

**Specimen Requirements**

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Test Name	Specimen Requirements
Acetaminophen	0.5 mL Serum. To determine rate of drug clearance (t1/2) collect 2 or 3 samples at 3 h intervals beginning 4 h after drug ingestion. Urine - see Drug Screen.
Acetaminophen	5 mL Gastric lavage.
Acetylcholine Receptor Antibody	2 mL Serum. Store and send frozen.
Acetylcholinesterase: RBC	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Acetylsalicylic Acid	1 mL Serum.
Acetylsalicylic Acid	5 mL Gastric lavage. Store and send frozen.
Acetylsalicylic Acid (Urine)	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
α-1-Acid Glycoprotein	1 mL Serum. Note: Do not confuse with α Glycoprotein Subunit.
Acid Phosphatase: Prostatic	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Acid Phosphatase: Total	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Activated Protein C Resistance	1 mL Plasma (Citrate). Separate and freeze immediately. If the specimen thaws, it is unsuitable for analysis.
Acylcarnitine	1 mL Serum. Store and send frozen. Analysis includes Free and Total Carnitine and Acylcarnitine. Please provide age, gender and clinical history to facilitate interpretation of analytical findings and recommendation of further testing or consultation.
Adenovirus	Multiple. . Please see [Public Health Laboratory Services].
Adenovirus Identification by PCR	Multiple. Recommended specimen types Plasma (EDTA), Urine (Random) and Respiratory Specimens. Contact HICL Customer Service at (416) 391-1499 Ext. 248/249 or info@hicl.on.ca prior to collection and submission.
Adiponectin	1 mL Serum. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. This test is for 'Research Use Only'.
Adrenal Antibodies	1.0 mL Serum. Grossly hemolyzed, lipemic, or microbially contaminated specimens are unsuitable. Avoid repeated freezing and thawing of samples. Analysis and report include Mitochondrial Antibodies (included in fee). In the presence of positive Mitochondrial Antibodies (as confirmed on rat kidney cells), positive Adrenal Antibodies cannot be reported and will be noted on report.



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Adrenocorticotrophic Hormone	2 mL Plasma (EDTA). Plasma (Heparin) and serum are not suitable for analysis. Collect in pre-chilled plastic or siliconized glass tube and separate at 4°C. Divide equally into 2 pre-chilled polypropylene transfer vials and freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. A simultaneous order for Cortisol is recommended for interpretation of ACTH. See separate listing for Cortisol.
Alanine Aminotransferase	1 mL Serum.
Albumin	1 mL Fluid / Faeces. Indicate source of fluid clearly on requisition. Faeces: Submit 5 mL naturally fluid faeces. Formed faeces is not acceptable.
Albumin	1 mL Serum.
Albumin	10 mL Urine (24h). Indicate 24 h volume and collection date.
Albumin	10 mL Urine (Random). Elevated results should be confirmed on a 24 h collection.
Alcohol Fract. and Quant.	1 mL Serum or Plasma (Fluoride). Do not use alcohol swab. Seal. Includes Acetone, Ethanol, Isopropanol and Methanol. Results not for medico-legal purposes.
Alcohol Fract. and Quant.	5 mL Urine (Random). Seal. Includes Acetone, Ethanol, Isopropanol and Methanol. If "Alcohol" or "Ethanol" is ordered only an enzymatic analysis of Ethanol will be reported (and billed). Results not for medicolegal purposes.
Alcohol Fract. and Quant.	5 mL Gastric lavage. Seal. Includes Acetone, Ethanol, Isopropanol and Methanol.
Alcohol Fract. and Quant.	1 mL Vitreous Humour. Send specimen in polypropylene transfer vial.
Aldolase	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Aldosterone	10 mL Urine (24h). Store and send frozen. provide collection date and volume (in litres). Identify all drugs administered within 2 weeks as some drugs have low cross reactivity in this assay.
Aldosterone	1 mL Serum or Plasma (Hep). Indicate if patient was upright or recumbent. Store and send frozen. Stable for 1 d at 2-8 °C. Hemolyzed specimens are unsuitable for analysis. Plasma (EDTA) is not recommended as results will on average be 15 % higher than serum or plasma (Hep).
Alkaline Phosphatase	1 mL Serum. Indicate date of birth.
Alkaline Phosphatase: Bone Specific	1 mL Plasma (Heparin) or Serum. Store and send frozen.
Alkaline Phosphatase: Isoenzymes	2 mL Serum. Assay includes Total ALP and GGT. For interpretation, include age and clinical indication for test. Isoenzyme analysis will not be performed when Alkaline Phosphatase Total is less than 60 U/L.
Alkaline Phosphatase: Neutrophil	Not Available - See note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 ext. 248 or info@hicl.on.ca.



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Allergic Alveolitis (Lung Serology)	1 mL Serum. Includes detection of antibodies to <i>Aspergillus fumigatus</i> , <i>Micropolyspora faeni</i> , <i>Thermoactinomyces vulgaris</i> , <i>Aureobasidium pullulans</i> and pigeon serum. (Note: Do not confuse with Avian Precipitins.)
Alprazolam	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext.248 or info@hicl.on.ca.
Aluminium	2 mL Fluid. Indicate source.
Aluminium	3 mL Plasma (EDTA). Collect plasma in contaminant-free tube. Separate as soon as possible and send in metal-free polypropylene vial.
Aluminium	13 mL Urine (Random). Collect and transfer in metal-free container. Provide collection date. Indicate "Random". Patient is to avoid fruits and juices, chocolate, beer, coffee and teas for 24 h prior to collection. Antacids containing aluminium can greatly elevate urine aluminium output.
Aluminium	13 mL Urine (24h). Collect and transfer in metal-free container. Collection date and 24 h volume must be provided. Patient is to avoid fruits and juices, chocolate, beer, coffee and teas for 24 h prior to collection. Antacids containing aluminium can greatly elevate urine aluminium output.
Amikacin: Peak	1 mL Serum. To monitor Peak concentration, collect 1 h following I.M. or 15 min. following a 60 min. I.V. (or 30 min. after a 30 min. I.V.) drug administration. Collect with third dose if possible. Separate and freeze as soon as possible. Store and send frozen. Label Peak specimen and requisition clearly. Do not use gel-separator tubes.
Amikacin: Trough	1 mL Serum. To monitor trough concentration, collect prior to I.M. or I.V. drug administration. Collect with third dose if possible. Separate and freeze as soon as possible. Store and send frozen. Label Trough specimen and requisition clearly. Do not use gel-separator tubes.
Amino Acids - Frac. & Quant. (Fluid)	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Amino Acids: Quantitation	1 mL Serum or Plasma (Hep. / EDTA). Fasting collection preferred. Separate immediately. Store and send frozen. Capillary specimens are not suitable. Please provide date of birth (day-month-year), special diet and clinical indicators (including diagnosis or investigation) to ensure appropriate analysis and interpretation of results.
Amino Acids: Quantitation	5 mL Urine (Random). Do not add preservative. Store and send frozen. Please provide date of birth (day-month-year), gender and clinical history to facilitate interpretation of analytical findings and recommendation of further testing or consultation.
Amiodarone	3 mL Serum. To monitor therapy, draw trough specimen prior to next dose. Analysis includes Desethylamiodarone.
Amitriptyline	5 mL Gastric lavage.
Amitriptyline	10 mL Urine (Random). Assay includes Nortriptyline.
Amitriptyline	3 mL Serum or plasma (EDTA). To monitor therapy, draw trough specimen prior to morning dose or 10 - 12 h after last drug administration. Assay includes Nortriptyline.



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Ammonia	1 mL Plasma (EDTA). Freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. Avoid hemolysis. Do not use gel-separator tubes.
Amobarbital	3 mL Serum.
Amobarbital	10 mL Gastric lavage.
Amoxapine	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Amphetamine	10 mL Urine (Random). Serum or plasma are not suitable.
Amylase	1 mL Serum.
Amylase	1 mL Fluid. Indicate source of fluid clearly on the requisition.
Amylase	5 mL Urine (Random or 24h). Time collection and indicate length of collection or random on requisition. Adjust pH to 7.
Amylase Isoenzyme	1 mL Serum. Indicate clinical conditions that may affect Amylase. This assay will detect Macroamylase if present.
Amylase/Creatinine Clearance Ratio	1 mL Serum and Urine. Collect simultaneously. Adjust urine pH to alkaline range.
Androstenedione	2 mL Serum. Store and send frozen. Females: Recommend collection 1 week before or after menstrual period.
Angiotensin Converting Enzyme	1 mL CSF. Indicate CSF clearly on requisition.
Angiotensin Converting Enzyme	1 mL Serum. Collect after overnight fast to avoid interference from lipemia.
Anti-Mullerian Hormone	1 mL Serum or Plasma (EDTA or Hep). Separate and freeze as soon as possible. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. This test is for "Research Use Only."
Anti-Streptolysin O Screen	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Anti-Streptolysin O Titre	1 mL Serum. Acute and convalescent sera (10-14 days after onset of illness) should be analyzed to document acute infection.
Anti-Thrombin III: Activity	1 mL Plasma (Citrate). Separate and freeze immediately. If the specimen thaws, it is unsuitable for analysis. Heparin plasma is unsuitable for analysis. Patient should not be on anticoagulant therapy.
Anti-Thrombin III: Antigen	1 mL Plasma (Citrate). Separate and freeze as soon as possible. If the specimen thaws, it is unsuitable for analysis. Patient should not be on anticoagulant therapy.



