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102: Drug and Alcohol Analysis, DWI/DUID
1001: Blood Alcohol, DWI

<table>
<thead>
<tr>
<th>Test includes</th>
<th>Quantitative analysis of ethanol (ethyl alcohol) in whole blood</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purpose</td>
<td>Determination of Blood Alcohol Concentration (BAC) for medicolegal purposes</td>
</tr>
<tr>
<td>Method</td>
<td>Headspace Gas-Chromatography/Flame Ionization Detection (GC/FID)</td>
</tr>
<tr>
<td>Specimen Requirements</td>
<td>1 mL whole blood in sodium fluoride. To facilitate retrograde extrapolation, draw 2 specimens one hour apart.</td>
</tr>
<tr>
<td>Specimen Container</td>
<td>Gray top tube (sodium fluoride/NaF)</td>
</tr>
</tbody>
</table>

This test is suitable for medicolegal examination of ethanol in whole blood. This is a laboratory developed test. It is not FDA approved.

All toxicologists are licensed for blood alcohol testing by the States of Missouri and Illinois
### 002: Alcohol and Volatile Substances

<table>
<thead>
<tr>
<th><strong>Test includes</strong></th>
<th>Quantitative analysis of ethanol (ethyl alcohol), methanol (methyl alcohol), isopropanol (isopropyl alcohol) and acetone. Qualitative analysis of difluoroethane and chloroform.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Purpose</strong></td>
<td>Determination of ethanol and volatile substances in biological fluids for medicolegal or clinical examination.</td>
</tr>
<tr>
<td><strong>Method</strong></td>
<td>Headspace Gas-Chromatography/Flame Ionization Detection (GC/FID)</td>
</tr>
<tr>
<td><strong>Specimen Requirements</strong></td>
<td>1 mL whole blood in sodium fluoride, urine, or vitreous fluid</td>
</tr>
</tbody>
</table>
| **Specimen Container**           | Blood: grey top (sodium fluoride/NaF) tube  
Vitreous fluid: preservative free tube  
Urine: plain screw up jar/cup |
| **Test codes**                   | 1002: alcohol and volatile substances in blood  
2002: alcohol and volatile substances in urine  
3002: alcohol and volatile substances in vitreous fluid |

This test is suitable for medicolegal examination. This is a laboratory developed test. It is not FDA approved.
### 003/004: Ethanol Metabolites

<table>
<thead>
<tr>
<th><strong>Test includes</strong></th>
<th>Ethyl Glucuronide (EtG) and Ethyl Sulfate (EtS)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Purpose</strong></td>
<td>Identification of ethanol metabolites in blood or urine. EtG and EtS can be used to distinguish ethanol consumption from <em>in vitro</em> ethanol production.</td>
</tr>
<tr>
<td><strong>Method</strong></td>
<td>High Performance Liquid Chromatography/Tandem Mass Spectrometry (LC/MS-MS)</td>
</tr>
</tbody>
</table>
| **Specimen Requirements** | 1 mL whole blood (0.5 mL minimum)  
                          1 mL urine (0.5 mL minimum) |
| **Specimen Container** | Blood: Grey top (NaF) tube preferred, red top tube  
                          Urine: plain screw up container/cup |
| **Test Codes**     | 1003: Ethanol Metabolites in Blood  
                          2004: Ethanol Metabolites in Urine |

This test is suitable for medicolegal examination. This is a laboratory developed test. It is not FDA approved.

Sending the minimum volume may result in an insufficient volume for repeat testing.
005: Drug Screen by GCMS

**Test includes**

Comprehensive scan by gas chromatography mass spectrometry (GC/MS). 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 particular compound is concentration dependent.

**Method**

Gas Chromatography/Mass Spectrometry (GC/MS)

**Specimen Requirements**

- Central Blood (postmortem): 5 mL (2 mL minimum)
- Urine: 5 mL (2 mL minimum)
- Tissue (postmortem): 5 g

**Specimen Container**

- Blood: grey top tube or other container with sodium fluoride/potassium oxalate additive.
- Urine: plain screw up container/cup
- Tissue: plain screw top container

**Test Codes**

- 1005: Drug Screen by GCMS, blood
- 2005: Drug Screen by GCMS, urine
- 4005: Drug Screen by GCMS, tissue

This test is suitable for medicolegal examination. This is a laboratory developed test. It is not FDA approved.

Sending the minimum volume may result in an insufficient volume for repeat testing.

St. Louis University Forensic Toxicology Laboratory
6059 North Hanley Road
Berkeley, MO 63000
Phone (314)615-0822 Fax (314)521-1478
## 1029: Drug Screen by Immunoassay – Blood

### Test includes

Qualitative analysis of the following drug classes: benzodiazepines, opioids, cocaine, THC, amphetamines, phencyclidine, propoxyphene, barbiturates, acetaminophen, methadone, fentanyl, oxycodone/oxymorphone.

