single 2 mg/kg oral antihistaminic dose: Up to 50 ng/mL.
Chlormezanone Trancopal®	ng/mL	100	
Chlorophene o-Benzyl-p-Chlorophenol	ng/mL	100	
Chlorpheniramine Chlor-Trimeton	ng/mL	2.5	Therapeutic range: 4 - 17 ng/mL. Toxic: Greater than 500 ng/mL.
Chlorphentermine Apsedon; Desopimon; Pre-Sate	ng/mL	20	
Chlorpromazine Thorazine®	ng/mL	12	Optimal antipsychotic concentrations: 150 - 300 ng/mL.
Chlorpropamide Diabinese®	mcg/mL	2.5	Therapeutic range with chronic intake: 75 - 250 mcg/mL.
Chlorzoxazone Parafon Forte®	mcg/mL	0.15	Peak level following single 750 mg oral dose: Approximately 40 mcg/mL.
Cinnamoylcocaine	ng/mL	200	
Cinnarizine Stugeron®	ng/mL	30	
Citalopram / Escitalopram Celexa®/Lexapro®	ng/mL	12	Steady-state serum or plasma levels from patients on a daily regimen of 30 to 60 mg Citalopram: 9 - 200 ng/mL. Steady-state peak plasma levels from patients on a regimen of 10 or 30 mg Escitalopram: 21 and 64 ng/mL, respectively, and occur at approximately 4 hours post dose. This test is not chiral specific; therefore, citalopram and/or escitalopram may be present.
Clemastine Meclastin®	ng/mL	40	Following a single 2 mg oral dose: Peak levels of 2 ng/mL were seen at 2 to 5 hours after dose.
Clomipramine Anafranil®	ng/mL	12	
Clotrimazole Lotrimin®	ng/mL	50	
Clozapine Clozaril®	ng/mL	100	After typical therapeutic doses of Clozapine, plasma concentrations are reported to range from 60 - 1000 ng/mL, with average concentrations between 200 - 400 ng/mL. At an average dose of 3.09 mg/Kg, steady-state plasma concentrations of Clozapine averaged 231 ng/mL +/- 144 ng/mL (mean +/- SD). Norclozapine concentrations averaged 84% of Clozapine. Whole blood clozapine concentrations are approximately 10% lower than plasma concentrations where as Norclozapine blood concentrations are approximately 30% higher than plasma concentrations.
Coniine Poison Hemlock	ng/mL	20	

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Compound Name / Alias	Units	RL	Reference Comment
Cotinine Nicotine Metabolite	ng/mL	12	Cotinine concentrations from use of tobacco products and/or nicotine replacement therapy: 100 - 1200 ng/mL.
Cyclizine Marezine®	ng/mL	50	Following a single oral 50 mg dose: Up to 69 ng/mL.
Cyclobenzaprine Flexeril®	ng/mL	12	Daily regimen of 30 mg: 3 - 36 ng/mL.
Cyproheptadine Periactin®	ng/mL	1.0	Antipruritic range: Not available. Majority of levels found by NMS Labs: 4 - 25 ng/mL.
Descarboethoxyloratadine Clarinex®; Desloratadine; Loratadine Metabolite	ng/mL	20	Peak plasma levels of Loratadine (LOR) and Descarboethoxyloratadine (DCL) following a single oral dose of 10, 20 or 40 mg Loratadine: (10 mg) 4.7, 10.8, 26.1 ng LOR/mL, and 4.0, 9.9, and 16.0 ng DCL/mL. Peaks occur at 1.0 to 1.5 hours post dose for LOR, and at 1.5 to 3.7 hours post dose for DCL. Mean steady-state levels following a 40 mg once daily regimen: Loratadine: Peak of 27 ng/mL at 1.4 hours Loratadine: Trough of approximately 1.0 ng/mL DCL: Peak of 29 ng/mL at 3.0 hours DCL: Trough of approximately 6 ng/mL.
Desipramine Imipramine Metabolite; Norpramin®; Pertofrane®	ng/mL	12	Therapeutic range in outpatients on 100 to 200 mg Desipramine/day: 40 - 250 ng/mL.
Desmethylcitalopram	ng/mL	1000	
Desmethylclomipramine Clomipramine Metabolite	ng/mL	12	The plasma concentrations of Clomipramine and metabolite vary widely between patients. The suggested antidepressant range for the sum of Clomipramine plus Desmethylclomipramine: 200 - 500 ng/mL plasma.
Desmethyldoxepin Doxepin Metabolite	ng/mL	12	Patients on an average antidepressant dose of 113 mg Doxepin/day: 0 - 80 ng Desmethyldoxepin/mL.
Desmethylmianserin Mianserin Metabolite	ng/mL	30	
Desmethylmirtazapine	ng/mL		
Desmethylsertraline	ng/mL	5.0	
Desmethylterbinafine Terbinafine Metabolite	ng/mL	10	
Desmethyltrimipramine Trimipramine Metabolite	ng/mL	10	Observed concentrations during chronic antidepressant doses of 75 to 150 mg/day: 3 - 380 ng/mL.
Dextrorphan / Levorphanol Levo-Dromoran®	ng/mL	100	Reported therapeutic levels range from 4 - 28 ng/mL plasma. Note: This method cannot differentiate between levorphanol and its stereoisomer dextrorphan (dextromethorphan metabolite).
Dicyclomine Bentyl®	ng/mL	20	Following a single 20 mg oral dose: Up to 20 ng/mL.
Diethylpropion Tenuate®	ng/mL	50	Following a single 75 mg oral dose: Average of 7 ng/mL and 3 ng/mL at 0.5 and 2 hours post dose, respectively.

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Compound Name / Alias	Units	RL	Reference Comment
Diltiazem Cardizem®	ng/mL	12	Reported therapeutic range: Approximately 50 - 200 ng/mL.
Dimethyltryptamine Component of Ayahuasca; DMT	ng/mL	25	Peak plasma concentrations ranged from 12 - 26 ng/mL (mean, 16 ng/mL) at 1.5 hours after a 29 mg oral dose of an herbal tea.
Diphenhydramine Benadryl®	ng/mL	50	Usual antihistaminic/hypnotic range: 100 - 1000 ng/mL. Toxicity reported at greater than 1000 ng/mL.
Diphenoxylate Lomotil®; Lonox®	ng/mL	100	Following a single 5 mg oral dose: Up to 12 ng/mL.
Disopyramide Norpace®	mcg/mL	0.5	Reported antiarrhythmic range: 2 - 4 mcg/mL.
Donepezil Aricept®	ng/mL	20	Acetylcholinesterase inhibition (50 - 90%) has been observed at steady-state plasma concentrations between 15 - 50 ng/mL. Steady-state levels are achieved after approximately 2 weeks of daily dosing.
Dothiepin Prothiaden	ng/mL	50	Suggested therapeutic concentrations are greater than 100 ng/mL. Following a single oral dose of 50, 100 and 150 mg the peak plasma levels were: 30, 51 and 85 ng/mL, respectively.
Doxapram Dopram®	mcg/mL	0.1	Usual analeptic levels after 1.5 to 6.5 mg/kg I.V. dose: 1.6 - 5.2 mcg/mL plasma.
Doxepin Sinequan®	ng/mL	25	Patients on an average antidepressant dose of 113 mg Doxepin/day: 5 - 115 ng/mL
Doxylamine Unisom®	ng/mL	12	Following a single 25 mg oral dose: Up to 170 ng/mL.
Duloxetine Cymbalta®	ng/mL	200	Steady-state trough plasma concentrations after 5 days of oral therapy were: 20 mg twice daily: 4 - 22 ng/mL 30 mg twice daily: 8 - 48 ng/mL 40 mg twice daily: 12 - 60 ng/mL.
Duloxetine Artifact	ng/mL		
EDDP Methadone Metabolite			
EMDP Methadone Metabolite	ng/mL		
Ephedrine / Pseudoephedrine	ng/mL	37	
Eszopiclone / Zopiclone Imovane®; Lunesta®	ng/mL	25	
Eszopiclone / Zopiclone Breakdown	ng/mL	10	
Ethinamate Valmid®	ng/mL	100	Usual hypnotic range: 5000 - 10000 ng/mL
Ethosuximide Zarontin®	mcg/mL	5.0	Usual antiepileptic range: 40 - 100 mcg/mL.
Ethotoin Peganone®	mcg/mL	2.0	Usual antiepileptic range: 6 - 20 mcg/mL.
Ethylecgonine Cocaethylene Metabolite	ng/mL	100	
Ethylmorphine Dionin	ng/mL	300	