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Antidiuretic Hormone	3 mL Plasma (EDTA). Serum is not suitable for analysis. Collect in pre-chilled tube and separate at 4°C. Divide equally in to 2 pre- chilled tubes and freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. Simultaneous measurement of serum Osmolality may be informative - submit separate specimen (see separate listing). To measure basal ADH, collect after 12 h fast with patient recumbent for 1 h prior to collection.
Antimony	13 mL Urine (24h). Collect and transfer in metal-free container. Collection date and 24 h volume must be provided.
Antimony	13 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Provide collection date.
Antimony	7 mL Whole blood (Heparin). Collect heparin whole blood in contaminant-free tube. Do not use plastic collection tubes. Send in metal-free polypropylene vial.
Antimony - Plasma	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
α -2-Antiplasmin	3 mL Plasma (Citrate). Separate and freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
α -1-Antitrypsin	1 mL Serum. Store and send frozen. Phenotyping (see separate listing) may be recommended if clinically indicated and α -1-Antitrypsin is less than 1.5 g/L. You may order α -1-Antitrypsin: Total and specify "Phenotype if <1.5" to pre-authorize HICL to perform Total assay and add Phenotyping Date of birth must be provided.
α -1-Antitrypsin: Phenotype	1 mL Serum. Store and send frozen. Analysis includes α -1-Antitrypsin (A1AT) Total. Analysis recommended only when previously measured A1AT was 1.5 g/L or less or patient is first degree relative/spouse of known A1AT-deficient subject. You may order A1AT: Total and specify "Phenotype if 1.5 or less" to pre- authorize HICL to perform Total (refer to separate listing) and add Phenotyping if appropriate. Date of birth must be provided.
Apolipoprotein A1	1 mL Serum or Plasma (EDTA). Separate from red cells within 4 h of collection. Freeze if not sent for analysis within 2 d of collection. When Triglycerides are >10 mmol/L analysis is not accurate and will not be performed. This test is for 'Research Use Only'.
Apolipoprotein B	1 mL Serum or Plasma (EDTA). Separate from cells within 4 h of collection. Freeze if not sent for analysis within 2 d of collection. When triglycerides are >10 mmol/L analysis is not accurate and will not be performed. This test is for 'Research Use Only'.
Apolipoprotein C &/or E	6 mL Plasma (EDTA). Assay is available on a consultation basis only. Contact HICL prior to specimen collection at (416) 391-1499 Ext. 248 or info@hicl.on.ca. Assay is not done if Triglycerides are normal.
Apolipoprotein C2 Activation	6 mL Plasma (EDTA). Collect after a 14 h fast. Separate from red cells within 4 h of collection. Store and send frozen. Assay available on consultation basis only - contact HICL Customer Service at (416) 391-1499 ext. 248 or info@hicl.on.ca
Arsenic	7 mL Whole Blood (EDTA). Collect whole blood in contaminant-free tube. Send in metal-free polypropylene vial.



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Arsenic	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck. If unable to weigh the hair, try to submit 1 to 2 heaping teaspoons (10-20 mL). Submit in a plastic bag. Bleach, dyes and rinses may interfere.
Arsenic	0.05 g Nail. Remove nail polishes, colours and glazes prior to collection. If unable to weigh the clippings, try to submit all clippings from both hands. Submit in a plastic bag.
Arsenic: Inorganic	13 mL Urine (24h). Collect and transfer in metal-free container. Collection date and 24 h volume must be provided. Avoid seafood consumption for five days prior to collection. Inorganic Arsenic includes inorganic, mono- and di-methylated species, correlating with occupational and environmental exposure. Organic Arsenic, including tri-methylated species such as Arsenobetaine is not measured. When Arsenic is ordered, unless "Inorganic" is specified, a Total Arsenic will be performed and billed, with Inorganic Arsenic performed and billed in addition when the Total Arsenic is elevated.
Arsenic: Inorganic	13 mL Urine (Random). Collect and transfer in metal-free container. Provide collection date. Indicate "Random". Avoid seafood consumption for five days prior to collection. Inorganic Arsenic includes inorganic, mono- and di-methylated Arsenic. Organic Arsenic, including tri-methylated species such as Arsenobetaine is not measured. When Arsenic is ordered, unless "Inorganic" is specified, a total Arsenic will be performed and billed, with Inorganic Arsenic performed and billed in addition when the Total Arsenic is elevated.
Arsenic: Total	13 mL Urine (24h). Collect and transfer in metal-free container. Collection date and 24 h volume must be provided. Avoid seafood consumption for five days prior to collection. Assay measures Total Arsenic. If elevated, Inorganic Arsenic analysis will be performed, reported and billed in addition to Total Arsenic. See separate listing for Arsenic: Inorganic.
Arsenic: Total	13 mL Urine (Random). Collect and transfer in metal-free container. Provide collection date. Indicate "Random". Avoid seafood consumption for five days prior to collection. Assay measures Total Arsenic. If elevated, Inorganic Arsenic analysis will be performed, reported and billed in addition to Total Arsenic. See separate listing for Arsenic: Inorganic.
Aryl Sulfatase A	7 mL Whole blood (Heparin). Maintain at ambient temperature. Sample must be analysed within 12 h of collection. The sample must be delivered to HICL before 1200 h (noon) on the day of collection. Urine sulfatides may be recommended as an alternate screen. For further information contact HICL Customer Service at (416) 391-1499 ext. 248 or info@hicl.on.ca
Aspartate Aminotransferase	1 mL Serum.
Aspiration Biopsy	Aspirate. Please contact HICL Customer Service at (416) 391-1499 Ext. 248 or Ext. 249 for further information prior to collection of specimens.
Avian Precipitins: Budgie	1 mL Serum. Request must specify: Avian Precipitins - Budgie. Refer to separate listings for other available Avian Precipitin antigens.
Avian Precipitins: Canary	1 mL Serum. Request must specify: Avian Precipitins - Canary. Refer to separate listings for other available Avian Precipitin antigens.



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Avian Precipitins: Chicken	1 mL Serum. Request must specify: Avian Precipitins - Chicken. Refer to separate listings for other available Avian Precipitin antigens.
Avian Precipitins: Cockatiel	1 mL Serum. Request must specify: Avian Precipitins - Cockatiel. Refer to separate listings for other available Avian Precipitin antigens.
Avian Precipitins: Duck	1 mL Serum. Request must specify: Avian Precipitins - Duck. Refer to separate listings for other available Avian Precipitin antigens.
Avian Precipitins: Goose	1 mL Serum. Request must specify: Avian Precipitins - Goose. Refer to separate listings for other available Avian Precipitin antigens.
Avian Precipitins: Parrot	1 mL Serum. Request must specify: Avian Precipitins - Parrot. Refer to separate listings for other available Avian Precipitin antigens.
Avian Precipitins: Turkey	1 mL Serum. Request must specify: Avian Precipitins - Turkey. Refer to separate listings for other available Avian Precipitin antigens.
Avian precipitins: Pigeon	1 mL Serum. Request must specify: Avian Precipitins - Pigeon. Refer to separate listings for other available Avian Precipitin antigens.
B-Type Natriuretic Peptide (NT-Pro)	1 mL Serum.
BK Virus	2 mL Plasma (EDTA). Separate as soon as possible. Provide date of birth, collection date and time of collection.
BK Virus	2 mL Urine (Random). Collect specimen into sterile container. Provide date of birth, collection date and time of collection.
Barbital	10 mL Gastric lavage.
Barbital	3 mL Serum.
Barbiturates: Screen	10 mL Urine (Random). This screen can detect (but not identify) the following barbiturates: Amobarbital, Barbital, Butabarbital, Butalbital, Pentobarbital, Phenobarbital and Secobarbital. Barbiturate identification is available - refer to specific barbiturate listing.
Barbiturates: Screen	3 mL Serum. This screen will detect (but not identify) the following barbiturates: Amobarbital, Barbital, Butabarbital, Butalbital, Pentobarbital, Phenobarbital and Secobarbital. Barbiturate quantitation is available - refer to specific barbiturate listing.
Barium	13 mL Urine (Random). Collect and transfer in metal-free container. Provide collection date. Indicate "Random".
Barium	13 mL Urine (24h). Collect and transfer in metal-free container. Collection date and 24 h volume must be provided.
Benzodiazepine Identification	5 mL Urine (random).
Benzodiazepines: Screen	1 mL Serum. Specific benzodiazepine quantitations are available - refer to specific benzodiazepine listings.
Benzodiazepines: Screen	10 mL Urine (Random). This screen does not identify the Benzodiazepine detected.
Benzotropine Mesylate: Screen	10 mL Urine (Random).

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Beryllium	13 mL Urine (Random). Collect and transfer in a contaminant-free container.
Beryllium	13 mL Urine (24h). Collect and transfer in metal-free container. Collection date and 24 h volume must be provided.
Bile Acids: Total	0.5 mL Serum. Collect fasting specimen. Plasma is not acceptable. Store and send frozen.
Bilirubin	5 mL Amniotic fluid. This test is only performed when possibility of hemolytic disease is suspected and documented. Do not centrifuge. Keep cold but do not freeze. Protect specimen from light. Specimen must be labelled inside and outside light-protecting wrap. Provide gestational age, reason for request and physician's name and phone number. Specimen must be received at HICL prior to 1200 h for next-day results.
Bilirubin: Direct	1 mL Serum. Protect specimen from light. Specimen must be labelled inside and outside light-protecting wrap. Store and send frozen.
Bilirubin: Total	1 mL Serum. Protect specimen from light. Specimen must be labelled inside and outside light-protecting wrap.
Biotinidase	1 mL Serum or Plasma. Store and send frozen.
Bismuth	13 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Provide collection date.
Blastomycosis	Multiple. . Please see [Public Health Laboratory Services].
Boron	13 mL Urine (24h). Collect and transfer in metal-free container. Collection date and 24 h volume must be provided.
Boron	13 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Provide collection date.
Bromazepam	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Bromide	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 ext. 248 or info@hicl.on.ca.
Brucellosis	Multiple. . Please see [Public Health Laboratory Services].
Bupivacaine	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 ext. 248 or info@hicl.on.ca.
Butabarbital	3 mL Serum.
Butabarbital	10 mL Urine.
Butabarbital	10 mL Gastric lavage.
Butalbital	3 mL Serum. Some formulations may contain other active drugs (Salicylates, caffeine or other).



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C-Peptide	1 mL Serum. Do not use gel-separator tubes. Collect after an overnight fast. Separate at 4°C and freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. If ordering Insulin as well, submit a separate frozen specimen for each test. *
C-Reactive Protein	1 mL Serum. This assay has a detection limit of 0.18 mg/L.
C-Telopeptide	1 mL Plasma (EDTA). Fasting Plasma (EDTA) specimen recommended. Plasma (Na-heparin) and serum are acceptable but Plasma (EDTA) is recommended.
C1 Esterase Inhibitor: Functional	1 mL Plasma (Citrate). Separate and freeze as soon as possible. Store and send frozen.
C1 Esterase Inhibitor: Immunological	1 mL Serum. Separate as soon as possible. A separate Plasma (Citrate) sample must be submitted frozen if the C1 Esterase Functional is also ordered.
C1 Function	1 mL Serum. Do not use gel-separator tubes. Allow blood to clot at 37°C for 20-60 minutes. Transfer serum to polypropylene vial. Freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
C1q Complement Component	1 mL Plasma (EDTA). Separate platelet-poor plasma immediately. Freeze as soon as possible. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
C1r Complement Component	1 mL Plasma (EDTA). Separate platelet-poor plasma immediately. Freeze as soon as possible. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
C1s Complement Component	1 mL Plasma (EDTA). Separate platelet-poor plasma immediately. Freeze as soon as possible. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
C2 Complement	2 mL Serum. Collect and separate at 4°C. Freeze as soon as possible. If the specimen thaws it is unsuitable for analysis.
C2 Function	1 mL Serum. Do not use gel-separator tubes. Allow blood to clot at 37°C for 20-60 minutes. Transfer serum to a polypropylene vial. Freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
C3 Complement	1 mL Serum. Separate and freeze as soon as possible. Store and send frozen. Send 1 mL for C3 and C4 Complement.
C4 Complement	1 mL Serum. Separate and freeze as soon as possible. Store and send frozen. Send 1 mL for C3 and C4 Complement.
C4 Complement: Fluid	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca .
C5 Complement	1 mL Plasma (EDTA). Separate platelet-poor plasma immediately. Freeze as soon as possible. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
C6 Complement	1 mL Plasma (EDTA). Separate platelet-poor plasma immediately. Freeze as soon as possible. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.



