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# SSM Health SLUCare Forensic Toxicology Laboratory

Client Test Menu with Descriptions

SSM Health SLUCare Physician Group Forensic Toxicology Laboratory
6059 North Hanley Road
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# Contents



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# Blood Alcohol, DWI

**Test Includes:**
Quantitative analysis of ethanol (ethyl alcohol) for law-enforcement purposes. Also includes methanol (methyl alcohol), isopropanol (isopropyl alcohol), and acetone.

Qualitative analysis of difluoroethane (DFE) and chloroform.

**Purpose:**
Determination of Blood Alcohol Concentration (BAC) for medicolegal purposes.

**Specimen Requirements:**
2 mL whole blood in sodium fluoride. To facilitate retrograde extrapolation, draw 2 specimens one hour apart.

**Specimen Container:**
Gray top tube (sodium fluoride/potassium oxalate).

**Method:**
Headspace Gas-Chromatography/Flame Ionization (GC-FID).

**Test Codes:**
1001: Alcohol and Volatile Substances in Blood.

2001: Alcohol and Volatile Substances in Urine.

6001: Alcohol and Volatile Substances in Fluid.

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# Alcohol and Volatile Substances

**Test Includes:**
Quantitative analysis of ethanol (ethyl alcohol), methanol (methyl alcohol), isopropanol (isopropyl alcohol), and acetone.

Qualitative analysis of difluoroethane (DFE) and chloroform.

**Purpose:**
Determination of ethanol and volatile substances in biological fluids for medicolegal or clinical examination.

**Specimen Requirements:**
2 mL whole blood in sodium fluoride, urine, or vitreous fluid.

**Specimen Container:**
Blood: Gray top tube (sodium fluoride/potassium oxalate).

Urine: plain screw up jar/cup.

Vitreous Fluid: preservative-free tube.

**Method:**
Headspace Gas-Chromatography/Flame Ionization (GC-FID).

**Test Codes:**
1002: Alcohol and Volatile Substances in Blood.

2002: Alcohol and Volatile Substances in Urine.

3002: Alcohol and Volatile Substances in Vitreous Fluid.

4002: Alcohol and Volatile Substances in Tissue.

5002: Alcohol and Volatile Substances in Gastric.

6002: Alcohol and Volatile Substances in Fluid.

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# Drug Screen by GC/MS

**Test Includes:**
Comprehensive scan by Gas Chromatography/Mass Spectrometry (GC/MS). Including the following drugs: Analgesics (opioid and non-opioid), Anesthetics, Antiasthmatic Agents, Anticholinergic Agents, Anticonvulsant Agents, Antidepressants, Antiemetic Agents, Antihistamines, Antiparkinsonian Agents, Antipsychotic Agents, Antitussive Agents, Anxiolytics (Benzodiazepine and others), Cardiovascular Agents (non-digitalis), Hallucinogens, Hypnosedatives (Barbiturate and others), Muscle Relaxants, Non-Steroidal Anti-Inflammatory Agents, and Stimulants (Amphetamines and others).

Please note that not all known compounds included in each specific class or heading are included. The detection of any particular compound is concentration dependent.

**Purpose:**
This test is for the qualitative detection of drugs included in the above scope for use in determining further testing.

**Specimen Requirements:**
Central Blood (postmortem): 5 mL (2 mL minimum).

Urine: 5 mL (2 mL minimum).

Tissue (postmortem): 10 g

Gastric (postmortem): 5 mL (2 mL minimum).

**Specimen Containers:**
Blood: grey top tube or other container with sodium fluoride/potassium oxalate additive.

Urine: plain screw up container/cup.

Tissue/Gastric: plain screw top container.

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

**Test Codes:**
1005: Drug Screen by GCMS in Blood.

2005: Drug Screen by GCMS in Urine.

4005: Drug Screen by GCMS in Tissue.

5005: Drug Screen by GCMS in Gastric.

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# Drug Screen by QTOF

**Test Include:**
Comprehensive scan by Liquid Chromatography/Quadrupole Time of Flight (QTOF). Includes the following classes of drugs: Analgesics (opioid and non-opioid), Anesthetics, Antiasthmatic Agents, Anticholinergic Agents, Anticonvulsant Agents, Antidepressants, Antiemetic Agents, Antihistamines, Antiparkinsonian Agents, Antipsychotic Agents, Antitussive Agents, Anxiolytics (Benzodiazepine and others), Cardiovascular Agents (non-digitalis), Hallucinogens, Hypnosedatives (Barbiturate and others), Muscle Relaxants, Non-Steroidal Anti-Inflammatory Agents, and Stimulants (Amphetamines and others).

Please note that not all known compounds included in each specific class or heading are included. The detection of any compound is concentration dependent.

**Purpose:**
This test is for the qualitative detection of drugs included in the above scope for use in determining further testing. This test can be used for clinical analysis of drugs in blood or urine.

**Specimen Requirements:**
Central Blood (postmortem): 5 mL (2 mL minimum).

Urine: 5 mL (2 mL minimum).