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Compound Name / Alias	Units	RL	Reference Comment
Etodolac (Methyl Artifact)	ng/mL		
Etodolac Breakdown	ng/mL		
Etomidate Amidate®	ng/mL	100	Plasma levels required to induce anesthesia are approximately 2000 ng/mL, but hypnosis is maintained with concentrations greater than 230 ng/mL.
Felodipine Plendil®	ng/mL	250	The most effective antihypertensive range: 1.9 - 4.2 ng/mL.
Fenfluramine Pondimin®	ng/mL	20	During chronic appetite control range: 35 - 300 ng/mL. Optimal anoretic levels: Greater than 200 ng/mL.
Fenoprofen (Methyl Artifact)	ng/mL		
Fentanyl Duragesic®; Sublimaze®	ng/mL	2.5	Immediately following a single 2 mcg/kg I.V. dose: Up to 11 ng/mL, declining to 1 ng/mL after one hour. Following the application of a 100 mcg/hour transdermal patch, serum levels (after an initial lag time of approximately six hours) of 0.8 - 2.6 ng/mL were maintained for more than 24 hours after application. Peak plasma levels following a single oral transmucosal dose (Fentanyl Oralet) of 15 mcg/kg to children: 2 - 4 ng/mL at 20 minutes.
Flecainide Ecrinal®; Tambocor®	mcg/mL	0.025	Therapeutic range: 0.2 - 1.0 mcg/mL.
Fluconazole Diflucan®	ng/mL	75	
Flunitrazepam Rohypnol®	ng/mL	300	Flunitrazepam is present in plasma at a concentration of approximately 1.5 ng/mL at 24 hours after a single 2 mg oral dose.
Fluoxetine Prozac®	ng/mL	12	Daily therapy with 40 mg Fluoxetine/day: Steady-state concentration at 4 to 8 hours after dosing ranges from 91 - 302 ng/mL serum.
Fluphenazine Prolixin®	ng/mL	5.0	Steady-state antipsychotic levels following intramuscular decanoate ester dosing every 1 to 2 weeks: 0.9 - 4.0 ng/mL at a dose of 12.5 mg, 5 - 7 ng/mL at 25 mg, 5 - 17 ng/mL at 50 mg. Effective steady-state antipsychotic plasma levels with oral dosing: 0.1 - 3.0 ng/mL.
Fluvoxamine Luvox®	ng/mL	12	Steady-state plasma levels following a daily regimen of 150 to 300 mg/day: 78 - 920 ng/mL (mean of 510).
Galantamine Razadyne®	ng/mL	100	
Gemfibrozil Lopid®	mcg/mL	10	Peak plasma levels occur at 1 to 2 hours following a single 600 mg oral dose and range from 15 - 25 mcg/mL. Mean peak plasma levels following a 600 mg twice daily regimen: 16 - 21 mcg/mL at 1 to 2 hours post dose.
Glutethimide Doriden®	mcg/mL	1.0	Usual sedative-hypnotic range: 2 - 6 mcg/mL.
Guaifenesin Glyceryl Guaiacolate	mcg/mL	5.0	Following a single 600 mg oral dose: Peak blood concentrations averaged 1.4 mcg/mL at 15 minutes post dose. Half-life in blood: 60 minutes.

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Compound Name / Alias	Units	RL	Reference Comment
Haloperidol Haldol®	ng/mL	50	Steady-state antipsychotic plasma concentration during daily regimen of 1 to 90 mg/day: 0.5 - 120 ng/mL (mean, 6 ng/mL). Blood to plasma ratio: 0.79.
Hexobarbital Sombulex®	mcg/mL	0.2	The therapeutic concentration in plasma is usually in the range of 1 - 5 mcg/mL. Following a single oral 500 mg dose, peak plasma concentrations of 4.9 - 10.9 mcg/mL were reported in approximately 1 hour. Potentially toxic at plasma concentrations greater than 8 mcg/mL.
Hydrastine	ng/mL	500	
Hydroxybupropion Bupropion Metabolite	ng/mL	40	Juvenile patients taking once daily, extended release bupropion for two weeks had the following peak plasma levels: 100 mg/day (n = 11), 450 +/- 210 ng/mL hydroxybupropion 200 mg/day (n = 8), 710 +/- 350 ng/mL hydroxybupropion The ratio of whole blood concentration to serum or plasma concentration is unknown for this analyte.
Hydroxychloroquine Plaquenil®	mcg/mL	0.1	
Hydroxycotinine Cotinine Metabolite	ng/mL	750	
Hydroxyzine Vistaril®	ng/mL	6.2	Peak level following a single 100 mg oral dose: Up to 80 ng/mL.
Ibuprofen Motrin®	mcg/mL	10	Therapeutic: 10 - 50 mcg/mL. Toxic: Greater than 100 mcg/mL.
Imipramine Tofranil®	ng/mL	25	
Ketamine Ketalar®	ng/mL	37	Reported levels during anesthesia: 500 - 6500 ng/mL.
Lamotrigine Lamictal®	mcg/mL	0.4	Therapeutic range: 3 - 14 mcg/mL.
Laudanosine Atracurium Metabolite	ng/mL	2000	
Leucocrystal Violet	ng/mL	10	
Leucocrystal Violet Artifact	ng/mL		
Levamisole Ergamisol®; Levasole®	ng/mL	5.0	
Levetiracetam Keppra®	mcg/mL	1.0	Steady-state trough serum or plasma levels following doses of 1000 to 3000 mg/day: 3 - 37 mcg/mL. The same dosage regimen will typically result in peak levels of 10 - 60 mcg/mL, at approximately 1.5 hours post dose.
Lidocaine Xylocaine®	mcg/mL	0.1	Reported antiarrhythmic range: 2 - 5 mcg/mL.
Loratadine Alavert®; Claritin®	ng/mL	40	
Lorcainide	ng/mL	20	
Loxapine Loxitane®	ng/mL	12	Reported levels following 250 mg/day: Approximately 70 ng/mL.

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Compound Name / Alias	Units	RL	Reference Comment
Maprotiline Ludiomil®	ng/mL	10	Following daily oral doses of 50, 100 and 150 mg, the steady-state mean blood concentrations were 70, 140 and 220 ng/mL respectively.
Mazindol Mazanor; Sanorex	ng/mL	50	
MBDB Eden	ng/mL	50	
Meclizine Antivert®	ng/mL	6.2	Following a single 25 mg oral dose to one patient: Approximately 85 ng/mL at 4 hours post dose (peak), and less than 10 ng/mL at 24 hours post dose.
Mefloquine Lariam®	ng/mL	100	Steady-state whole blood concentrations following a weekly regimen of 125 mg/week: 310 - 470 ng/mL peak at 6 hours post dose and 130 - 240 ng/mL at trough. Steady-state whole blood concentrations following a weekly regimen of 250 mg/week: 110 - 1000 ng/mL peak at 6 hours post dose and 333 - 640 ng/mL at trough.
Memantine	ng/mL	20	
Meperidine Demerol®	mcg/mL	0.025	
Mephentermine	ng/mL	20	
Mephenytoin Mesantoin®	mcg/mL	0.5	
Mephobarbital Mebaral®			Oral daily doses of 100 - 400 mg resulted in plasma concentrations ranging from 0.5 - 1.7 mcg/mL.
Mepivacaine Carbocaine®; Polocaine®	mcg/mL	0.05	Usual local anesthetic range: 2 - 5 mcg/mL.
Meprobamate Carisoprodol Metabolite	mcg/mL	1.0	Usual therapeutic range: 10 - 30 mcg/mL.
Mescaline	ng/mL	10	
Mesoridazine Serentil®	ng/mL	200	Therapeutic range: 100 - 1400 ng/mL.
Metaxalone Skelaxin®	mcg/mL	1.0	
Methadone Dolophine®	ng/mL	50	Usual narcotic stabilization range: 50 - 1000 ng/mL.
Methamphetamine	ng/mL	20	Therapeutic Range (treatment of Obesity and Attention Deficit Disorder) following a 12.5 mg oral dose: Mean peak blood concentrations were 20 ng/mL at 2.5 hours. This test reports Methamphetamine as the total of the undifferentiated d and l enantiomers. The ratio of these enantiomers is important in determining whether the source of Methamphetamine is from over the counter medications, prescribed medication or controlled substances. Call lab for further information on d to l enantiomer ratio determination.
Methapyrilene	ng/mL	100	Peak plasma levels following a single 50 mg oral dose: Up to 50 ng/mL at 1.5 hours post dose with no apparent sedation.
Methaqualone Quaalude	mcg/mL	0.1	Reported blood levels associated with: Erratic driving: 2 - 12 mcg/mL Mild Toxicity: 2 - 16 mcg/mL Unconsciousness: Greater than 8 mcg/mL