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C7 Complement	1 mL Plasma (EDTA). Separate platelet-poor plasma immediately. Freeze as soon as possible. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
C8 Complement	1 mL Plasma (EDTA). Separate platelet-poor plasma immediately. Freeze as soon as possible. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
C9 Complement	1 mL Plasma (EDTA). Separate platelet-poor plasma immediately. Freeze as soon as possible. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
CA 125	1 mL Serum. Separate from clot as soon as possible.
CA 125	1 mL Fluid. Indicate source of fluid clearly on the requisition.
CA 15-3	1 mL Serum or Plasma (EDTA). Store and send frozen.
CA 19-9	1 mL Fluid. Indicate source.
CA 19-9	1 mL Serum.
Cadmium	13 mL Urine (24h). Collect and transfer in metal-free container. Collection date and 24 h volume must be provided.
Cadmium	15 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Provide collection date.
Cadmium	7 mL Whole blood (EDTA). Collect whole blood in contaminant-free tube. Send in metal-free polypropylene vial.
Cadmium	3 mL Erythrocyte. Collect heparin whole blood in contaminant-free tube. Prepare packed red cells. Store and send frozen.
Caffeine	0.5 mL Serum. Plasma is not acceptable. Monitor simultaneously with Theophylline. Draw trough specimen 0-4 h prior to next dose.
Caffeine - Urine	Not Available - See Note. Analysis is no longer routinely available. Testing for clinical trials may be available. Contact Customer Service at (416) 391-1499 ext. 248 or info@hicl.on.ca.
Calcitonin	2 mL Serum. Collect fasting specimen to avoid interference from lipemia. Store and send frozen. Plasma is not suitable for analysis.
Calcium	1 mL Fluid. Indicate source of fluid clearly on requisition.
Calcium	1 mL Serum. Draw without stasis.
Calcium	1 mL Urine (24 h). Collect urine with 10 mL of 6 mol/L (6N) HCl or acidify urine collection to pH 2 with HCl before aliquoting. State 24 h volume and collection date.
Calcium	13 mL Urine (Random). Collect and transfer in metal-free container.
Calcium	3 mL Erythrocyte. Collect heparin whole blood in contaminant-free tube. Prepare packed red cells. Store and send frozen.



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Calcium: Ionized	1 mL Serum. Draw without stasis in collection tube containing serum separator gel. Spin within 1h of collection to separate serum from cells but do not open tube. Store and send the unopened tube at 4°C but do not freeze. Specimen must be tested within 5 d of collection.
Calculus Analysis	Calculus. State origin of calculus.
California Encephalitis Virus	Multiple. . Please see [Public Health Laboratory Services].
Cannabinoids: Screen	10 mL Urine (Random).
Carbamazepine	5 mL Gastric lavage.
Carbamazepine	0.5 mL Serum. To monitor therapy, draw trough level specimen before the next dose is administered.
Carbamazepine Epoxide	2 mL Serum. Analysis includes Carbamazepine.
Carbon Monoxide	5 mL Whole blood (Heparin). Collect prior to start of Oxygen therapy. DO NOT OPEN TUBE. HICL must receive the sample prior to 12:00 h for same day analysis. Sample should be tested within 24 h of collection. Carbon Monoxide is measured as Carboxyhemoglobin.
Carcinoembryonic Antigen	3 mL Serum. Separate as soon as possible. Ontario patients: this test is funded for patients who meet the criteria listed on the funded-CEA form which must accompany funded requests. Requests for funded CEA analysis will be billed a transfer fee. Repeat testing is not funded if the assay was performed within the prior 4 weeks.
Carcinoembryonic Antigen	10 mL Fluid. Mark source of fluid clearly on the requisition.
Cardiolipin Antibodies	1 mL Serum. Store at 4°C. Submit a fresh specimen that can be tested within 3 days of collection. If this is not possible, store and send frozen.
Carnitine	1 mL Serum. Store and send frozen. Please provide age, gender and clinical history to facilitate interpretation of analytical findings and recommendation of further testing or consultation.
Carnitine	10 mL Urine (Random). Store and send frozen. Please provide age, gender and clinical history to facilitate interpretation of analytical findings and recommendation of further testing or consultation.
β-Carotene	4 mL Serum. Avoid hemolysis. Protect from light. Specimen must be labelled inside and outside light-protecting wrap. Store and send frozen.
Catecholamines	2 mL Plasma (EDTA). Patient must be supine for at least 15 minutes prior to and during specimen collection. Collect after overnight fast (water and non-caffeinated drinks permissible). Catechol drugs may interfere, including alpha methyl dopa, alpha-methyl-para-tyrosine, isoproteronol, dobutamine and carbidopa. Provide list of medications. Specimen should be kept cold and spun in a cold centrifuge as soon as possible, within 60 minutes of collection. Freeze immediately. If the specimen thaws, it is unsuitable for analysis.



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Catecholamines	25 mL Urine (24h). Collect urine in a container with 25 mL 6 mol/L (6N) HCl acid. The final pH must be maintained from 2 - 4. Restrict caffeine, nicotine and alcohol 24 h prior to collection. Discontinue Methyldopa (Aldomet) at least 5 days prior to collection. Other drugs usually do not interfere with this assay. State 24 h volume and collection date.
Celiac Profile	1 mL Serum. Analysis includes Gliadin Antibodies (IgA and IgG) and Tissue Transglutaminase IgA Antibodies with an Interpretation. The component parts may be ordered individually.
Celiac Profile	1 mL Serum. Analysis includes Gliadin (Deamidated) Antibodies and Tissue Transglutaminase Antibodies (see also separate listings).
Ceruloplasmin	1 mL Serum.
Chlamydia	Multiple. . Please see [Public Health Laboratory Services].
Chlamydia Isolation	Multiple. . Please see [Public Health Laboratory Services].
Chloral Hydrate	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Chloramphenicol	Serum. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Chlordiazepoxide	3 mL Serum.
Chloride	1 mL Fluid / Faeces. Indicate source of fluid clearly on requisition. Faeces: Submit 5 mL naturally fluid faeces. Formed faeces is not acceptable.
Chloride	1 mL Serum or Plasma (Heparin).
Chloride	1 mL Urine (24h). State 24 h collection volume and date.
Chloroquine	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or 249 or info@hicl.on.ca
Chlorothiazide	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Chlorpromazine	2 mL Serum. To monitor therapy draw trough specimen before the next dose is administered.
Chlorpromazine	10 mL Urine (Random).
Chlorpromazine	10 mL Gastric lavage.
Chlorpropamide	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 ext. 248 or info@hicl.on.ca.
Cholesterol	1 mL Serum or Plasma (Hep. or EDTA). Collect after a 14 h fast. A single 1 mL specimen is sufficient for Cholesterol and Triglycerides.



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Test Name	Specimen Requirements
Cholinesterase: Phenotype	2 mL Serum. Plasma not acceptable for analysis. Full phenotyping will be performed unless Cholinesterase TOTAL ONLY is specified on requisition. The Cholinesterase Phenotype includes Cholinesterase - Total, Dibucaine no., Fluoride no., Chloride no., Scoline no., and RO 02-0683 no. If patient had had surgery, collect specimen at least 24 h post-surgery.
Cholinesterase: Total Activity	2 mL Serum. Cholinesterase Phenotype will be analyzed (and billed) unless "Total Only" is specified.
Chorionic Gonadotrophin	1 mL Serum or Plasma (Hep. or EDTA). This assay measures intact β -hCG plus the free β -Subunit. Refer to separate listing for higher sensitivity assay for tumour monitoring.
Chorionic Gonadotrophin: Tumour Marker	1 mL Serum. Store and send frozen. This assay measures intact β -hCG plus the free β -Subunit.
Chromium	13 mL Urine (24h). Collect and transfer in metal-free container. Collection date and 24 h volume must be provided.
Chromium	3 mL Erythrocyte. Collect heparin whole blood in contaminant-free tube. Prepare packed red cells. Store and send frozen.
Chromium	13 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Provide collection date.
Chromium	7 mL Whole blood (EDTA). Collect whole blood in contaminant-free tube. Send in metal-free polypropylene vial.
Chromium	3 mL Plasma (EDTA). Collect plasma in contaminant-free tube. Separate as soon as possible and send in metal-free polypropylene vial. Results may be falsely elevated if the specimen is not separated within 30 minutes and/or hemolysis is present.
Chromium	1 mL Fluid. Indicate source. Transfer in metal-free vial.
Chromogranin A	2 mL Plasma (EDTA). Submit two 1 mL aliquots. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. This test is for 'Research Use Only'.
Chromosome Studies	Various. Tissue and amniotic fluid can also be tested. Consultation may be required before a sample is accepted for analysis. Samples received at HICL must have documentation to identify the Regional Cytogenetic Centre for analysis funded by the province of Ontario.
Cimetidine: Screen	10 mL Urine (Random).
Citric Acid	5 mL Urine (24h). Collect 24 h urine with 20 mL 6 mol/L (6N) HCl or acidify urine within 24 h of collection. Final pH must be between 1 - 3. Provide collection date and volume (in litres).
Citric Acid	5 mL Urine (Random). Acidify the aliquot within 24 h of collection with 6 mol/L (6N) HCl. Final pH must be between 1 - 3.
Clobazam	5 mL Gastric lavage.
Clobazam	10 mL Urine (Random). Assay includes Desmethylclobazam.