Vitreous Fluid (postmortem): 2 mL

Tissue (postmortem): 10 g

Gastric (postmortem): 5 mL (2 mL minimum).

**Specimen Container:**
Blood: grey top tube or other container with sodium fluoride/potassium oxalate additive.

Urine: plain screw up container/cup.

Vitreous: preservative-free tube.

Tissue/Gastric: plain screw top container.

**Method:**
Liquid Chromatography/Quadrupole Time of Flight (LC-QTOF).

**Test Codes:**
1009: Drug Screen by QTOF in Blood.

2009: Drug Screen by QTOF in Urine.

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3009: Drug Screen by QTOF in Vitreous Fluid.

6009: Drug Screen by QTOF in Fluid.

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# Toxicology Panel by LC-MS/MS

**Test Include:**
Quantitative Analysis of: 6-monoacetylmorphine, 7-aminoclonazepam, acetaminophen, alprazolam, amitriptyline, amo/pentobarbital, amphetamine, benzoylecgonine, buprenorphine, bupropion, butabarbital, butalbital, carbamazepine, carisoprodol, chlordiazepoxide, citalopram/escitalopram, clomipramine, clonazepam, cocaine, codeine, cyclobenzaprine, desalkylflurazepam, desipramine, dextromethorphan, diazepam, diphenhydramine, doxepin, EDDP, flunitrazepam, fluoxetine, flurazepam, gabapentin, hydrocodone, hydromorphone, imipramine, ketamine, levetiracetam , lorazepam, MDA, MDEA, MDMA, MDPV, meperidine, meprobamate, methadone, methamphetamine, methylphenidate, midazolam, mitragynine (Kratom), morphine, naloxone, norbuprenorphine, nordiazepam, norfluoxetine, nortriptyline, O- desmethylvenlafaxine, olanzapine, oxazepam, oxycodone, oxymorphone, paroxetine, PCP, phenobarbital, pregabalin, propranolol, propoxyphene, pseudoephedrine, quetiapine, secobarbital, sertraline, temazepam, topiramate, tramadol, trazadone, venlafaxine, and zolpidem.

**Purpose:**
This test is suitable for medicolegal analysis of drugs in blood, urine, vitreous fluid, and tissue. This test can be used for clinical analysis of drugs in blood or urine.

**Specimen Requirements:**
Central Blood (postmortem): 5 mL (2 mL minimum).

Urine: 5 mL (2 mL minimum).

Vitreous Fluid (postmortem): 2 mL

Tissue (postmortem): 10 g

Gastric (postmortem): 5 mL (2 mL minimum).

**Specimen Container:**
Blood: grey top tube or other container with sodium fluoride/potassium oxalate additive.

Urine: plain screw up container/cup.

Vitreous: preservative-free tube.

Tissue/Gastric: plain screw top container.

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

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**Test Codes:**

1078: Toxicology Panel in Blood.

2078: Toxicology Panel in Urine.

3027: Illicit Confirmation in Vitreous.

3078: Other Toxicology Panel in Tissue/Fluid/Vitreous.

1028: Total (Conjugated & Unconjugated) Opiates in Blood.

6028: Total (Conjugated & Unconjugated) Opiates in Fluid.

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# Fentanyl and Fentanyl Analogues by LC-MS/MS

**Test Include:**
Quantitative analysis of: 4-ANPP, acetyl fentanyl, acryl fentanyl, carfentanil, fentanyl, and norfentanyl.

**Purpose:**
This test is suitable for medicolegal analysis of fentanyl and fentanyl analogs in blood, urine, vitreous fluid, and tissue. This test can be used for clinical analysis of drugs in blood or urine. This test is to confirm the above fentanyl and fentanyl analogs which are not included on our Toxicology Panel for medicolegal analysis.

**Specimen Requirements:**
Central Blood (postmortem): 5 mL (2 mL minimum).

Urine: 5 mL (2 mL minimum).

Vitreous Fluid (postmortem): 2 mL

Tissue (postmortem): 10 g

Gastric (postmortem): 5 mL (2 mL minimum).

**Specimen Container:**
Blood: grey top tube or other container with sodium fluoride/potassium oxalate additive.

Urine: plain screw up container/cup.

Vitreous: preservative-free tube.

Tissue/Gastric: plain screw top container.

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

**Test Codes:**
1076: Fentanyl and Fentanyl Analogues in Blood.

2076: Fentanyl and Fentanyl Analogues in Urine.

3076: Fentanyl and Fentanyl Analogues in Tissue/Fluid/Vitreous.

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# Cannabinoids by LC-MS/MS

**Test Include:**
Quantitative analysis of: Delta-9-tetrahydrocannabinol (THC), hydroxy-tetrahydrocannabinol (11-OH-THC), and carboxy-tetrahydrocannabinol (THC-COOH).

Qualitative analysis of: Delta-8-tetrahydrocannabinol.

**Purpose:**
This test is suitable for medicolegal analysis of cannabinoids in blood and urine. This test is to confirm the above cannabinoids which are not included on our Toxicology Panel for medicolegal analysis.