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Compound Name / Alias	Units	RL	Reference Comment
Metharbital Gemonil®	ng/mL		
Methcathinone CAT	ng/mL	20	
Methdilazine Tacaryl®	ng/mL	20	
Methocarbamol Robaxin®	mcg/mL	0.2	Peak levels 1 to 2 hours following a single oral dose: 2 g: 26 mcg/mL 4 g: 41 mcg/mL
Methohexital Brevital®	mcg/mL	0.2	
Methorphan Coricidin; DXM; Dex	ng/mL	12	
Methotrimeprazine Levoprome®	ng/mL	50	Following daily oral doses of 300 to 400 mg, steady-state plasma concentrations of 50 - 140 ng/mL (mean 80) were reported.
Methsuximide Celontin®	mcg/mL	0.5	
Methylecgonine Cocaine Metabolite	ng/mL	100	
MDA Adam; Methylenedioxyamphetamine	ng/mL	50	Methylenedioxyamphetamine (MDA) is a drug as well as a metabolite of both Methylenedioxymethamphetamine (MDMA) and Methylenedioxyethylamphetamine (MDEA). Expected blood or plasma concentrations after common doses of MDA are not available; but by analogy with Amphetamine are probably less than 400 ng/mL.
MDEA Eve; Methylenedioxyethylamphetamine	ng/mL	10	A single oral 140 mg dose given to 6 adults produced peak plasma concentrations that averaged 260 ng/mL at 2.2 hours.
MDMA Ecstasy; Methylenedioxymethamphetamine	ng/mL	50	Following a single 50 mg oral dose, the mean peak plasma concentration was 110 ng/mL at 2 hours.
Methylephedrine	ng/mL	10	
Methylphenidate Ritalin®	ng/mL	50	Peak plasma concentrations of 8 - 22 ng/mL are usual at 1 to 2 hours following 10 to 20 mg oral pediatric anti-hyperkinetic doses.
Methylprimidone	ng/mL	150	
Methylpropylsuccinimide	ng/mL	75	
Methyprylon Noludar®	ng/mL	100	Usual hypno-sedative range: 10000 - 20000 ng/mL.
Metoclopramide Reglan®	ng/mL	62	Peak plasma levels 1 to 2 hours following a single oral dose: 10 mg: 30 - 40 ng/mL 20 mg: 70 - 90 ng/mL
Metoprolol Lopressor®	ng/mL	500	Following oral administration of multiple doses of Metoprolol Tartrate (50 to 80 mg 3 times daily) peak plasma concentrations range from 20 - 340 ng/mL.
Mexiletine Mexitil®	mcg/mL	0.02	Usual antiarrhythmic range: 0.7 - 2.5 mcg/mL.
Mianserin Tolvon®	ng/mL	100	

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Compound Name / Alias	Units	RL	Reference Comment
Mirtazapine Remeron®	ng/mL	12	Steady-state peak (0.7 to 4.8 hours post-dose) and trough plasma concentrations following a daily regimen: 15 mg/day: 27 - 51 ng/mL peak; 4.3 - 12 ng/mL trough 30 mg/day: 56 - 104 ng/mL peak; 11 - 25 ng/mL trough 45 mg/day: 84 - 142 ng/mL peak; 17 - 39 ng/mL trough 60 mg/day: 117 - 199 ng/mL peak; 24 - 52 ng/mL trough 75 mg/day: 137 - 225 ng/mL peak; 28 - 64 ng/mL trough Elimination half-life: 20 to 40 hours.
Molindone Moban®	ng/mL	200	Steady-state plasma levels from patients on doses of 100 to 400 mg/day: 39 - 374 ng/mL, with high interpatient variability.
Monoethylglycinexylidide (MEGX) Lidocaine Metabolite	mcg/mL	0.5	
N-Acetylprocainamide NAPA	ng/mL	1000	
Naltrexone Depade®; ReVia®; Trexan®; Vivitrol®	ng/mL	300	Peak plasma concentrations following a single oral dose of 100 mg: 10 - 60 ng Naltrexone/mL (mean 40 ng/mL) at 1 to 4 hours post dose.
Naproxen Naprosyn®	mcg/mL	50	Anti-inflammatory or analgesic range: 30 - 90 mcg/mL.
Naproxen (Methyl Artifact)	ng/mL		
N-Desmethylselegiline	ng/mL	20	
N-Ethylamphetamine	ng/mL	20	
Nevirapine Viramune®	ng/mL	100	
Nicardipine Cardene®	mcg/mL	1.0	Therapeutic serum levels: 0.028 - 0.050 mcg/mL.
Nicotine	ng/mL	12	Nicotine concentrations from use of tobacco products and/or nicotine replacement therapy: 5 - 50 ng/mL.
Nifedipine Procardia®	ng/mL	100	Reported therapeutic range: 25 - 100 ng/mL.
Norclozapine Clozapine Metabolite	ng/mL	500	The rate of formation and biologic activity of Clozapine metabolites have not been fully elucidated. One study of patients dosed with 400 mg Clozapine daily for 4 weeks showed that patients were most likely to respond to therapy when plasma concentrations of Clozapine plus Norclozapine (limited activity) totaled at least 450 ng/mL.
Norcodeine Codeine Metabolite	ng/mL	50	
Norcyclobenzaprine Cyclobenzaprine Metabolite	ng/mL	10	
Norfenfluramine Fenfluramine Metabolite	ng/mL	10	Steady-state Norfenfluramine plasma concentrations following daily doses of 60 to 160 mg (average = 142 mg) of Fenfluramine: 22 - 144 ng/mL (average = 72 ng/mL).
Norfentanyl Fentanyl Metabolite	ng/mL	2.5	
Norfluoxetine Fluoxetine Metabolite	ng/mL	12	Daily therapy with 40 mg Fluoxetine/day: Steady-state concentration at 4 to 8 hours after dosing ranges from 72 - 258 ng/mL serum.