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Test Name	Specimen Requirements
Clobazam	1 mL Serum. To monitor therapy, draw trough specimen prior to next dose. Store and send frozen. Assay includes Desmethylclobazam. Do not confuse with Clonazepam.
Clomipramine	5 mL Gastric lavage.
Clomipramine	10 mL Urine (Random). Assay includes Desmethylclomipramine.
Clomipramine	3 mL Serum or plasma (EDTA). To monitor therapy, draw trough specimen prior to morning dose or 10 - 12 h after last drug administration. Separate as soon as possible. Assay includes Desmethylclomipramine.
Clonazepam	10 mL Urine (Random). Do not confuse this drug with Clobazam.
Clonazepam	5 mL Gastric lavage. Do not confuse this drug with Clobazam.
Clonazepam	3 mL Serum. To monitor therapy, draw trough specimen prior to next dose. Store and send frozen. Do not confuse with Clobazam.
Clorazepate	Serum. Clorazepate is measured as Desmethyldiazepam which is included with Diazepam analysis. Refer to separate listing for Diazepam.
Clostridium difficile	40 mL Faeces. Submit 2 x 20 mL liquid or very soft faeces that conforms to the shape of the container. The container must not contain any preservative. A single negative test is sufficient to rule out the presence of C. difficile disease. Repeat testing will not be done within 7 days.
Clozapine	1 mL Plasma (EDTA or Heparin). Store and send frozen. Assay includes Clozapine and Norclozapine.
Coag. Factor VIII Inhibitor: Porcine	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Coagulation Factor II: Biological	2 mL Plasma (Citrate). Separate platelet poor plasma into three plastic vials. Freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
Coagulation Factor II: Ecarin	2 mL Plasma (Citrate). Separate platelet poor plasma into three plastic vials. Freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
Coagulation Factor IX	2 mL Plasma (Citrate). Separate platelet poor plasma into three plastic vials. Freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
Coagulation Factor V	2 mL Plasma (Citrate). Separate platelet poor plasma into three plastic vials. Freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
Coagulation Factor VII	2 mL Plasma (Citrate). Separate platelet poor plasma into three plastic vials. Freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
Coagulation Factor VIII	2 mL Plasma (Citrate). Separate platelet poor plasma into 3 separate plastic vials. Freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. This assay is included in Von Willebrand Assessment (separate listing).



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Test Name	Specimen Requirements
Coagulation Factor VIII Inhibitor: Human	1 mL Plasma (Citrate). Separate and freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. Assay will only be performed if a preliminary Coagulation Factor 8 is abnormal (billed separately).
Coagulation Factor X	2 mL Plasma (Citrate). Separate platelet poor plasma into three plastic vials. Freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
Coagulation Factor XI	2 mL Plasma (Citrate). Separate platelet poor plasma into three plastic vials. Freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
Coagulation Factor XII	2 mL Plasma (Citrate). Separate platelet poor plasma into three plastic vials. Freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
Coagulation Factor XIII: Screen	2 mL Plasma (Citrate). Separate platelet-poor plasma into 3 plastic vials. Freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
Cobalt	3 mL Plasma (EDTA). Collect plasma in contaminant-free tube. Separate as soon as possible and send in metal-free polypropylene vial.
Cobalt	13 mL Urine (24h). Collect and transfer in metal-free container. Collection date and 24 h volume must be provided.
Cobalt	13 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Provide collection date.
Cobalt	6 mL Plasma (K2 EDTA). Collect whole blood in contaminant-free tube. Send in metal-free polypropylene vial.
Cocaine: Screen	10 mL Urine (Random).
Coccidiomycosis	Multiple. . Please see [Public Health Laboratory Services].
Codeine: Screen	10 mL Urine (Random). Serum and plasma are not suitable for analysis.
Cold Agglutinins	4 mL Serum. Allow to clot at 37°C and separate immediately. Do not use serum separator tubes (SST). Clotting at any other temperature invalidates results. Store and send frozen.
Complement: Total	2 mL Serum. Allow filled tube to clot at 22-37°C for 30-60 minutes. Centrifuge at room Temperature. Aliquot into storage tube and freeze as soon as possible. Store and send frozen. Plasma, grossly lipemic and grossly hemolyzed specimens are not suitable for analysis. Avoid freeze/thaw cycles. CH50 may be decreased by: delayed separation of serum, insufficient clotting, prolonged storage at room temperature, use of plasma, presence of immune complexes, cryoglobulins, bacteria or particulates.



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Test Name	Specimen Requirements
Complement: Total	1 mL Fluid (Synovial) and Serum. Collect 1 mL synovial fluid and 2 mL serum. Serum: Allow filled tube to clot at 22-37°C for 30-60 minutes. Centrifuge at room temperature. Aliquot into storage tube and freeze as soon as possible. Store and send frozen. Plasma, grossly lipemic and grossly hemolyzed specimens are not suitable for analysis. Avoid freeze/thaw cycles. CH50 may be decreased by: delayed separation of serum, insufficient clotting, prolonged storage at room temperature, use of plasma, presence of immune complexes, cryoglobulins, bacteria or particulates. Indicate sample types clearly on requisition and specimen vials.
Copper	13 mL Urine (24h). Collect and transfer in metal-free container. Collection date and 24 h volume must be provided.
Copper	13 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Provide collection date.
Copper	1 mL Fluid. Indicate fluid source on requisition. Transfer in metal-free container.
Copper	3 mL Plasma (EDTA). Collect plasma in contaminant-free tube. Separate as soon as possible and send in metal-free polypropylene vial.
Copper	3 mL Erythrocyte. Collect heparin whole blood in contaminant-free tube. Prepare packed red cells. Store and send frozen.
Copper	7 mL Whole Blood (K2 EDTA). Collect whole blood in contaminant-free tube. Send in metal-free polypropylene vial.
Copper	Tissue. Indicate source. Sample can be sent cold in paraffin block, formaldehyde or other preservative. Unpreserved specimens should be stored and sent frozen.
Cortisol	1 mL Serum. Indicate time of collection.
Cortisol	5 mL Urine (24h). State 24 h volume and collection date. Do not add any preservative.
Cortisol	1.0 mL Saliva. Collect saliva using collector provided by HICL. Indicate collection time on requisition and on collector: A.M. (08:00-10:00h), P.M. (15:00-17:00h) or Late Night (22:00-24:00h). Collect no earlier than 30 m after a meal or oral intake of drugs. Samples with obvious blood contamination from bleeding gums are unsuitable. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
Coxsackie A9	Multiple. . Please see [Public Health Laboratory Services].
Coxsackie B1	Multiple. . Please see [Public Health Laboratory Services].
Coxsackie B2	Multiple. . Please see [Public Health Laboratory Services].
Coxsackie B3	Multiple. . Please see [Public Health Laboratory Services].
Coxsackie B4	Multiple. . Please see [Public Health Laboratory Services].
Coxsackie B5	Multiple. . Please see [Public Health Laboratory Services].



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Test Name	Specimen Requirements
Coxsackie B6	Multiple. . Please see [Public Health Laboratory Services].
Creatine Kinase	1 mL Serum or Plasma (Hep. or EDTA).
Creatine Kinase: CK-MB Isoenzyme	0.5 mL Serum. Plasma (Heparin) is acceptable but has up to +12.5% bias. Consider specimen type analyzed when interpreting serial collections. Store and send frozen.
Creatinine	1 mL Fluid. Indicate source of fluid clearly on the requisition.
Creatinine	1 mL Serum or Plasma (Heparin). Age and gender must be provided for estimation of GFR (eGFR) from the measured creatinine. For patients of African descent the reported eGFR must be multiplied by 1.21. The calibration of this spectrophotometric assay is traceable to the isotope dilution- mass spectrometry (IDMS) method for creatinine.
Creatinine	5 mL Urine (24h). Submit aliquot in plastic transfer vial. Indicate 24 h volume and date of collection.
Creatinine (Amniotic Fluid)	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca
Creatinine Clearance	1 mL Serum and Urine (24h). Collect serum (or Plasma (Heparin)) and urine concurrently. Specify patient date of birth, gender, height & weight. State 24 h urine volume.
Cryofibrinogen	6 mL Serum & Plasma (EDTA). Collect and separate serum and plasma at 37°C. Submit 3 mL serum and 3 mL plasma stored and shipped cold (4 - 8°C).
Cryoglobulins	2 mL Serum. Collect specimen into tube pre-warmed to 37°C. Do not use gel-separator tube. Allow specimen to clot at 37°C prior to separation and centrifuge at 37°C if possible. Serum must never be refrigerated or frozen. Store and send at ambient temperature (20-25°C). Cr yoglobulin identification and estimation (IFE) will only be performed (and billed) when preliminary Screen is positive (and the cryoglobulin has not been previously identified.)
Cryptococcosis	Multiple. . Please see [Public Health Laboratory Services].
Cyanide	7 mL Whole blood (EDTA). Collect EDTA whole blood in contaminant-free tube. Send in metal-free polypropylene vial.
Cyclic AMP: Total	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Cyclic Citrullinated Peptide Antibodies	1 mL Serum.
Cyclobenzaprine	10 mL Urine (Random).



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Test Name	Specimen Requirements
Cyclosporine	2 mL Whole Blood (EDTA). To monitor therapy, draw specimen prior to next dose or 2 hours post-dose. Specimen is stable refrigerated several weeks. Ontario post-transplant patients: this test is funded for patients who have had a transplant performed in Ontario, for whom only a Specimen Transfer Fee of \$15.00 will be billed. If the transplant centre is not indicated the fee listed will be billed.
Cystatin C	1 mL Serum. Separate and freeze. Store and send frozen. If the specimen thaws it is unsuitable for analysis.
Cystinuria Monitoring	5 mL Urine (Random). Do not add preservative. Store and send frozen. Analysis includes Arginine, Cystine, Lysine and Ornithine. Please provide date of birth (day-month-year), gender and clinical history to facilitate interpretation of analytical findings and recommendation of further testing or consultation.
Cytology	Fluid. Please contact HICL Customer Service at (416) 391-1499 Ext. 248 or Ext. 249 for further information prior to collection of specimens.
Cytology	Sputum. Please contact HICL Customer Service at (416) 391-1499 Ext. 248 or Ext. 249 for further information prior to collection of specimens.
Cytomegalovirus	Multiple. . Please see [Public Health Laboratory Services].
DNA Antibodies	1 mL Serum. Double stranded DNA only measured. Single stranded assay not available.
7-Dehydrocholesterol	1 mL Serum or Plasma (Heparin). Protect specimen from light. Specimen must be labelled inside and outside light-protecting wrap. Store and send frozen.
7-Dehydrocholesterol	5 mL Amniotic Fluid. State gestational age, must be 14 weeks or greater. Centrifuge and send frozen supernatant. Protect specimen from light. Specimen must be labelled inside and outside light-protecting wrap. Store and send frozen.
Dehydroepiandrosterone Sulfate	1 mL Serum.
Dengue	Multiple. . Please see [Public Health Laboratory Services].
11-Deoxycortisol	1 mL Serum or Plasma (EDTA). Store and send frozen.
Deoxypyridinoline	Not available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416)391-1499 Ext. 248 or info@hicl.on.ca.
Desipramine	5 mL Gastric lavage.
Desipramine	10 mL Urine (Random).
Desipramine	3 mL Serum or plasma (EDTA). To monitor therapy, draw trough specimen prior to morning dose or 10 - 12 h after last drug administration. Separate as soon as possible.
Dextromethorphan	10 mL Urine or gastric lavage.