For screening purposes only. Positive results are preliminary and must be confirmed by a more sensitive, specific method such as mass spectrometry.

### Method

EMIT

### Specimen Requirements

- Central Blood (postmortem): 5 mL (2 mL minimum)
- Urine: 5 mL (2 mL minimum)
- Tissue (postmortem): 5 g

### Specimen Container

- Blood: grey top tube or other container with sodium fluoride/potassium oxalate additive.
- Urine: plain screw up container/cup

### Test Codes

- 1006: Drug Screen by Immunoassay, blood
- 2006: Drug Screen by Immunoassay, urine

This is a laboratory developed test. It is not FDA approved.

Sending the minimum volume may result in an insufficient volume for repeat testing.

St. Louis University Forensic Toxicology Laboratory
6059 North Hanley Road
Berkeley, MO 63000
Phone (314)615-0822 Fax (314)521-1478
1029: Drug Screen by Immunoassay – Urine

Test includes
Qualitative analysis of the following drug classes: benzodiazepines, opioids, cocaine, THC, amphetamines, phencyclidine, propoxyphene, barbiturates, acetaminophen, methadone, fentanyl, oxycodone/oxyphone, AB-PINACA/Synthetic Cannabinoids, buprenorphine, UR-144.

For screening purposes only. Positive results are preliminary and must be confirmed by a more sensitive, specific method such as mass spectrometry.

Method
EMIT

Specimen Requirements
Central Blood (postmortem): 5 mL (2 mL minimum)
Urine: 5 mL (2 mL minimum)
Tissue (postmortem): 5 g

Specimen Container
Blood: grey top tube or other container with sodium fluoride/potassium oxalate additive.
Urine: plain screw up container/cup

Test Codes
1006: Drug Screen by Immunoassay, blood
2006: Drug Screen by Immunoassay, urine

This is a laboratory developed test. It is not FDA approved.

Sending the minimum volume may result in an insufficient volume for repeat testing.
007: Toxicology Panel 1

**Test includes**
2-furanyl fentanyl, 6-monoacetylmorphine, 7-aminoclonazepam, acetaminophen, acetyl fentanyl, alprazolam, AM-2201 4 OH-pentyl, amitriptyline, amo/pentobarbital, amphetamine, benzoylcgonine, buprenorphine, butalbital, butabarbital, butalbital, carfentanil, carisoprodol, chloridrazepoxide, citalopram/escitalopram, clomipramine, clonazepam, cocaine, codeine, cyclobenzaprine, desalkylflurazepam, desipramine, dextromethorphan, diazepam, diphenhydramine, doxepin, EDDP, fentanyl, flunitrazepam, fluoxetine, flurazepam, lorazepam, MDA, MDEA, MDMA, MDPV, meperidine, meprobamate, methadone, methamphetamine, methylphenidate, midazolam, mitragynine (Kratom), morphine, naloxone, norbuprenorphine, nordiazepam, norfentanyl, norfluoxetine, norlortyprine, O-desmethylvenlafaxine, olanzapine, oxazepam, oxycodone, oxymorphone, paroxetine, PCP, phenobarbital, pregabalin, propranolol, propoxyphene, pseudoephedrine, quetiapine, secobarbital, sertraline, sufentanil, gabapentin, hydrocodone, hydromorphone, imipramine, JWH-018 N OH-pentyl, JWH-018 pentanoic acid, JWH-073 N-3-OH butyl, JWH-250 N-4-OH-pentyl, ketamine, levetiracetam, temazepam, THC-COOH, topiramate, tramadol, trazadone, venlafaxine, XLR-11

**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.

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

**Specimen Requirements**
- Blood: 2 mL peripheral blood
- Urine: 2 mL
- Vitreous Fluid: 1 mL
- Tissue: 10 grams

**Specimen Container**
- Blood: gray top tube (NaF/KOX), bottle with 1% potassium oxalate/sodium fluoride
- Urine: plain screw top container/cup or preservative free tube
- Vitreous Fluid: preservative free tube
- Tissue: plain screw top container

**Test Codes**
- 1007: Toxicology Panel 1 in blood
- 2007: Toxicology Panel 1 in urine
- 3007: Toxicology Panel 1 in vitreous
- 4007: Toxicology Panel 1 in tissue

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This test is suitable for medicolegal purposes. This is a laboratory developed test. It is not FDA approved.