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Compound Name / Alias	Units	RL	Reference Comment
Norhydroxyzine Hydroxyzine Metabolite	ng/mL	20	
Norketamine Ketamine Metabolite	ng/mL	37	The intravenous administration of 2 mg/kg of Ketamine followed by continuous infusion of 41 mcg/kg/minute produced an average steady-state plasma concentration of 2200 ng Ketamine/mL and an average peak Norketamine level of 1050 ng/mL which occurred near the end of the 3 hour infusion.
Normeperidine Meperidine Metabolite	ng/mL	12	Expected analgesic range: 100 - 600 ng Meperidine/mL. Normeperidine concentrations: Up to 500 ng/mL.
Normethsuximide Methsuximide Metabolite	mcg/mL	5.0	Usual therapeutic range: 10 - 40 mcg/mL.
Noroxycodone Oxycodone Metabolite	ng/mL	50	
Norpropoxypheneamide	mcg/mL	0.5	
Nortriptyline Amitriptyline Metabolite; Aventyl®; Pamelor®	ng/mL	12	Nortriptyline is a metabolite of Amitriptyline and is also available as an independent therapeutic agent. When Amitriptyline is the administered drug: Usual therapeutic range for the total of Amitriptyline plus Nortriptyline: 80 - 250 ng/mL. When Nortriptyline is the administered drug: Usual therapeutic range: 50 - 150 ng/mL.
O-Desmethylvenlafaxine Desvenlafaxine; Pristiq®; Venlafaxine Metabolite	mcg/mL	15	Steady-state peak plasma levels following a daily regimen of Venlafaxine occur at approximately 2.5 hours for O-Desmethylvenlafaxine: 0.094 - 0.200 mcg/mL (75 mg/day), 0.085 - 0.472 mcg/mL (150 mg/day), 0.243 - 0.515 mcg/mL (225 mg/day), 0.390 - 1.096 mcg/mL (450 mg/day). Steady-state trough plasma levels following a 150 mg per day regimen: 0.065 - 0.300 mcg/mL.
Olanzapine Zyprexa®	ng/mL	200	Proposed therapeutic range: 5.0 - 75 ng/mL.
Orphenadrine Flexon; Norflex	ng/mL	12	During chronic oral muscle relaxing 300 mg/day: 100 - 200 ng/mL.
Oxcarbazepine Trileptal®	mcg/mL	1.0	
Oxcarbazepine Breakdown	mcg/mL		
Oxybutynin Ditropan®	ng/mL	2.0	Expected plasma levels following a daily regimen of 5 mg t.i.d.: 1 - 9 ng/mL.
Oxymetazoline Afrin	mcg/mL	1.0	
Papaverine Cerespan®	mcg/mL	0.05	Concentrations as high as 4 mcg/mL have been observed 2 hours after the ingestion of 300 mg.
Para-Methoxy-Amphetamine PMA; para-methoxyamphetamine	ng/mL	20	
Paroxetine Paxil®	ng/mL	12	Trough steady-state Plasma levels in adult patients have great inter-individual variability. The following steady-state data is from patients on a daily single dose regimen and represent the mean +/- 1 SD: 49 +/- 26 ng/mL (20 mg/day), 86 +/- 61 ng/mL (30 mg/day), 129 +/- 86 ng/mL (40 mg/day), 117 +/- 90 ng/mL (50 mg/day).

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Compound Name / Alias	Units	RL	Reference Comment
Pentazocine Talwin®	ng/mL	10	Following a 75 mg oral dose, peak plasma concentrations averaged 160 ng/mL in 2 to 3 hours. Following a 45 mg IM dose, peak plasma concentrations averaged 140 ng/mL within 60 minutes. Plasma concentrations in surgical patients (5 to 10 minutes after IV injection) may be between 200 - 1000 ng/mL.
Pentobarbital			Peak serum concentrations of 1.2 - 3.1 mcg/mL were produced 0.5 - 2.0 hours after a 100 mg oral dose and peak serum concentrations of 3 mcg/mL were produced 6 min. following a 100 mg IV dose. Potentially toxic at blood concentrations greater than 10 mcg/mL.
Pentoxifylline Trental®	mcg/mL	0.04	Following a single oral 400 mg conventional tablet, peak plasma levels were 1.3 mcg/mL at 0.8 hours post dose. Following a single 400 mg extended-release tablet, plasma levels were approximately 0.1 mcg/mL at 2 to 4 hours and about 0.06 mcg/mL at 4 to 8 hours post dose.
Pentoxifylline Artifact	mcg/mL		
Pergolide Permax®	ng/mL	20	Peak plasma levels are probably less than 1 ng/mL.
Phenacetin	mcg/mL	0.1	Following a single 650 mg oral dose: Up to 2.2 mcg/mL.
Phencyclidine Angel Dust; PCP; Sherm			
Phendimetrazine Bontril®; Prelu-2®	ng/mL	50	Following a single 35 mg oral dose (immediate-release preparation), serum concentrations averaged 90 ng/mL at 1 hour. Following a single 105 mg oral dose (sustained-release preparation), the mean peak serum concentration was 52 ng/mL at 1 hour.
Pheniramine	ng/mL	20	Expected peak level following a single 75 mg oral antihistaminic dose: 190 ng/mL.
Phenmetrazine Preludin®	ng/mL	50	Phenmetrazine is a drug as well as the metabolite of Phendimetrazine. Following a single 75 mg oral dose, mean peak plasma concentrations were reported to be 130 ng/mL at 2 hours, declining to 60 ng/mL after 12 hours.
Phenobarbital Luminal®			Serum/plasma concentrations of 10 - 30 mcg/mL are generally considered desirable when given as an anticonvulsant. A blood/plasma ratio of 0.81 has been reported.
Phensuximide Milontin®	mcg/mL	2.0	During chronic oral anti-epileptic doses of 3 grams/day: 4 - 8 mcg/mL.
Phentermine Adipex-P®; Ionamin®; Pro-Fast®	ng/mL	50	A single 26 mg/70 kg oral dose produced a mean peak blood concentration of 90 ng/mL at 4 hours, declining to 30 ng/mL after 40 hours. Adults receiving 30 mg daily oral doses for 2 weeks achieved a mean steady-state plasma concentration of 360 ng/mL (range 180 to 510 ng/mL).
Phenylbutazone	mcg/mL	0.05	Therapeutic range: 50 - 100 mcg/mL.

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New Tests

Compound Name / Alias	Units	RL	Reference Comment
Phenylethylmalonamide (PEMA)	mcg/mL	1.0	Following a 1000 mg primidone daily regimen: 7 - 10 mcg PEMA/mL.
Phenyltoloxamine Novagesic®	ng/mL	6.2	Following a single oral 200 mg dose: Average is approximately 50 ng/mL.
Phenytoin Dilantin®	mcg/mL	1.0	Antiepileptic range: 10 - 20 mcg/mL.
Prazepam Centrax®	ng/mL	200	
Primidone Mysoline®	mcg/mL	1.0	Antiepileptic range: 5 - 12 mcg/mL.
Procainamide Procan® SR	mcg/mL	1.0	
Procaine Novocaine®	mcg/mL	0.1	
Prochlorperazine Compazine®	ng/mL	2.5	Following a single 12.5 mg oral tranquilizing dose: Up to approximately 1 ng/mL.
Procyclidine Kemadrin®	ng/mL	10	Steady-state concentrations following chronic oral 10 to 30 mg dose: 150 - 630 ng/mL.
Promazine Sparine®	ng/mL	20	Following a 100 mg oral dose, mean peak plasma concentration was 137 ng/mL at 1.5 hours, declining with an average half-life of 13 hours.
Promethazine Phenergan®	ng/mL	30	Following a single 50 mg oral dose: Up to 23 ng/mL.
Propafenone Rythmol®	mcg/mL	4.0	Trough plasma levels of 0.2 - 1.5 mcg/mL provide good suppression of ventricular ectopic activity, with higher concentrations giving a better rate of response.
Propofol Diprivan®	mcg/mL	0.02	Patients required a mean blood propofol concentration of 4.05 +/- 1.01 mcg/mL for major surgery and 2.97 +/- 1.07 mcg/mL for non-major surgery. Blood propofol concentrations at which 50% of patients were awake and oriented after surgery were 1.07 and 0.95 mcg/mL respectively. Psychomotor performance returned to baseline at blood propofol concentrations of 0.38 - 0.43 mcg/mL.
Propoxyphene Darvon®			Average serum concentrations following a daily regimen of 195 mg Propoxyphene: 0.42 mcg Propoxyphene/mL.
Protriptyline Vivactil®	ng/mL	10	Usual antidepressant range: 70 - 250 ng/mL.
Pyrilamine Mepyramine	ng/mL	200	
Pyrimethamine Daraprim®	ng/mL	40	A single oral dose of 50 mg given to 5 subjects produced a peak plasma concentration of 210 - 430 ng/mL in 2 to 4 hours following the dose.
Quetiapine Seroquel®	ng/mL	62	Steady-state peak (1.0 to 1.5 hours) plasma levels following a t.i.d. daily regimen: 286 ng/mL (225 mg/day) 598 ng/mL (450 mg/day) 828 ng/mL (750 mg/day) The plasma half-life is approximately 6 hours.
Quinidine	mcg/mL	0.05	Usual therapeutic range: 2 - 6 mcg/mL. Toxicity generally seen at concentrations greater than 8 mcg/mL.
Quinine	mcg/mL	0.05	