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Test Name	Specimen Requirements
Diazepam	3 mL Serum. To monitor therapy, draw trough specimen before the next dose is administered. Assay includes Desmethyldiazepam.
Digoxin	1 mL Serum. Collect post-distribution specimen 5 h after drug administration.
Digoxin: Free	2 mL Serum. Indicate collection date and time last dose was given. Includes Total Digoxin.
Dihydrotestosterone	3 mL Serum. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. Total Testosterone will be analyzed (and billed separately) only when specifically ordered.
Dimenhydrinate	Serum. Dimenhydrinate dissociates into Diphenhydramine and the counterion 8-chlorotheophylline. Refer to separate listing for Diphenhydramine.
D-Dimer	1 mL Plasma (Citrate). Separate and freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
Diphenhydramine	1 mL Serum.
Diphtheria Anti-toxin	Multiple. . Please see [Public Health Laboratory Services].
Disopyramide	1 mL Plasma (Heparin). Collect trough specimen prior to next dose.
Dopamine	20 mL Urine (24h). Collect 24 h urine with 10 mL 6N HCl. pH must be less than 3.0. Provide collection date and volume (in litres).
Doxepin	3 mL Serum or plasma (EDTA). To monitor therapy, draw trough specimen prior to morning dose or 10 - 12 h after last drug administration. Separate as soon as possible. Analysis includes Desmethyldoxepin.
Doxepin	5 mL Gastric lavage.
Doxepin	10 mL Urine (Random). Assay includes Desmethyldoxepin.
Drug Abuse Screen	10 mL Urine (Random). Includes screening assays for some commonly abused drugs: Barbiturates, Cannabinoids, Cocaine, Opiates and Benzodiazepines. Results are not for medicolegal purposes.
Drug Screen	25 mL Urine (Random). Include list of prescriptions and/or reason for analysis e.g. monitoring, compliance or suspected drug. Includes analysis by chromatography, immunoassay and enzymatic assay to detect over 900 drugs and their metabolites including: Amitriptyline, Amphetamines, Barbiturates, Benzodiazepines, Cocaine/metabolite, Codeine/metabolite, Dimen./ Diphenhydramine/metabolite, Ephedrine/Pseudo., Ethanol, MDMA (ecstasy), Methadone/metabolite, 6-Monoacetylmorphine, Morphine/metabolite, Nortriptyline/metabolite. Results are not for medicolegal purposes.



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Test Name	Specimen Requirements
Drug Screen	25 mL Gastric lavage. Includes analysis by chromatography, immunoassay and enzymatic assay to detect over 900 drugs and their metabolites including: Amitriptyline, Amphetamines, Barbiturates, Benzodiazepines, Cocaine/metabolite, Codeine/metabolite, Dimen./Diphenhydramine/metabolite, Ephedrine/Pseudo., Ethanol, MDMA (ecstasy), Methadone/metabolite, 6-Monoacetylmorphine, Morphine/metabolite, Nortriptyline/metabolite, Oxycodone/metabolite, Phenothiazines, Phenylpropanolamine, ranitidine/metabolite. Results are not for medicolegal purposes.
Drug Screen	6 mL Serum. Do not use gel-separator tubes. Include list of prescriptions and/or reason for analysis e.g. monitoring, compliance or suspected drug. Includes quantitative analysis for: Acetaminophen, Salicylates, Acetone, Ethanol, Isopropanol and Methanol. Includes Qualitative screening for : Tricyclic Antidepressants, Benzodiazepines and Barbiturates. Quantitative analysis of Barbiturates will be performed on positive screen specimens. Results are not for medicolegal purposes.
Eastern Equine Encephalitis Virus	Multiple. . Please see [Public Health Laboratory Services].
Echinococcosis	Multiple. . Please see [Public Health Laboratory Services].
Echovirus 1	Multiple. . Please see [Public Health Laboratory Services].
Echovirus 2	Multiple. . Please see [Public Health Laboratory Services].
Elastase 1	5 g Faeces. Store and send frozen.
Endomysial Antibodies	1 mL Serum.
Enolase, Neuron Specific	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Entamoeba Histolytica	Multiple. . Please see [Public Health Laboratory Services].
Epstein-Barr Virus	Multiple. . Please see [Public Health Laboratory Services].
Erythropoietin	2 mL Serum or Plasma (Heparin). EDTA plasma is not suitable. Avoid hemolysis. To allow for diurnal variation, collect specimens at consistent time of day - between 7:30 a.m. to 12:00 noon is recommended. Allow to clot at room temperature and then separate and freeze as soon as possible. Store and send frozen. If the patient is receiving recombinant erythropoietin analysis may not be valid and reference ranges are not applicable. - NO change to method or rr
Estradiol	1 mL Serum or Plasma (Hep. or EDTA). Store and send frozen.
Estriol: Unconjugated	1 mL Serum. Store and send cold.

**Specimen Requirements**

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Test Name	Specimen Requirements
Estrone	1 mL Serum or Plasma (Heparin). Store and send frozen.
Ethanol	5 mL Urine (Random). Analyzed by enzymatic assay. Analysis by GC is available - refer to "Alcohols Fractionation & Quantitation". Results not for medicolegal purposes.
Ethchlorvynol	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Ethosuximide	0.5 mL Serum. To monitor therapy, draw trough level specimen prior to next dose.
Ethyl Glucuronide	5.0 mL Urine (Random). Store and send frozen. A preliminary screen for ethanol and glucose is performed. Ethyl Glucuronide is analyzed in ethanol-negative specimens or ethanol-positive / Glucose-positive specimens for the listed fee. Ethanol-positive / glucose-negative specimens are rejected as indicative of recent ethanol use. A fee is applicable for rejected specimens.
Ethylene Glycol	2 mL Serum or Plasma (Fluoride). Seal.
Ethylene Glycol	5 mL Urine (Random). Seal.
Ethylene Glycol	5 mL Gastric lavage. Seal.
Euglobulin Fibrinolysis Time	1 mL Plasma (Citrate). Separate immediately and aliquot into 2 plastic vials. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. Patient should not be on anticoagulant therapy.
Extractable Nuclear Antigens Ab.	1 mL Serum. ENA Antibodies Screen will detect Anti: Sm, RNP, Ro/SSA, La/SSB, Scl 70 and Jo-1. If the screen is positive, identification will be performed for all listed antigens. Titres for ENA antibodies are not available.
Factor V Leiden Mutation	4.0 mL Whole Blood (ACD). Store and send at controlled ambient temperature.
Fat: Quantitation	Faeces (72h). Specimen must be collected directly into pre-weighed container approved by HICL - specimens in other containers will not be accepted. Do not fill container beyond 2/3 full - use multiple containers. State duration of collection. Sample may be stored and sent frozen. Patient diet should contain 100 g of fat per day for 3 d prior to and during collection. Use of glycerol suppositories will invalidate results. Wait 2 d after a barium swallow or enema. Extrapolation of reference values to durations other than 72 h must be done with caution.
Fat: Screen	1 g Faeces (Random). Sample must be submitted in a sealed container.
Fat: Screen	25 mL Urine (Random). Do not add any preservative to the urine collection.
Fatty Acids, Free: Total	1 mL Serum. Collect after a 12 h fast. Separate and freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. Specimens containing heparin are unsuitable for analysis - heparin plasma or patients receiving heparin therapy are unsuitable for analysis.



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Test Name	Specimen Requirements
Fatty Acids, Long Chain	2 mL Serum or plasma (EDTA). Collect fasting specimen. Separate and freeze as soon as possible. Store and send frozen.
Ferritin	2.0 Serum or Plasma (Heparin).
Fetal Blood (in Maternal Circulation)	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Fetal Lung Maturation	5 mL Amniotic fluid. Do not centrifuge specimen. Keep cold but do not freeze. Protect specimen from light. Specimen must be labelled inside and outside light-protecting wrap. Provide gestational age, and physician's name and phone number. Analyses are performed daily and results are available the next day.
α-Fetoprotein	1 mL Fluid. Identify source of fluid clearly on the requisition.
α-Fetoprotein	1 mL Serum. This assay is specifically intended for use as a tumour marker.
α-Fetoprotein	1 mL Amniotic fluid. Follow-up testing to Maternal Triple Marker Screening should be coordinated through regional programs in Ontario. This test is funded for Ontario patients. Fee shown covers transfers within Ontario only. For requests from outside Ontario contact HICL Customer Service at (416) 391-1499 ext. 248 or info@hicl.on.ca.
Fibrinogen: Functional	1 mL Plasma (Citrate). Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
Fibrinogen: Immunological	1 mL Plasma (Sodium Citrate). Separate and freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
Flunitrazepam	5 mL Urine (Random).
Fluoride	2 mL Serum or Plasma (EDTA). Aliquot with a plastic pipette and transfer in a plastic vial.
5-Fluorocytosine	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Fluoxetine	2 mL Serum. To monitor therapy, draw trough specimen prior to next dose. Assay includes the metabolite Norfluoxetine.
Flurazepam	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Fluvoxamine	2 mL Serum. Do not use gel-separator tubes. Patient should be on the drug at least one week prior to collection. Collect prior to morning dose. Store and send frozen.
Folate	1 mL Serum. Avoid hemolysis. Store and send frozen. Protect specimen from light. Specimen must be labelled inside and outside light-protecting wrap. Folate measured in Erythrocytes is the test of choice to evaluate Folate nutritional status - serum Folate may be misleading.



