

St. Louis University Forensic Toxicology Laboratory

Test Menu with Descriptions

St. Louis University Forensic Toxicology Laboratory
6059 North Hanley Road
Berkeley, MO 63000
Phone (314)615-0822 Fax (314)521-1478

CONTENTS

[1001: Blood Alcohol, DWI](#)

[002: Alcohol and Volatile Substances](#)

[003/004: Ethanol Metabolites](#)

[005: Drug Screen by GCMS](#)

[1029: Drug Screen by Immunoassay – Blood](#)

[1029: Drug Screen by Immunoassay – Urine](#)

[007: Toxicology Panel 1](#)

[008: Marijuana and Metabolites](#)

[022: Ethylene Glycol](#)

[023: Carbon Monoxide](#)

[024: Pill Identification](#)

[025: Contraband Analysis](#)

[026: Vitreous Fluid Chemistry](#)

[101: Comprehensive Postmortem Analysis](#)

[102: Drug and Alcohol Analysis, DWI/DUID](#)

1001: Blood Alcohol, DWI

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

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

Test includes	Quantitative analysis of ethanol (ethyl alcohol), methanol (methyl alcohol), isopropanol (isopropyl alcohol) and acetone. Qualitative analysis of difluoroethane and chloroform.
Purpose	Determination of ethanol and volatile substances in biological fluids for medicolegal or clinical examination.
Method	Headspace Gas-Chromatography/Flame Ionization Detection (GC/FID)
Specimen Requirements	1 mL whole blood in sodium fluoride, urine, or vitreous fluid
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

Test includes	Ethyl Glucuronide (EtG) and Ethyl Sulfate (EtS)
Purpose	Identification of ethanol metabolites in blood or urine. EtG and EtS can be used to distinguish ethanol consumption from <i>in vitro</i> ethanol production.
Method	High Performance Liquid Chromatography/Tandem Mass Spectrometry (LC/MS-MS)
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	<p>Comprehensive scan by gas chromatography mass spectrometry (GC/MS). Includes the following classes of drugs:</p> <p>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, Hypnotosedatives (Barbiturate and others), Muscle Relaxants, Non-Steroidal Anti-Inflammatory Agents, and Stimulants (Amphetamines and others).</p> <p>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.</p>
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	<p>Qualitative analysis of the following drug classes: benzodiazepines, opioids, cocaine, THC, amphetamines, phencyclidine, propoxyphene, barbiturates, acetaminophen, methadone, fentanyl, oxycodone/oxymorphone.</p> <p>For screening purposes only. Positive results are preliminary and must be confirmed by a more sensitive, specific method such as mass spectrometry.</p>
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.

1029: Drug Screen by Immunoassay – Urine

Test includes	<p>Qualitative analysis of the following drug classes: benzodiazepines, opioids, cocaine, THC, amphetamines, phencyclidine, propoxyphene, barbiturates, acetaminophen, methadone, fentanyl, oxycodone/oxymorphone, AB-PINACA/ Synthetic Cannabinoids, buprenorphine, UR-144.</p> <p>For screening purposes only. Positive results are preliminary and must be confirmed by a more sensitive, specific method such as mass spectrometry.</p>
Method	EMIT
Specimen Requirements	<p>Central Blood (postmortem): 5 mL (2 mL minimum)</p> <p>Urine: 5 mL (2 mL minimum)</p> <p>Tissue (postmortem): 5 g</p>
Specimen Container	<p>Blood: grey top tube or other container with sodium fluoride/potassium oxalate additive.</p> <p>Urine: plain screw up container/cup</p>
Test Codes	<p>1006: Drug Screen by Immunoassay, blood</p> <p>2006: Drug Screen by Immunoassay, urine</p>

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, benzoylecgonine, buprenorphine, bupropion, butabarbital, butalbital, carfentanil, carisoprodol, chlordiazepoxide, 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, nortriptyline, 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

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.

St. Louis University Forensic Toxicology Laboratory
6059 North Hanley Road
Berkeley, MO 63000
Phone (314)615-0822 Fax (314)521-1478

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

Test includes	Quantitative analysis of ethylene glycol
Method:	Gas Chromatography/Mass Spectrometry
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

023: Carbon Monoxide

Test includes	Detection of carboxyhemoglobin. Concentration of carbon monoxide is related to percent hemoglobin saturation.
Method	Spectroscopy
Specimen Requirements	Blood: 0.5 mL Spleen 5 g
Specimen Container	Blood: red top (plain) or grey top (sodium fluoride /NaF) tube or bottle Spleen: plain bottle
Test Codes	1023: Carbon Monoxide, blood 4023: Carbon Monoxide, tissue

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

024: Pill Identification

Test includes	<p>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.</p> <p>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, Hypnotosedatives (Barbiturate and others), Muscle Relaxants, Non-Steroidal Anti-Inflammatory Agents, and Stimulants (Amphetamines and others).</p>
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, Hypnotosedatives (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

Test includes	Comprehensive metabolic panel in vitreous fluid.
Method	Testing performed by MedTox at Hennepin Medical Center.
Specimen Requirements	Vitreous Fluid: 1 mL
Specimen Container	Preservative free tube

101: Comprehensive Postmortem Analysis

Test includes	<p>General toxicological investigation of postmortem specimens including: alcohol and volatile substances, comprehensive drug screens, reflex to confirmation.</p> <p>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, Hypnotosedatives (Barbiturate and others), K2/Spice, Muscle Relaxants, Non-Steroidal Anti-Inflammatory Agents, and Stimulants (Amphetamines and others).</p>
Methods	Headspace Gas Chromatography-Flame Ionization Detection, Immunoassay (EMIT), Gas Chromatography-Mass Spectrometry, Liquid Chromatography Tandem Mass Spectrometry
Specimen Requirements	<p>Blood: 15 mL (7 minimum)</p> <p>Urine: 15 mL</p> <p>Tissue: 10 g</p> <p>Gastric Contents: all available</p>
Specimen Container	<p>Blood: grey top tube (NaF/KOX), bottle with 1% potassium oxalate/sodium fluoride</p> <p>Urine: plain screw up container/cup</p> <p>Tissue: plain screw top container</p> <p>Gastric Contents: preservative free container</p>

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

102: Drug and Alcohol Analysis, DWI/DUID

Test includes	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.
Method	Headspace Gas Chromatography-Flame Ionization Detection, Immunoassay (EMIT), Gas Chromatography-Mass Spectrometry, Liquid Chromatography Tandem Mass Spectrometry
Specimen Requirements	Blood: 15 mL (7 mL minimum)
Specimen Container	Blood: grey top tubes (sodium fluoride/NaF)

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