New Tests and Test Updates

New Tests

Compound Name / Alias	Units	RL	Reference Comment
Ramelteon Rozerem®	ng/mL	10	
Reboxetine Edronax®; Vestra®	ng/mL	20	
Ropinirole Requip XL®; Requip®	ng/mL	10	Ropinirole (Requip®) is a dopamine receptor agonist that is indicated for the treatment of the signs and symptoms of Parkinson's disease and for the treatment of moderate-to-severe primary Restless Legs Syndrome (RLS, also known as Ekbom Syndrome).
Ropivacaine Naropin®	mcg/mL	0.03	Following epidural administration 10 mg/hr, 20 mg/hr and 30 mg/hr, mean plasma concentration of 0.39, 0.88, 1.19 mcg/mL at 21 hours respectively. Bolus I.V. administration 84 mg/70 kg and 131 mg/70 kg, peak plasma concentrations of 1.1 and 1.7 mcg/mL at 2 minutes respectively.
Scopolamine Maldemar®; Transderm-V®	ng/mL	100	Following a single 0.906 mg oral dose, a peak concentration of about 2 ng/mL was reached within 1 hour.
Secobarbital Seconal®			A 3.3 mg/kg oral dose (approx. 230 mg/70 kg) produced a mean peak blood concentration of 2.0 mcg/mL (range, 1.8 - 2.2 mcg/mL) at 3 hours, diminishing to 1.3 mcg/mL by 20 hours and 0.8 mcg/mL by 40 hours. Potentially toxic at blood concentrations greater than 8 mcg/mL.
Selegiline Eldepryl®	ng/mL	20	A 10 mg oral dose given to 10 adults produced a mean peak plasma concentration of less than 10 ng/mL at 0.9 hours.
Sertraline Zoloft®	ng/mL	12	Following single oral doses of 50, 100, 200, 300 and 400 mg, the peak plasma levels were 9.5, 16, 56, 78, and 88 ng/mL, respectively, and occurred at 6 to 10 hours post dose. Mean peak steady-state plasma levels following daily regimens of 50, 100, 150 and 200 mg/day were 32, 54, 144 and 190 ng/mL, respectively, and occurred at 4.5 to 8.4 hours following the last dose.
Strychnine	ng/mL	50	Potentially lethal concentrations are in excess of 500 ng/mL.
Sufentanil Sufenta®	ng/mL	10	Following I.V. administration of 30 mcg Sufentanil/kg for surgical analgesia, mean peak plasma levels range from 36 - 43 ng/mL and decline to 0.33 ng/mL at 23 hours. Terminal plasma elimination half-life (average = 2.7 hours) occurs at 2 hours post dose. Reported analgesic range: 0.05 - 0.3 ng/mL.
Talbutal Lotusate®	mcg/mL	0.2	
Tamoxifen Nolvadex®	ng/mL	10	Tamoxifen undergoes demethylation to N-desmethyltamoxifen and tamoxifen and N-desmethyltamoxifen are hydroxylated to 4-hydroxytamoxifen and 4-hydroxy-N-desmethyltamoxifen (endoxifen), respectively. Tamoxifen is a prodrug; the pharmacological effects are mediated through its hydroxylated metabolites. A dose-concentration relationship has been identified for tamoxifen. In patients receiving 1, 5, or 20 mg/day tamoxifen for 28 days, mean (range) plasma tamoxifen concentrations were: 1 mg/day = 7.5 (2.9 - 120.9) ng/mL 5 mg/day = 25.2 (1.9 - 180.9) ng/mL 20 mg/day = 83.6 (8.7 - 134.4) ng/mL. The ratio of whole blood concentration to serum or plasma concentration is unknown for this analyte

New Tests and Test Updates

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Compound Name / Alias	Units	RL	Reference Comment
Terbinafine Lamisil®	mcg/mL	0.01	
Tetracaine Pontocaine®	mcg/mL	2.0	
Tetrahydrozoline Visine®	ng/mL	10	
Thenyldiamine	ng/mL		
Theobromine Xantheose	mcg/mL	5.0	Mean plasma levels following a single 10 mg/kg oral dose: 9.8 mcg/mL at 2.1 hours post dose; falling to 5.8 mcg/mL at 6 hours post dose.
Theophylline Aminophylline	mcg/mL	0.5	Usual therapeutic range: 10 - 20 mcg/mL.
Thiamylal Surital®	mcg/mL	2.0	
Thiopental Pentothal®	mcg/mL	1.0	Hypnotic range: 1 - 5 mcg/mL Therapeutic coma: 30 - 100 mcg/mL Anesthesia: 7 - 130 mcg/mL
Thioridazine Mellaril®	ng/mL	200	Steady-state serum concentration during chronic oral administration of 400 mg daily: 140 - 2600 ng/mL. Therapeutic steady-state concentrations may overlap levels associated with toxicity.
Thiothixene Navane®	ng/mL	100	
Ticlopidine Ticlid®	mcg/mL	0.02	Steady state peak plasma levels from patients on a 250 mg twice daily regimen: 0.22 - 2.1 mcg/mL (mean of 0.99) at 2 hours post dose.
Tiletamine Telazol®	ng/mL	40	
Timolol Blocadren®	ng/mL	10	2 hour peak level following a single 10 mg oral dose: Approximately 50 ng/mL.
Tocainide Tonocard®	ng/mL	500	Reported antiarrhythmic concentration: 4000 - 10000 ng/mL.
Tramadol Ultram®; Ultrex®	ng/mL	25	Peak plasma levels following a single 100 mg oral dose: 230 - 380 ng/mL. Steady-state plasma levels following a 100mg 4 times daily regimen: 420 - 770 ng/mL.
Tramadol Metabolite	ng/mL		
Tranylcypromine Parnate®	ng/mL	10	Following a single oral 30 mg dose: Up to 39 ng/mL.
Trazodone Desyrel®	mcg/mL	0.1	Therapeutic range: 0.3 - 1.5 mcg/mL.
Trazodone Metabolite	ng/mL		
Trifluoperazine Stelazine®	ng/mL	2.5	Therapeutic levels: Up to 20 ng/mL.
TFMPP Trifluoromethylphenylpiperazine	ng/mL	10	
Trihexyphenidyl Artane®	ng/mL	1.0	Usual therapeutic levels: Up to 40 ng/mL.
Trimeprazine Temaril®	ng/mL	20	Following a single oral antipruritic 5 mg dose: Up to 2 ng/mL.

New Tests and Test Updates

New Tests

Compound Name / Alias	Units	RL	Reference Comment
Trimethobenzamide Tigan®	mcg/mL	0.1	Following a single oral 250 mg dose: Up to 2.4 mcg/mL.
Trimethoprim Proloprim®; Trimpex®	mcg/mL	1.0	Steady-state trough serum levels following a regimen of 160 mg every 12 hours: 1.2 - 3.2 mcg/mL. Steady-state maximum plasma levels following a regimen of 300 mg once daily: 3.1 - 9.5 mcg/mL at 1 to 4 hours post dose.
Trimipramine Surmontil®	ng/mL	10	Observed levels during chronic oral antidepressant doses of 75 to 150 mg/day: 10 - 240 ng/mL.
Tripelennamine Pyribenzamine	ng/mL	20	Following a single oral 100 mg dose: Up to 60 ng/mL.
Triprolidine Actidil®	ng/mL	1.0	2 hours following a single oral 3.75 mg dose (in syrup) the mean plasma level was 8.2 ng/mL.
Venlafaxine Effexor®	ng/mL	12	Steady-state peak plasma levels following a daily regimen occur at 2 hours for Venlafaxine: 35 - 79 ng/mL (75 mg/day), 93 - 334 ng/mL (150 mg/day), 68 - 265 ng/mL (225 mg/day), 196 - 597 ng/mL (450 mg/day). Steady-state trough plasma concentrations following a 150 mg per day regimen: 0 - 141 ng/mL.
Venlafaxine Metabolite	mcg/mL	10	
Verapamil Calan®; Isoptin®	ng/mL	25	Probable therapeutic range: 70 - 350 ng/mL. Two to three fold greater plasma Verapamil concentrations are required after oral dosing, as compared to I.V. dosing, to elicit the same increase in a-v conduction time.
Warfarin Coumadin	mcg/mL	50	Usual therapeutic range: 2 - 8 mcg/mL.
Xylazine Rompum®	mcg/mL	0.4	
Yohimbine	ng/mL	100	Peak blood level following a single 9 mg oral dose Approximately 45 ng/mL.
Zaleplon Sonata®	ng/mL	50	Zaleplon is a short-acting hypnotic agent used for the treatment of insomnia. Peak plasma levels 1 hour following a single 10 or 20 mg oral dose are 26 and 49 ng/mL, respectively. The drug has an elimination half-life of approximately 1 hour.
Zolazepam Flupyrazapon®	ng/mL	100	
Zolpidem Ambien®	ng/mL	12	Plasma concentrations following single oral 5 mg and 10 mg immediate release doses range from 29 - 110 ng/mL (mean, 59 ng/mL) and 58 - 270 ng/mL (mean, 120 ng/mL), respectively, occurring at a mean time of 1.6 hrs. Peak plasma concentrations following a single oral 12.5 mg extended release dose ranged from 69 - 190 ng/mL (mean = 130 ng/mL) occurring at a mean time of 1.5 hrs. The ratio of whole blood concentration to serum or plasma concentration is unknown for this analyte.
Zonisamide Zonegran®	mcg/mL	15	Antiepileptic range: 10 - 40 mcg/mL.