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Test Name	Specimen Requirements
Folate	2 mL Whole blood (EDTA). Fast freeze 2 mL whole blood. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. Provide Hematocrit for calculation of erythrocyte Folate. If hematocrit is unavailable, also submit 1 mL whole blood (not frozen). Reported result is not corrected for serum Folate.
Follicle Stimulating Hormone	1 mL Serum or Plasma (Hep. or EDTA).
Fragile X Chromosome	10 mL Various. Ideally sample should be analyzed within 48 h of collection however it is stable refrigerated up to five days or the whole blood can be transferred to a polypropylene transfer vial and sent frozen. A Kingston General Hospital Fragile X requisition should be submitted with samples providing the referring physician's name, phone number and full address. Samples will be transferred to the testing site and results will be forwarded back directly to the referring physician indicated. Fee shown applies to Ontario patients - for requests outside Ontario contact HICL at (416) 391-1499 ext. 248 or info@hicl.on.ca
Fructosamine	1 mL Serum.
Fructose	0.5 mL Semen. Store and send frozen.
Furosemide	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 ext. 248 or info@hicl.on.ca.
GM1 Ganglioside Antibody	2 mL Serum. Do not use gel-separator tubes. Separate into two 1 mL aliquots. Store and send frozen.
Gabapentin	2 mL Serum or Plasma (Heparin). Submit trough specimen collected just prior to next dose or post-dose at a time >75% of the dosing interval. Do not use gel-separator tubes. Store and send frozen.
Galactose-1-Phos. Urid. Trans.: Quant	1 mL Whole blood (Heparin). Store and send at 4°C. Do not freeze. Gel-separator tubes should not be used. Blood transfusion within the past 3 months invalidates results. Quantitation will only be performed if a preliminary screen (billed separately) is positive. Date of birth must be provided. If the patient is more than 1 y old, testing is only available on a consultation basis - contact HICL Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Galactose-1-Phos. Urid. Trans.: Screen	1 mL Whole blood (Heparin). Store and send at 4°C - do not freeze. Do not use gel-separator tubes. Blood transfusion within the past 3 months invalidates results. If Screen is positive, quantitation will be performed and billed. Date of birth must be provided. If the patient is more than 1 y old, testing is only available on a consultation basis - contact HICL Customer Service at (416) 391-1499 Ext 248 or info@hicl.on.ca.
Gastrin	2 mL Serum. Collect after a 14 h fast or prior to next feeding in infants. Store and send frozen. Freeze serum within 4 h of separation.
Gentamicin: Peak	1 mL Serum. To monitor Peak concentration, collect 1 h following I.M. or 15 min. following a 60 min. I.V. (or 30 min. after a 30 min. I.V.) drug administration. Collect with third dose if possible. Separate and freeze as soon as possible. Store and send frozen. Label Peak specimen and requisition clearly. Do not use gel-separator tubes.



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Test Name	Specimen Requirements
Gentamicin: Trough	1 mL Serum. To monitor Trough concentration, collect prior to I.M. or I.V. drug administration. Collect with third dose if possible. Separate and freeze as soon as possible. Store and send frozen. Label Trough specimen and requisition clearly. Do not use gel-separator tubes.
Gliadin (Deamidated) Antibodies	1 mL Serum. This assay is also included in the Celiac Profile (see separate listing).
Glibenclamide	Not available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416)391-1499 Ext. 248 or info@hicl.on.ca.
Glomerular Base. Membrane Antibody	1 mL Serum.
Glucagon	2 mL Plasma (EDTA). Collect 10 mL whole blood in a pre-chilled tube and add 0.5 mL Trasylol immediately. Separate immediately at 4°C and freeze. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. Heparin plasma is not suitable. Results are invalid unless Trasylol is added. Results and reference ranges are based on this collection procedure. No correction is required. Call Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca to order Trasylol.
Glucose	2 mL Plasma (Fluoride). Avoid hemolysis. Separate as soon as possible. Store and send frozen.
Glucose	5 mL Urine (24h). Keep urine cold during collection. State 24 h volume and date of collection. Store and send frozen.
Glucose	1 mL Fluid. Indicate source of fluid. Saliva/sputum are not suitable fluids for Glucose analysis.
Glucose-6-Phosphate Dehydrogenase	5 mL Whole Blood (Heparin). Do not freeze.
Glutamic Acid Decarboxylase Antibodies	1 mL Serum. Separate immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
γ-Glutamyltransferase	1 mL Serum.
Glutathione Peroxidase	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Glutethimide	3 mL Serum.
Glutethimide	10 mL Urine (Random).
Glutethimide	10 mL Gastric lavage.
Glycerol-Free	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.

**Specimen Requirements**

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Test Name	Specimen Requirements
Glycine	1 mL CSF. Store and send frozen. Specify age and diagnosis. Blood contamination may make result uninterpretable. Correct interpretation requires simultaneously sampled plasma for Amino Acids (billed separately).
β -2-Glycoprotein 1 Antibody	2 mL Serum. Separate serum into three aliquots. Freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
α -Glycoprotein Subunit	2 mL Serum. Store and send frozen. This assay measures the free α chain subunit common to Leutinizing (LH), Follicle Stimulating (FSH), Thyroid Stimulating (TSH) and Human Chorionic Gonadotropin (HCG) Hormones.
Gold	1 mL Serum or Plasma (EDTA). Collect serum in tube without clot-activator. Collect in contaminant-free tube. Separate as soon as possible and send in metal-free polypropylene vial. Do not use gel-separator collection tubes.
Gold (Urine)	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Gonorrhoea	Multiple. . Please see [Public Health Laboratory Services].
Growth Hormone	1 mL Serum. Collect after a 14 h fast. Store and send frozen. Indicate protocol used for stimulation or suppression. If available, provide glucose level.
Haloperidol	1 mL Plasma (Heparin). To monitor therapy, draw trough specimen prior to next dose. Do not use serum separator tubes (SST). Separate immediately. Store and send frozen.
Haptoglobin	1 mL Serum. Avoid hemolysis.
Haptoglobin Electrophoresis	2 mL Serum or Plasma (EDTA). Store and send frozen. Analysis includes qualitative assessment of Free Hemoglobin, Haptoglobin, Hemopexin-Heme Complex and Methemalbumin.
Heart Muscle Antibodies	1 mL Serum.
Heinz Bodies	5 mL Whole blood (EDTA). Screen must be performed on the day of collection. Contact HICL Customer Service at (416) 391-1499 ext. 248 or info@hicl.on.ca for instructions prior to specimen collection.
Helicobacter pylori	Multiple. . Please see [Public Health Laboratory Services].
Hemoglobin	1 mL Plasma (Heparin). Centrifuge specimen well and separate from cells as soon as possible. Avoid hemolysis.
Hemoglobin A1c (Glycated)	5 mL Whole blood (EDTA).
Hemoglobin Fractionation	5 mL Whole blood (ACD or EDTA). You must provide Hemoglobin, MCV, RDW, date of birth and racial origin of the patient. This information may not be included in the report but is required for interpretation of findings (included in report). Frozen specimens are unacceptable - do not freeze. Hemolyzed specimens may yield uninterpretable results. Hb H screen may not be done unless MCV is less than 75.
Hemosiderin	10 mL Urine (Random). Send a first morning urine collection.



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Test Name	Specimen Requirements
Heparin Co-Factor: Functional	0.5 mL Plasma (Citrate). Separate as soon as possible. Store and send frozen.
Heparin-PF4 Antibodies (HIT)	1.0 mL Plasma (Citrate). Separate and freeze as soon as possible. If the specimen thaws, it is unsuitable for analysis.
Heparin: Fondaparinux	1 mL Plasma (Citrate). Submit platelet poor plasma. Separate and freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
Heparin: Low Molecular Weight	1 mL Plasma (Citrate). Separate immediately into 2 plastic vials and freeze. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. Request must specify "Low Molecular Weight" (or "LMW") or specify the Heparin preparation (brand name) administered.
Heparin: Orgaran Heparinoid	1 mL Plasma (Citrate). Separate immediately into 2 plastic vials and freeze. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. Test request must specify "Orgaran" or heparin preparation (brand name) administered.
Heparin: Standard	1 mL Plasma (Citrate). Separate immediately into 2 plastic vials and freeze. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. Request must specify "Standard" or "Unfractionated" or specify heparin preparation (brand name) administered.
Hepatitis A Antibody - IgG	Multiple. . Please see [Public Health Laboratory Services].
Hepatitis A Antibody - IgM	Multiple. . Please see [Public Health Laboratory Services].
Hepatitis B Core Antibody	Multiple. . Please see [Public Health Laboratory Services].
Hepatitis B Surface Antigen	Multiple. . Please see [Public Health Laboratory Services].
Hepatitis B Surface Antigen Antibody	Multiple. . Please see [Public Health Laboratory Services].
Hepatitis B e Antibody	Multiple. . Please see [Public Health Laboratory Services].
Hepatitis B e Antigen	Multiple. . Please see [Public Health Laboratory Services].
Hepatitis C Antibody	Multiple. . Please see [Public Health Laboratory Services].
Heroin: Screen	10 mL Urine (Random). Heroin is detected as 6-Monoacetylmorphine. Serum and plasma are not suitable for analysis. Results are not for medico-legal purposes.
Herpes Isolation	Multiple. . Please see [Public Health Laboratory Services].
Herpes Simplex Virus	Multiple. . Please see [Public Health Laboratory Services].
Heterophile Antibodies	1 mL Serum.



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Test Name	Specimen Requirements
β-Hexosaminidase	2 mL Serum. Separate and freeze as soon as possible. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. Indicate patient's age, gender and race. For female patient indicate if pregnant or on oral contraceptives and submit 2 mL Plasma (Heparin) instead of serum. Tay-Sachs Carrier Detection: Please submit completed Tay-Sachs Requisition. Ontario clients may incur only a Transfer Fee.
High Molecular Weight Kininogen	2.0 mL Plasma (Citrate). Separate platelet poor plasma into 3 plastic vials. Freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
Histamine	5 mL Urine (24h). Collect 24h urine in container with 15 mL 6 mol/L (6N) HCl acid. Acid must be added prior to start of collection. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. Restrict histamine-rich foods (cheese, wine, red meats, spinach and tomatoes) for 5h prior to and during collection. Antihistamines taken within 48h prior to and during collection will interfere with assay. Provide total volume (in litres) and collection date.
Histamine	1 mL Plasma (EDTA). Collect in a pre-chilled tube and place immediately on ice. Separate at 4°C, split into 2 aliquots and freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. Avoid hemolysis. Patient must not have Histamine rich foods - cheese, wine, red meats, spinach and tomatoes within 5 h of collection. Antihistamine drugs should not be taken within 48 h prior to collection.
Histamine	5 mL Urine (3h). Begin 3-hour urine collection within 1 hour of allergic reaction. Collect with 1 mL 6 mol/L (6N) HCl. Acid must be added prior to start of collection. Keep cold during collection. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. Provide 3h collection volume and collection date. Restrict histamine-rich foods (cheese, wine, red meats, spinach and tomatoes) for 5h prior to and during collection. Antihistamines taken within 48h prior to and during collection will interfere with the assay.
Histone Antibodies	1 mL Serum. Store and send frozen.
Histoplasmosis	Multiple. . Please see [Public Health Laboratory Services].
Homocysteine	2 mL Plasma (EDTA). Specimen must be spun and separated within 1 hour of collection. Store and send frozen. A fasting sample is preferred but not mandatory.
Homogentisic Acid	10 mL Urine (Random). Store and send frozen.
Homovanillate	10 mL Urine (24h). Acidify aliquot with 6 mol/L (6N) HCl preservative. The pH should be 2 to 3. A 24 h urine collection is the optimal specimen type. Random collections may miss elevated levels of these hormone metabolites.
Homovanillate	10 mL Urine (random). Acidify aliquot with 6 mol/L (6N) HCl preservative. The pH should be 2 to 3. A 24 h urine collection is the optimal specimen type. Random collections may miss elevated levels of these hormone metabolites. Indicate "Random".