Sending the minimum volume may result in an insufficient volume for repeat testing.
008: Marijuana and Metabolites

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

**Method**
Gas Chromatography-Mass Spectrometry

**Specimen Requirements**
Blood (peripheral): 5 mL (2 mL minimum)
Urine: 5 mL (2 mL minimum)

**Specimen Container**
Blood: gray top tube (NaF/KOX), bottle with 1% potassium oxalate/sodium fluoride
Urine: plain screw top container/cup

**Test Codes**
1008: Marijuana and Metabolites in Blood
2008: Marijuana and Metabolites in Urine

This test is suitable for medicolegal purposes. This is a laboratory developed test. It is not FDA approved.

Sending the minimum volume may result in an insufficient volume for repeat testing.
## 022: Ethylene Glycol

<table>
<thead>
<tr>
<th><strong>Test includes</strong></th>
<th>Quantitative analysis of ethylene glycol</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Method:</strong></td>
<td>Gas Chromatography/Mass Spectrometry</td>
</tr>
</tbody>
</table>
| **Specimen Requirements** | Blood: 0.5 mL  
Urine: 0.5 mL  
Gastric contents: all available |
| **Specimen Container** | Plain tubes and cups |
| **Test codes** | 1022: ethylene glycol in blood  
2022: ethylene glycol in urine  
5022: ethylene glycol in gastric fluid |

This test is suitable for medicolegal purposes. This is a laboratory developed test. It is not FDA approved.

Sending the minimum volume may result in an insufficient volume for repeat testing.
<table>
<thead>
<tr>
<th>023: Carbon Monoxide</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Test includes</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Method</strong></td>
</tr>
<tr>
<td><strong>Specimen Requirements</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Specimen Container</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Test Codes</strong></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

This test is suitable for medicolegal purposes. This is a laboratory developed test. It is not FDA approved.
### 024: Pill Identification

**Test includes**

Identification of pills by comparison to reference literature and analysis by full scan Gas-Chromatography-Mass Spectrometry. The following is a general list of compound classes detected. 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.

Analgesics (opiod 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).

**Method**

Gas Chromatography/Mass Spectrometry

**Test Code**

024: Pill Identification

This test is suitable for medicolegal purposes. This is a laboratory developed test. It is not FDA approved.
025: Contraband Analysis

**Test includes**
Analysis of drugs and/or contraband by full scan Gas Chromatography-Mass Spectrometry. The following is a general list of compound classes detected. 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. 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).

**Method**
Gas Chromatography/Mass Spectrometry

**Test Code**
025: Contraband Analysis

This test is suitable for medicolegal purposes. This is a laboratory developed test. It is not FDA approved.
## 026: Vitreous Fluid Chemistry

<table>
<thead>
<tr>
<th>Test Includes</th>
<th>Comprehensive metabolic panel in vitreous fluid.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method</td>
<td>Testing performed by MedTox at Hennepin Medical Center.</td>
</tr>
<tr>
<td>Specimen Requirements</td>
<td>Vitreous Fluid: 1 mL</td>
</tr>
<tr>
<td>Specimen Container</td>
<td>Preservative free tube</td>
</tr>
</tbody>
</table>
101: Comprehensive Postmortem Analysis

**Test includes**

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, 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, Non-Steroidal Anti-Inflammatory Agents, and Stimulants (Amphetamines and others).

**Methods**

Headspace Gas Chromatography-Flame Ionization Detection, Immunoassay (EMIT), Gas Chromatography-Mass Spectrometry, Liquid Chromatography Tandem Mass Spectrometry

**Specimen Requirements**

Blood: 15 mL (7 minimum)
Urine: 15 mL
Tissue: 10 g
Gastric Contents: all available

**Specimen Container**

Blood: grey top tube (NaF/KOX), bottle with 1% potassium oxalate/sodium fluoride
Urine: plain screw up container/cup
Tissue: plain screw top container
Gastric Contents: preservative free container

Sending the minimum volume may result in an insufficient volume for repeat testing.
102: Drug and Alcohol Analysis, DWI/DUID

<table>
<thead>
<tr>
<th>Test includes</th>
<th>General toxicological investigation of biological specimens for law enforcement. Includes: Blood Alcohol DWI, drug screen by immunoassay, reflex to confirmation by LC/MS-MS and GC-MS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method</td>
<td>Headspace Gas Chromatography-Flame Ionization Detection, Immunoassay (EMIT), Gas Chromatography-Mass Spectrometry, Liquid Chromatography Tandem Mass Spectrometry</td>
</tr>
<tr>
<td>Specimen Requirements</td>
<td>Blood: 15 mL (7 mL minimum)</td>
</tr>
<tr>
<td>Specimen Container</td>
<td>Blood: grey top tubes (sodium fluoride/NaF)</td>
</tr>
</tbody>
</table>

Sending the minimum volume may result in an insufficient volume for repeat testing.