**Specimen Requirements:**
Central Blood (postmortem): 5 mL (2 mL minimum).

Urine: 5 mL (2 mL minimum).

**Specimen Container:**
Blood: grey top tube or other container with sodium fluoride/potassium oxalate additive.

Urine: plain screw up container/cup.

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

**Test Codes:**
1008: Cannabinoids in Blood.

2008: Cannabinoids in Urine.

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# Contraband Analysis

**Test Include:**
Analysis of drugs, pills and/or contraband by full scan Gas Chromatography/Mass Spectrometry. The following is a general list of compound classes detected: Analgesics (opioid and non-opioid), Anesthetics, Antiasthmatic Agents, Anticholinergic Agents, Anticonvulsant Agents, Antidepressants, Antiemetic Agents, Antihistamines, Antiparkinsonian Agents, Antipsychotic Agents, Antitussive Agents, Anxiolytics (Benzodiazepine and others), Cardiovascular Agents (non-digitalis), Hallucinogens, Hypnosedatives (Barbiturate and others), Muscle Relaxants, Non-Steroidal Anti-Inflammatory Agents, and Stimulants (Amphetamines and others). Please note that not all known compounds included in each specific class or heading are included. The detection of any particular compound is concentration dependent.

**Purpose:**
This test is to identify unknown substances for drug content. The scope of accreditation does not include non-biological drug testing. Results are for informational purposes only.

**Method:**
Gas Chromatography/Mass Spectrometry (GC/MS) and Liquid Chromatography/Quadrupole Time of Flight (LC-QTOF).

**Test Codes:**
025: Contraband Analysis.

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# Vitreous Fluid Chemistry

**Test Include:**
Comprehensive metabolic panel in vitreous fluid to include the quantitative determination of: Sodium, Potassium, Chloride, Glucose, Creatinine, and Urea Nitrogen in Vitreous Fluid.

**Purpose:**
This test is to quantitate the above compounds in Vitreous Fluid for medicolegal analysis.

**Specimen Requirements:**
Vitreous Fluid: 1ml.

**Specimen Container:**
Vitreous: preservative-free tube.

**Method:**
Testing performed using the i-STAT analyzer.

**Test Codes:**
3026: Vitreous Chemistry Panel.

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# Comprehensive Postmortem Analysis

**Test Include:**
General toxicological investigation of postmortem specimens including alcohol and volatile substances, comprehensive drug screens, reflex to confirmation. Encompasses the following drug classes: Analgesics (opioid and non-opioid), Anesthetics, Antiasthmatic Agents, Anticholinergic Agents, Anticonvulsant Agents, Antidepressants, Antiemetic Agents, Antihistamines, Antiparkinsonian Agents, Antipsychotic Agents, Antitussive Agents, Anxiolytics (Benzodiazepine and others), Bath Salts, Cardiovascular Agents (non-digitalis), Fentanyl Analogs, Hallucinogens, Hypnosedatives (Barbiturate and others), K2/Spice, Muscle Relaxants, NonSteroidal Anti-Inflammatory Agents, and Stimulants (Amphetamines and others).

**Purpose:**
This assay is to test a sample for a comprehensive drug screen encompassing both our Alcohol analysis and Drug Screening including Quantitation.

**Specimen Requirements:**
Blood: 15 mL (7 mL minimum)

Urine: 15 mL

Vitreous Fluid: 5 mL (2 mL minimum)

Tissue: 20 g

Gastric Contents: all available

**Specimen Container:**
Blood: grey top tube or other container with sodium fluoride/potassium oxalate additive.

Urine: plain screw up container/cup.

Vitreous: preservative-free tube.

Tissue: Plain screw top container.

Gastric Contents: Preservative-free container.

**Method:**
Headspace Gas Chromatography/Flame Ionization Detection (GC-FID), Liquid Chromatography/Quadrupole Time of Flight (LC-QTOF), Gas Chromatography/Mass Spectrometry (GC/MS), and Liquid Chromatography/Tandem Mass Spectrometry (LC-MS/MS).

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# Drug and Alcohol Analysis, DWI/DUID

**Test Include:**
General toxicological investigation of biological specimens for law enforcement. Includes: Blood Alcohol DWI, drug screen by LC/QTOF, reflex to confirmation by LC-MS/MS.

**Purpose:**
This assay provides Alcohol and Drug Screening including Quantitation for medicolegal analysis.

**Specimen Requirements:**
Blood: 15 mL (7 mL minimum).

**Specimen Container:**
Blood: grey top tube or other container with sodium fluoride/potassium oxalate additive.

**Method:**
Headspace Gas Chromatography/Flame Ionization Detection (GC-FID), Liquid Chromatography/Quadrupole Time of Flight (LC-QTOF), and Liquid Chromatography/Tandem Mass Spectrometry (LC-MS/MS).

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## Notes:

- These analyses are laboratory developed tests.
- These tests are suitable for medicolegal purposes.
- These tests are not FDA approved.
- Sending the minimum volume may result in an insufficient volume for repeat testing.

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