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Test Name	Specimen Requirements
Human Leukocyte Antigen B27	3 mL Whole blood (EDTA). Store and send at room temperature. Note: Specimen should be kept at consistent room temperature. Avoid hemolysis, do not freeze. Specimen must be received at HICL Monday to Thursday within 2 d of collection.
Human Leukocyte Antigens Typing	Various. This test is for non-transplant patients only. Contact HICL prior to specimen collection for specimen and submission requirements. Testing for transplant patients should be arranged with the transplant hospital. Contact Customer Service at (416) 391-1499 ext. 248 or info@hicl.on.ca.
Hydrochlorothiazide	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
β-Hydroxybutyrate	1 mL Serum or Plasma (Heparin or Fluoride). Store and send frozen.
γ-Hydroxybutyrate	5 mL Urine (random). Store and send cold.
17-Hydroxycorticosteroid	50.0 Not Available - See Note. Dehydroepiandrosterone Sulfate (DHEAS) and Cortisol are more specific and sensitive tests for disorders of adrenal steroid metabolism. 17-Hydroxycorticosteroids analysis is no longer routinely available. However, testing for research of clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
5-Hydroxyindole Acetic Acid	10 mL Urine (Random). Acidify sample within 24 h of collection using 6N HCl to a pH of less than 4 (just one or 2 drops). Indicate "Random". The patient must have a diet free of avocados, bananas, tomatoes, plums, eggplant, hickory nuts, pineapple and mollusks for two days prior to and during the collection. Patient should be off all drugs if possible.
5-Hydroxyindole Acetic Acid	10 mL Urine (24h). Collect urine with 25 mL of 6 mol/L (6N) HCl preservative. Indicate 24 h volume and date of collection. The patient must have a diet free of avocados, bananas, tomatoes, plums, eggplant, hickory nuts, pineapple and mollusks for 2 days prior to and during the collection. Patient should be off all drugs for 3 days if possible.
17-Hydroxyprogesterone	2 mL Plasma (Li-heparin). Serum is also acceptable. Avoid hemolysis. Freeze as soon as possible. Store and send frozen.
Hydroxyproline (Urine)	Not available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416)391-1499 Ext. 248 or info@hicl.on.ca.
Ibuprofen	3 mL Serum or plasma (Heparin).
IgG/Albumin Ratio	1 mL CSF. Store and send frozen. This test can be ordered in conjunction with Oligoclonal Banding.
Imipramine	5 mL Gastric lavage.
Imipramine	10 mL Urine (Random). Assay includes Desipramine.
Imipramine	3 mL Serum or plasma (EDTA). To monitor therapy, draw trough specimen prior to morning dose or 10 - 12 h after last drug administration. Separate as soon as possible. Assay includes Desipramine.



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Test Name	Specimen Requirements
Immune Complexes	1 mL Serum. Separate within 60 minutes of collection. Store and send frozen.
Immunoglobulin A	1 mL Serum. Store and send frozen. Indicate date of birth.
Immunoglobulin A (Saliva)	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Immunoglobulin A: CSF	Not Available - See Note. Testing is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Immunoglobulin D	1 mL Serum. Store and send frozen. Indicate date of birth. Submit separate aliquots if ordering other immunoglobulins as well.
Immunoglobulin D (By IFE)	1 mL Serum. Store and send frozen. Indicate date of birth. This test must be ordered with Protein Analysis: Immunofixation (billed separately).
Immunoglobulin E	1 mL Serum. Store and send frozen. Indicate date of birth. Submit separate aliquots if ordering other immunoglobulins as well.
Immunoglobulin E (By IFE)	1 mL Serum. Store and send frozen. Indicate date of birth. This test must be ordered with Protein Analysis: Immunofixation (billed separately).
Immunoglobulin E Ab. Single Allergen	1 mL Serum. This assay detects IgE antibodies specific to target allergens. Allergen(s) to be tested must be specified. See the [List of Allergens] that can be tested. Fee applies for each allergen tested - a surcharge may also apply for some rare allergens. For further information contact HICL Customer Service at (416) 391-1499 ext. 248 or info@hicl.on.ca
Immunoglobulin G	1 mL Serum. Store and send frozen. Indicate date of birth.
Immunoglobulin G	1 mL CSF. Indicate date of birth. Clearly indicate specimen type as CSF on requisition. Store and send frozen.
Immunoglobulin G Subclasses	1 mL Serum. Store and send frozen. Indicate date of birth and gender. The report will not include reference ranges when age and gender are not provided. Assay includes IgG1, IgG2, IgG3, IgG4.
Immunoglobulin G1 Subclass	1 mL Serum. Store and send frozen. Indicate date of birth and gender. The report will not include reference ranges when age and gender are not provided.
Immunoglobulin G2 Subclass	1 mL Serum. Store and send frozen. Indicate date of birth and gender. The report will not include reference ranges when age and gender are not provided.
Immunoglobulin G3 Subclass	1 mL Serum. Store and send frozen. Indicate date of birth and gender. The report will not include reference ranges when age and gender are not provided.
Immunoglobulin G4 Subclass	1 mL Serum. Store and send frozen. Indicate date of birth and gender. The report will not include reference ranges when age and gender are not provided.
Immunoglobulin M	1 mL Serum. Store and send frozen. Indicate date of birth.
Immunoglobulin M	1 mL CSF. Indicate date of birth. Clearly identify specimen type as CSF on requisition. Store and send frozen.



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Test Name	Specimen Requirements
Immunoglobulins: A, G and M	1 mL Serum. Store and send frozen. Indicate date of birth. Immunoglobulins A, G and M may be ordered individually.
Immunoglobulins: Bence Jones Protein	50 mL Urine (Random). Submit first morning voided specimen or aliquot of preservative-free 24h collection. Store and send frozen.
Immunoglobulins: Free Light Chains	3.0 mL Serum. Store and send frozen.
Indicans	Urine. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Influenza A	Multiple. . Please see [Public Health Laboratory Services].
Influenza B	Multiple. . Please see [Public Health Laboratory Services].
Inhaled Allergens	1 mL Serum.
Inhibin A	2 mL Serum. Plasma (EDTA or Heparin) is acceptable but Serum is preferred.
Insulin	1 mL Serum or Plasma (Li-Hep./EDTA). Avoid hemolysis. Separate and freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. Patients treated with monoclonal mouse antibodies or insulin (porcine or bovine) may have antibodies that may interfere in this assay. If ordering C-Peptide as well, submit a separate frozen specimen.
Insulin Antibodies	1 mL Serum.
Insulin-Like Growth Factor 1	1 mL Serum. Separate into 2 aliquots and freeze. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
Insulin-Like Growth Factor B.P. 1	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Insulin-Like Growth Factor B.P. 3	1 mL Serum. Plasma is not suitable for analysis. Separate and freeze as soon as possible. Store and send frozen.
Intralipid	0.5 mL Serum or Plasma (sodium heparin).
Intrinsic Factor Antibodies	3 mL Serum. Submit a separate aliquot if Parietal Cell Antibodies is also requested.
Iodine	3 mL Plasma (EDTA). Collect plasma in contaminant-free tube. Separate as soon as possible and send in metal-free polypropylene vial.
Iodine	13 mL Urine (Random). Collect and transfer in metal-free container.
Iodine	13 mL Urine (24h). Collect and transfer in metal-free container. Collection date and 24 h volume must be provided.
Iron	1 mL Serum. Plasma is not suitable. Analysis includes Iron Binding Capacity.



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Test Name	Specimen Requirements
Iron	50 mL Urine (24h). Provide collection date and volume (in litres). Assay measure both free and bound (chelated) iron.
Iron	1 g Tissue. Indicate source. Sample may be sent cold in paraffin block, formaldehyde or other preservative. Unpreserved specimens should be stored and sent frozen.
Isocoproporphyrin	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Isoniazid	3 mL Serum or PL (Hep). Collect trough specimen pre-dose or peak specimen 2 h post-dose. Store and send frozen.
Isoniazid	Urine (Random). Analysis is not longer available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Ketamine: Screen	5 mL Urine (Random).
17-Ketogenic Steroids	Not Available - See Note. Dehydroepiandrosterone Sulfate (DHEAS) and Cortisol are more specific and sensitive tests for disorders of adrenal steroid metabolism. 17-Ketogenic Steroids analysis is no longer routinely available. However, testing for research of clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Ketones	2 mL Serum or Plasma (Fluoride).
Ketones	1 mL Fluid. Indicate source of fluid.
17-Ketosteroid	Not Available - See Note. Dehydroepiandrosterone Sulfate (DHEAS) and Cortisol are more specific and sensitive tests for disorders of adrenal steroid metabolism. 17-Ketosteroids analysis is no longer routinely available. However, testing for research of clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Lactate Dehydrogenase	1 mL Serum or plasma (Heparin). Separate as soon as possible. Avoid hemolysis. Store and send at room temperature. Do not refrigerate or freeze.
Lactate Dehydrogenase	1 mL Fluid. Indicate source of fluid on requisition. Store and send at room temperature. Do not refrigerate or freeze.
D-Lactic Acid	1 mL Serum or plasma (EDTA). Separate and freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. L-Lactic Acid analysis is available - refer to separate test listing. "D-" must be specified since L-Lactic Acid analysis will be performed whenever "D-" or "L-" is not specified.
L-Lactic Acid	1 mL Plasma (Fluoride). Keep cool until separation. Separate and freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. D-Lactic Acid analysis is available - refer to separate test listing. L-Lactic Acid is analyzed if "L-" or "D-" is not specified.
L-Lactic Acid	1 mL Fluid. Collect in or transfer immediately to tube containing a glycolytic inhibitor (e.g. fluoride, BD#366383 or 366470). After mixing transfer to polypropylene transfer vial and freeze immediately. Store and send frozen.