New Tests and Test Updates

New Tests

Compound Name / Alias	Units	RL	Reference Comment
Zotepine Nipolept®	ng/mL	100	

Other Findings

4155B Sativex®, Blood — Effective Immediately

Scope of Analysis:	11-Hydroxy Delta-9 THC [GC-GC-GC/MS], Cannabidiol [GC-GC-GC/MS], Cannabinoids [ELISA], Delta-9 Carboxy THC [GC-GC-GC/MS], Delta-9 THC [GC-GC-GC/MS]
Method(s):	Enzyme-Linked Immunosorbent Assay (ELISA) Multi-dimensional Gas Chromatography/Mass Spectrometry (GC-GC-GC/MS)
Purpose:	Therapeutic Drug Monitoring
Category:	Hallucinogen
Specimen Requirements:	3 mL Blood
Minimum Volume:	1.1 mL
Special Handling:	None
Specimen Container:	Lavender top tube (EDTA)
Transport Temperature:	Refrigerated
Light Protection:	Not Required
Rejection Criteria:	Received Room Temperature.
Stability:	Room Temperature: 2 day(s) Refrigerated: 14 day(s) Frozen (-20 °C): 14 day(s)

Method: Enzyme-Linked Immunosorbent Assay (ELISA)

Set-Up Days / TAT: Monday-Saturday 2nd Shift 1 day (after set-up)
CPT Code: 80101

Compound Name / Alias	Units	RL	Reference Comment
Cannabinoids	ng/mL	10	

Method: Multi-dimensional Gas Chromatography/Mass Spectrometry (GC-GC-GC/MS)

Set-Up Days / TAT: Monday-Friday 2nd Shift 4 days (after set-up)
CPT Code: 82542

Compound Name / Alias	Units	RL	Reference Comment
Delta-9 THC Active Ingredient of Sativex®	ng/mL	1.0	Mean peak plasma concentrations of Delta-9 THC following dosing with Sativex® at a low dose (5.4 mg of Delta-9 THC and 5.0 mg of Cannabidiol) at 3 to 4 hours post-dose were 5.1 +/- 1.0 ng/mL. Mean peak plasma concentrations of Delta-9 THC following dosing with Sativex® at a high dose (16 mg of Delta-9 THC and 15 mg of Cannabidiol) at 3 - 4 hours post-dose were 15 +/- 3.4 ng/mL. The ratio of whole blood concentration to plasma concentration for Delta-9 THC is approximately 0.50 to 0.60.
Delta-9 Carboxy THC Inactive metabolite of Delta-9 THC	ng/mL	5.0	Usual peak levels in serum for 1.75 or 3.55% THC marijuana cigarettes: 10 - 101 ng/mL about 32 to 240 minutes after beginning smoking, with a slow decline. Usually not detectable after passive inhalation.
11-Hydroxy Delta-9 THC Active metabolite of Delta-9 THC	ng/mL	5.0	Usual peak levels: Less than 10% of THC levels after smoking.

New Tests and Test Updates

New Tests

Compound Name / Alias	Units	RL	Reference Comment
Cannabidiol Active component of Sativex®	ng/mL	1.0	Mean peak plasma concentrations of Cannabidiol following dosing with Sativex® at a low dose (5.4 mg of Delta-9 THC and 5.0 mg of Cannabidiol) at 3 - 4 hours post-dose were 1.6 +/- 0.4 ng/mL. Mean peak plasma concentrations of Cannabidiol following dosing with Sativex® at a high dose (16 mg of Delta-9 THC and 15 mg of Cannabidiol) at 3 - 4 hours post-dose were 6.7 +/- 2.0 ng/mL. The ratio of whole blood concentration to plasma concentration is unknown for this analyte. Note: marijuana and Sativex® both contain Delta-9 THC and Cannabidiol; therefore, this test may not be able to differentiate between the two.

4155SP Sativex®, Serum/Plasma **Effective Immediately**

Scope of Analysis:	11-Hydroxy Delta-9 THC [GC-GC-GC/MS], Cannabidiol [GC-GC-GC/MS], Cannabinoids [ELISA], Delta-9 Carboxy THC [GC-GC-GC/MS], Delta-9 THC [GC-GC-GC/MS]
Method(s):	Enzyme-Linked Immunosorbent Assay (ELISA) Multi-dimensional Gas Chromatography/Mass Spectrometry (GC-GC-GC/MS)
Purpose:	Therapeutic Drug Monitoring
Category:	Hallucinogen
Specimen Requirements:	3 mL Serum or Plasma
Minimum Volume:	1.1 mL
Special Handling:	Serum: Collect sample in Red top tube Plasma: Collect sample in Lavender top tube (EDTA) or Pink top tube. Promptly centrifuge and separate Serum or Plasma into a plastic screw capped vial using approved guidelines.
Specimen Container:	Plastic container (preservative-free)
Transport Temperature:	Refrigerated
Light Protection:	Not Required
Rejection Criteria:	Polymer gel separation tube (SST or PST).
Stability:	Room Temperature: 7 day(s) Refrigerated: 14 day(s) Frozen (-20 °C): 30 day(s)

Method: Enzyme-Linked Immunosorbent Assay (ELISA)

Set-Up Days / TAT: Monday-Saturday 2nd Shift 1 day (after set-up)

CPT Code: 80101

Compound Name / Alias	Units	RL	Reference Comment
Cannabinoids	ng/mL	10	

Method: Multi-dimensional Gas Chromatography/Mass Spectrometry (GC-GC-GC/MS)

Set-Up Days / TAT: Monday-Friday 2nd Shift 4 days (after set-up)

CPT Code: 82542

Compound Name / Alias	Units	RL	Reference Comment
Delta-9 THC Active component of Sativex®	ng/mL	1.0	Mean peak plasma concentrations of Delta-9 THC following dosing with Sativex® at a low dose (5.4 mg of Delta-9 THC and 5.0 mg of Cannabidiol) at 3 - 4 hours post-dose were 5.1 +/- 1.0 ng/mL. Mean peak plasma concentrations of Delta-9 THC following dosing with Sativex® at a high dose (16 mg of Delta-9 THC and 15 mg of Cannabidiol) at 3 to 4 hours post-dose were 15 +/- 3.4 ng/mL.

New Tests and Test Updates

New Tests

Compound Name / Alias	Units	RL	Reference Comment
Delta-9 Carboxy THC Inactive metabolite of Delta-9 THC	ng/mL	5.0	Usual peak levels in serum for 1.75 or 3.55% THC marijuana cigarettes: 10 - 101 ng/mL about 32 to 240 minutes after beginning smoking, with a slow decline. Usually not detectable after passive inhalation.
11-Hydroxy Delta-9 THC Active metabolite of Delta-9 THC	ng/mL	5.0	Usual peak levels: Less than 10% of THC levels after smoking.
Cannabidiol Active component of Sativex®	ng/mL	1.0	Mean peak plasma concentrations of Cannabidiol following dosing with Sativex® at a low dose (5.4 mg of Delta-9 THC and 5.0 mg of Cannabidiol) at 3 - 4 hours post-dose were 1.6 +/- 0.4 ng/mL. Mean peak plasma concentrations of Cannabidiol following dosing with Sativex® at a high dose (16 mg of Delta-9 THC and 15 mg of Cannabidiol) at 3 - 4 hours post-dose were 6.7 +/- 2.0 ng/mL. Note: marijuana and Sativex® both contain Delta-9 THC and Cannabidiol; therefore, this test may not be able to differentiate between the two.

9567OF Synthetic Cannabinoids (Qualitative) Screen, Oral Fluid — Effective Immediately

Scope of Analysis:	AM-2201 [LC-MS/MS], AM-694 [LC-MS/MS], JWH-018 [LC-MS/MS], JWH-019 [LC-MS/MS], JWH-073 [LC-MS/MS], JWH-081 [LC-MS/MS], JWH-122 [LC-MS/MS], JWH-200 [LC-MS/MS], JWH-210 [LC-MS/MS], JWH-250 [LC-MS/MS], RCS-4 [LC-MS/MS], RCS-8 [LC-MS/MS]
Method(s):	High Performance Liquid Chromatography/Tandem Mass Spectrometry (LC-MS/MS)
Purpose:	Exposure Monitoring/Abuse Monitoring
Category:	Synthetic Cannabinoid
Specimen Requirements:	2 mL Oral Fluid
Minimum Volume:	0.8 mL
Special Handling:	None
Specimen Container:	Oral Fluid collection device
Transport Temperature:	Refrigerated
Light Protection:	Not Required
Rejection Criteria:	None
Stability:	Room Temperature: 21 day(s) Refrigerated: 21 day(s) Frozen (-20 °C): 21 day(s)

Method: High Performance Liquid Chromatography/Tandem Mass Spectrometry (LC-MS/MS)

Set-Up Days / TAT:	Tuesday 3 days (after set-up)
CPT Code:	80100

Compound Name / Alias	Units	RL	Reference Comment
JWH-200 K2; Space; Spice; Spike; Synthetic Cannabinoids; Yucatan Fire	ng/mL		JWH-200 is one of many synthetic cannabinoid drugs. Synthetic cannabinoids interact with the same brain receptors as THC (the active drug present in marijuana) and have been demonstrated to produce similar effects. The drug is typically sprayed on botanical material and smoked, although it can be ingested in liquid or powder form. Products containing this drug are sold under a wide variety of names including (but not limited to) Spice, Potpourri, Smoke, K2, Zombie, Kush, Cloud 10, and many others. Testing for this analyte in oral fluid is qualitative only. Any amount of the drug detected in the oral fluid is reported as positive.

New Tests and Test Updates

New Tests

Compound Name / Alias	Units	RL	Reference Comment
AM-2201 K2; Space; Spice; Spike; Synthetic Cannabinoids; Yucatan Fire	ng/mL		AM-2201 is one of many synthetic cannabinoid drugs. Synthetic cannabinoids interact with the same brain receptors as THC (the active drug present in marijuana) and have been demonstrated to produce similar effects. The drug is typically sprayed on botanical material and smoked, although it can be ingested in liquid or powder form. Products containing this drug are sold under a wide variety of names including (but not limited to) Spice, Potpourri, Smoke, K2, Zombie, Kush, Cloud 10, and many others. Testing for this analyte in oral fluid is qualitative only. Any amount of the drug detected in the oral fluid is reported as positive.
JWH-250 K2; Space; Spice; Spike; Synthetic Cannabinoids; Yucatan Fire	ng/mL		JWH-250 is one of many synthetic cannabinoid drugs. Synthetic cannabinoids interact with the same brain receptors as THC (the active drug present in marijuana) and have been demonstrated to produce similar effects. The drug is typically sprayed on botanical material and smoked, although it can be ingested in liquid or powder form. Products containing this drug are sold under a wide variety of names including (but not limited to) Spice, Potpourri, Smoke, K2, Zombie, Kush, Cloud 10, and many others. Testing for this analyte in oral fluid is qualitative only. Any amount of the drug detected in the oral fluid is reported as positive.
AM-694 K2; Space; Spice; Spike; Synthetic Cannabinoids; Yucatan Fire	ng/mL		AM-694 is one of many synthetic cannabinoid drugs. Synthetic cannabinoids interact with the same brain receptors as THC (the active drug present in marijuana) and have been demonstrated to produce similar effects. The drug is typically sprayed on botanical material and smoked, although it can be ingested in liquid or powder form. Products containing this drug are sold under a wide variety of names including (but not limited to) Spice, Potpourri, Smoke, K2, Zombie, Kush, Cloud 10, and many others. Testing for this analyte in oral fluid is qualitative only. Any amount of the drug detected in the oral fluid is reported as positive.
RCS-4 K2; Space; Spice; Spike; Synthetic Cannabinoids; Yucatan Fire	ng/mL		RCS-4 is one of many synthetic cannabinoid drugs. Synthetic cannabinoids interact with the same brain receptors as THC (the active drug present in marijuana) and have been demonstrated to produce similar effects. The drug is typically sprayed on botanical material and smoked, although it can be ingested in liquid or powder form. Products containing this drug are sold under a wide variety of names including (but not limited to) Spice, Potpourri, Smoke, K2, Zombie, Kush, Cloud 10, and many others. Testing for this analyte in oral fluid is qualitative only. Any amount of the drug detected in the oral fluid is reported as positive.
JWH-073 K2; Space; Spice; Spike; Synthetic Cannabinoids; Yucatan Fire	ng/mL		JWH-073 is one of many synthetic cannabinoid drugs. Synthetic cannabinoids interact with the same brain receptors as THC (the active drug present in marijuana) and have been demonstrated to produce similar effects. The drug is typically sprayed on botanical material and smoked, although it can be ingested in liquid or powder form. Products containing this drug are sold under a wide variety of names including (but not limited to) Spice, Potpourri, Smoke, K2, Zombie, Kush, Cloud 10, and many others. Testing for this analyte in oral fluid is qualitative only. Any amount of the drug detected in the oral fluid is reported as positive.

New Tests and Test Updates

New Tests

Compound Name / Alias	Units	RL	Reference Comment
JWH-018 K2; Space; Spice; Spike; Synthetic Cannabinoids; Yucatan Fire	ng/mL		JWH-018 is one of many synthetic cannabinoid drugs. Synthetic cannabinoids interact with the same brain receptors as THC (the active drug present in marijuana) and have been demonstrated to produce similar effects. The drug is typically sprayed on botanical material and smoked, although it can be ingested in liquid or powder form. Products containing this drug are sold under a wide variety of names including (but not limited to) Spice, Potpourri, Smoke, K2, Zombie, Kush, Cloud 10, and many others. Testing for this analyte in oral fluid is qualitative only. Any amount of the drug detected in the oral fluid is reported as positive.
JWH-081 K2; Space; Spice; Spike; Synthetic Cannabinoids; Yucatan Fire	ng/mL		JWH-081 is one of many synthetic cannabinoid drugs. Synthetic cannabinoids interact with the same brain receptors as THC (the active drug present in marijuana) and have been demonstrated to produce similar effects. The drug is typically sprayed on botanical material and smoked, although it can be ingested in liquid or powder form. Products containing this drug are sold under a wide variety of names including (but not limited to) Spice, Potpourri, Smoke, K2, Zombie, Kush, Cloud 10, and many others. Testing for this analyte in oral fluid is qualitative only. Any amount of the drug detected in the oral fluid is reported as positive.
JWH-122 K2; Space; Spice; Spike; Synthetic Cannabinoids; Yucatan Fire	ng/mL		JWH-122 is one of many synthetic cannabinoid drugs. Synthetic cannabinoids interact with the same brain receptors as THC (the active drug present in marijuana) and have been demonstrated to produce similar effects. The drug is typically sprayed on botanical material and smoked, although it can be ingested in liquid or powder form. Products containing this drug are sold under a wide variety of names including (but not limited to) Spice, Potpourri, Smoke, K2, Zombie, Kush, Cloud 10, and many others. Testing for this analyte in oral fluid is qualitative only. Any amount of the drug detected in the oral fluid is reported as positive.
JWH-019 K2; Space; Spice; Spike; Synthetic Cannabinoids; Yucatan Fire	ng/mL		JWH-019 is one of many synthetic cannabinoid drugs. Synthetic cannabinoids interact with the same brain receptors as THC (the active drug present in marijuana) and have been demonstrated to produce similar effects. The drug is typically sprayed on botanical material and smoked, although it can be ingested in liquid or powder form. Products containing this drug are sold under a wide variety of names including (but not limited to) Spice, Potpourri, Smoke, K2, Zombie, Kush, Cloud 10, and many others. Testing for this analyte in oral fluid is qualitative only. Any amount of the drug detected in the oral fluid is reported as positive.
JWH-210 K2; Space; Spice; Spike; Synthetic Cannabinoids; Yucatan Fire	ng/mL		JWH-210 is one of many synthetic cannabinoid drugs. Synthetic cannabinoids interact with the same brain receptors as THC (the active drug present in marijuana) and have been demonstrated to produce similar effects. The drug is typically sprayed on botanical material and smoked, although it can be ingested in liquid or powder form. Products containing this drug are sold under a wide variety of names including (but not limited to) Spice, Potpourri, Smoke, K2, Zombie, Kush, Cloud 10, and many others. Testing for this analyte in oral fluid is qualitative only. Any amount of the drug detected in the oral fluid is reported as positive.

New Tests and Test Updates

New Tests

Compound Name / Alias	Units	RL	Reference Comment
RCS-8 K2; Space; Spice; Spike; Synthetic Cannabinoids; Yucatan Fire	ng/mL		RCS-8 is one of many synthetic cannabinoid drugs. Synthetic cannabinoids interact with the same brain receptors as THC (the active drug present in marijuana) and have been demonstrated to produce similar effects. The drug is typically sprayed on botanical material and smoked, although it can be ingested in liquid or powder form. Products containing this drug are sold under a wide variety of names including (but not limited to) Spice, Potpourri, Smoke, K2, Zombie, Kush, Cloud 10, and many others. Testing for this analyte in oral fluid is qualitative only. Any amount of the drug detected in the oral fluid is reported as positive.

New Tests and Test Updates

Test Changes

1777B Dipyridamole, Blood

Summary of Changes:	Specimen Requirements (Specimen Container) were changed.

Specimen Requirements:	1 mL Blood
Transport Temperature:	Refrigerated
Specimen Container:	Lavender top tube (EDTA)
Light Protection:	Not Required
Special Handling:	None
Rejection Criteria:	None

1777SP Dipyridamole, Serum/Plasma

Summary of Changes:	Specimen Requirements (Specimen Container) were changed. Specimen Requirements (Special Handling) were changed.

Specimen Requirements:	2 mL Serum or Plasma
Transport Temperature:	Refrigerated
Specimen Container:	Plastic container (preservative-free)
Light Protection:	Not Required
Special Handling:	Serum: Collect sample in Red top tube Plasma: Collect sample in Lavender top tube (EDTA) or Pink top tube. Promptly centrifuge and separate Serum or Plasma into a plastic screw capped vial using approved guidelines.
Rejection Criteria:	Polymer gel separation tube (SST or PST).

1777U Dipyridamole, Urine

Summary of Changes:	Specimen Requirements (Specimen Container) were changed.

Specimen Requirements:	1 mL Urine
Transport Temperature:	Refrigerated
Specimen Container:	Plastic container (preservative-free)
Light Protection:	Not Required
Special Handling:	None
Rejection Criteria:	None

2088B Flecainide, Blood

Summary of Changes:	Specimen Requirements (Specimen Container) were changed.

New Tests and Test Updates

Test Changes

Specimen Requirements: 1 mL Blood
Transport Temperature: Refrigerated
Specimen Container: Lavender top tube (EDTA)
Light Protection: Not Required
Special Handling: None
Rejection Criteria: None

2088SP Flecainide, Serum/Plasma

Summary of Changes: Specimen Requirements (Specimen Container) were changed.
Specimen Requirements (Special Handling) were changed.

Specimen Requirements: 2 mL Serum or Plasma
Transport Temperature: Refrigerated
Specimen Container: Plastic container (preservative-free)
Light Protection: Not Required
Special Handling: Serum: Collect sample in Red top tube
Plasma: Collect sample in Lavender top tube (EDTA) or Pink top tube.
Promptly centrifuge and separate Serum or Plasma into a plastic screw capped vial using approved guidelines.
Rejection Criteria: Polymer gel separation tube (SST or PST).

2088U Flecainide, Urine

Summary of Changes: Specimen Requirements (Specimen Container) were changed.

Specimen Requirements: 1 mL Urine
Transport Temperature: Refrigerated
Specimen Container: Plastic container (preservative-free)
Light Protection: Not Required
Special Handling: None
Rejection Criteria: None

3092SP Moricizine, Serum/Plasma

Summary of Changes: Specimen Requirements (Specimen Container) were changed.
Specimen Requirements (Special Handling) were changed.

New Tests and Test Updates

Test Changes

Specimen Requirements:	2 mL Serum or Plasma
Transport Temperature:	Refrigerated
Specimen Container:	Plastic container (preservative-free)
Light Protection:	Not Required
Special Handling:	Serum: Collect sample in Red top tube Plasma: Collect sample in Lavender top tube (EDTA) or Pink top tube. Promptly centrifuge and separate Serum or Plasma into a plastic screw capped vial using approved guidelines.
Rejection Criteria:	Polymer gel separation tube (SST or PST).

3092U Moricizine, Urine

Summary of Changes: Specimen Requirements (Specimen Container) were changed.

Specimen Requirements:	1 mL Urine
Transport Temperature:	Refrigerated
Specimen Container:	Plastic container (preservative-free)
Light Protection:	Not Required
Special Handling:	None
Rejection Criteria:	None

3795U Pregabalin, Urine

Summary of Changes: Specimen Requirements (Specimen Container) were changed.

Specimen Requirements:	1 mL Urine
Transport Temperature:	Refrigerated
Specimen Container:	Plastic container (preservative-free)
Light Protection:	Not Required
Special Handling:	None
Rejection Criteria:	None

3976B Propafenone, Blood

Summary of Changes: Specimen Requirements (Specimen Container) were changed.

New Tests and Test Updates

Test Changes

Specimen Requirements:	1 mL Blood
Transport Temperature:	Refrigerated
Specimen Container:	Lavender top tube (EDTA)
Light Protection:	Not Required
Special Handling:	Peak serum levels are recommended when monitoring patients because the level in the blood drops so rapidly that many negative results are found at the trough. The peak occurs at 3 to 4 hours post dose.
Rejection Criteria:	None

3976FL Propafenone, Fluid

Summary of Changes:	Specimen Requirements (Specimen Container) were changed.

Specimen Requirements:	1 mL Fluid
Transport Temperature:	Refrigerated
Specimen Container:	Plastic container (preservative-free)
Light Protection:	Not Required
Special Handling:	None
Rejection Criteria:	None

3976SP Propafenone, Serum/Plasma

Summary of Changes:	Specimen Requirements (Specimen Container) were changed. Specimen Requirements (Special Handling) were changed.

Specimen Requirements:	2 mL Serum or Plasma
Transport Temperature:	Refrigerated
Specimen Container:	Plastic container (preservative-free)
Light Protection:	Not Required
Special Handling:	Serum: Collect sample in Red top tube Plasma: Collect sample in Lavender top tube (EDTA) or Pink top tube. Peak serum levels are recommended when monitoring patients because the level in the blood drops so rapidly that many negative results are found at the trough. The peak occurs at 3 to 4 hours post dose.
Rejection Criteria:	Polymer gel separation tube (SST or PST).

New Tests and Test Updates

Discontinued Tests

Test Code	Test Name	Alternative Test
3153U	Cotinine Screen, Urine	3150U - Nicotine and Metabolite with Anabasine, Urine
2541FL	LSD Screen, Fluid	No Alternate Tests Available
6926H	LSD Screen, Hair (Forensic)	No Alternate Tests Available
2541TI	LSD Screen, Tissue	No Alternate Tests Available
4281U	Synthetic Cannabinoid Metabolites (Qualitative) - Expanded, Urine	9564U - Synthetic Cannabinoid Metabolites Screen - Basic, Urine
8106B	Therapeutic and Abused Drugs with CO Screen, Blood (Forensic)	8052B - Postmortem Toxicology - Expanded, Blood (Forensic)