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Test Name	Specimen Requirements
Lactose Absorption Test	1 mL Plasma (Fluoride). After an overnight fast, give patient a Lactose loading dose of 1 g/kg body weight and collect plasma at 0, 0.5, 1 and 2 h post-dose. Glucose levels are measured to evaluate Lactose conversion and absorption.
Lamotrigine	2 mL Serum. Collect trough level prior to next dose administration.
Lead	7 mL Whole blood (EDTA). Collect whole blood in contaminant-free tube. Send in metal-free polypropylene vial. Analysis includes Zinc Protoporphyrin (ZPP) unless "Lead only" is specified.
Lead	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck. If unable to weigh the hair, try to submit 1 to 2 heaping teaspoons (10-20 mL). Submit in a plastic bag. Bleaches, dyes and rinses may interfere.
Lead	13 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Provide collection date.
Lead	13 mL Urine (24h). Collect and transfer in metal-free container. Collection date and 24 h volume must be provided.
Lead	0.05 g Nail. Remove nail polishes, colours and glazes prior to collection. If unable to weigh the clippings, try to submit all clippings from both hands. Submit in a plastic bag.
Lead	1 mL Fluid. Indicate source. Collect and transfer in metal-free vial.
Legionnaires' Disease	Multiple. . Please see [Public Health Laboratory Services].
Leptin	1 mL Serum or plasma (EDTA). Separate as soon as possible. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. This test is for `Research Use Only`.
Leptospirosis	Multiple. . Please see [Public Health Laboratory Services].
Lidocaine	2 mL Serum or Plasma (Li Heparin). Store and send frozen. Do not use gel-separator tubes.
Lipase	1 mL Fluid. Indicate source of fluid clearly on requisition.
Lipase	1 mL Serum or plasma (Heparin). Avoid collection tubes with stoppers lubricated with glycerol.
Lipoprotein Fract.: Precipitation	3 mL Plasma (EDTA). Collect after a 14 h fast. Store and send frozen. Age and sex must be provided for results interpretation. This test is ordered routinely for HDL/LDL Cholesterol or Lipoprotein Analysis requests. Reports will include measured Triglycerides, Total and HDL Cholesterol, calculated LDL Cholesterol and Lipoproteinemia Phenotyping.



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Test Name	Specimen Requirements
Lipoprotein Fract.: Ultracentrif.	7 mL Plasma (EDTA). Collect after 14h fast. Cool on water ice immediately. Separate plasma as soon as possible within 1h (or within 3h with refrigerated centrifuge) with 30 minute spin for better cell separation. Avoid transferring any of the white cell (buffy coat) layer. Transfer in polypropylene vial (not polystyrene). Store and send cold. Do not freeze. Specimen must be received within 4d of collection. Interpretation requires age and sex. Test will not be done if Triglycerides and Cholesterol are normal. Report will include Cholesterol and Triglycerides measured in ultracentrifugal supernatant and infranatant and interpreted Lipoprotein Phenotype.
Lipoprotein a	1 mL Serum or plasma (EDTA). Samples must be separated within 4 h of collection. Store and send frozen. This test is only done for research purposes.
Listeriosis	Multiple. . Please see [Public Health Laboratory Services].
Lithium	1 mL Serum. Collect at least 12 h after last dose was administered.
Liver Cytosol (LC-1) Antibodies	Serum. Contact HICL prior to specimen collection for further details (e.g. specimen handling instructions, fee, etc.)
Liver Kidney Microsomal Antibodies	2 mL Serum. Grossly hemolyzed, lipemic or microbially contaminated specimens may interfere with analysis.
Lorazepam	10 mL Urine (Random).
Lorazepam	5 mL Gastric lavage.
Lorazepam	3 mL Serum. To monitor therapy, draw trough specimen prior to next dose. Store and send frozen.
Loxapine	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Luteinizing Hormone	1 mL Serum or Plasma (Hep. or EDTA).
Lyme Disease	Multiple. . Please see [Public Health Laboratory Services].
Lymphocyte Marker Analysis	10 mL Whole blood (EDTA). Send two tubes of blood. Specimens must be analyzed within 24 h of collection. Maintain at ambient temperature (20°C). HICL must receive specimens same day as collected, prior to 1500 h Monday to Thursday. Some markers may only be available on consultation. Indicate diagnosis. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca for further information concerning timely transportation arrangements.
Lymphocytic Choriomeningitis Virus	Multiple. . Please see [Public Health Laboratory Services].
MTHF Reductase	Various. See Note. Refer to listing for Molecular Genetics.



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Test Name	Specimen Requirements
Macroamylase	1 mL Serum.
α-2-Macroglobulin	1 mL Serum.
Macroprolactin	2 mL Serum. Separate into two aliquots. Store and send frozen. Assay includes Prolactin.
Magnesium	1 mL Serum. Collect after a 14 h fast. Draw without stasis. Avoid hemolysis. Separate as soon as possible.
Magnesium	5 mL Whole blood (Heparin).
Magnesium	50 mL Urine (Random).
Magnesium	50 mL Urine (24h). Provide collection date and volume (in litres).
Magnesium (Faeces)	Not Available - See Note. Testing is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Manganese	3 mL Plasma (EDTA). Collect plasma in contaminant-free tube. Separate as soon as possible and send in metal-free polypropylene vial. Results may be falsely elevated if the specimen is not separated within 30 minutes and/or hemolysis is present.
Manganese	7 mL Whole blood (EDTA). Collect whole blood in contaminant-free tube. Send in metal-free polypropylene vial.
Manganese	13 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Provide collection date.
Manganese	13 mL Urine (24h). Collect and transfer in metal-free container. Collection date and 24 h volume must be provided.
Maprotiline	5 mL Gastric lavage.
Maprotiline	10 mL Urine (Random).
Maprotiline	3 mL Serum or Plasma (EDTA). To monitor therapy, draw trough specimen prior to next dose or 10 - 12 h after last drug administration. Separate as soon as possible.
Maternal Serum Screen	1.0 mL Serum. Specimen must be accompanied by required clinical information - contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca for requisition. Results will be reported directly to the ordering physician, including α-Fetoprotein, Estriol, human Chorionic Gonadotrophin and an interpretation. This test is funded for Ontario residents when submitted with a properly completed Maternal Serum Screening Data Sheet. Only a Specimen Transfer Fee of \$15.00 will be billed.
Measles	Multiple. . Please see [Public Health Laboratory Services].
Meat Fibres	Not Available - See Note. Testing is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.



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Test Name	Specimen Requirements
Meperidine: Screen	10 mL Urine (Random).
Mephenytoin	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416)391-1499 Ext. 248 or info@hicl.on.ca.
Mephobarbital	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Meprobamate	3 mL Serum.
Meprobamate	10 mL Urine (Random).
Meprobamate	10 mL Gastric lavage.
Mercury	13 mL Urine (24h). Collect and transfer in metal-free container. Collection date and 24 h volume must be provided. Avoid seafood consumption for three days prior to consumption.
Mercury	13 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Provide collection date. Avoid seafood consumption for three days prior to collection.
Mercury	7 mL Whole blood (EDTA). Collect whole blood in contaminant-free tube. Send in metal-free polypropylene vial.
Mercury	0.05 g Nail. Remove nail polishes, colors and glazes prior to collection. If unable to weigh the clippings, try to submit all clippings from both hands. Submit in plastic bag.
Mercury	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck. If unable to weigh the hair, submit 1 to 2 teaspoons (10-20 mL). Submit in a plastic bag. Bleach, dyes and rinses may interfere.
Metabolic Screen	5 mL Urine (Random). Do not add preservative. Store and send frozen. Analysis includes DNPH, nitroprusside and thin-layer chromatography. Amino Acid quantitation will be performed and billed if indicated by screen results. Indicate suspected metabolic disorder. Please provide date of birth (day-month-year), gender and clinical history to facilitate interpretation of analytical findings and recommendation of further testing or consultation.
Metanephrines	3 mL Plasma (EDTA). Collect fasting sample. Separate into 2 aliquots and freeze. Patient must abstain from smoking tobacco for at least 4 h prior to collection. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
Metanephrines	10 mL Urine (24h). Collect urine in a container with 25 mL 6 mol/L (6N) HCl acid. The final pH of the urine must be maintained from 2 - 4. Restrict caffeine, nicotine and alcohol 24 h prior to collection. Discontinue Methyldopa (Aldomet) at least 5 days prior to collection. Other drugs usually do not interfere with this assay. State 24 h volume and collection date.
Methadone	1 mL Serum. Do not use gel-separator tubes. Separate and freeze within 2 hours of collection. Store and send frozen. Multiple collections must be clearly identified and collection time should be recorded on both the requisition and the specimen to facilitate interpretation of results.



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Test Name	Specimen Requirements
Methadone	1 mL Fluid. Store and send frozen. Indicate fluid source or composition.
Methadone	10 mL Urine (Random). Analysis detects the metabolite as well.
Methaqualone	5 mL Urine (Random).
Methaqualone (Serum)	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Methemalbumin	5 mL Plasma (Heparin).
Methemoglobin	5 mL Whole Blood (Heparin). EDTA specimen not acceptable. Specimen must be received at HICL by 1:00 pm within 24 h of collection. Notify HICL at (416) 422-3000 Ext. 300 prior to shipping specimen.
Methotrexate	2 mL Serum. Collect specimen 0.5 h following low I.V. dose or 2 h after low oral dose. Or collect at 24, 48 and 72 h following high I.V. dose. Separate as soon as possible. Protect specimen from light. Specimen must be labelled inside and outside light-protecting wrap.
Methotrimeprazine	3 mL Serum.
Methotrimeprazine	10 mL Gastric lavage.
Methotrimeprazine: Screen	10 mL Urine (Random).
Methsuximide	2 mL Serum or Plasma (Heparin). Normethsuximide is analyzed and reported. Methsuximide is rapidly metabolized to the active metabolite Normethsuximide. Normethsuximide is the major form found in serum/plasma.
Methylenedioxy Amphetamine: Screen	25 mL Urine (Random).
Methylmalonic Acid	10 mL Urine (Random). Indicate date of birth and clinical diagnosis. Store and send frozen. This test may not be done if a preliminary Organic Acid test is normal.
Methylmalonic Acid	3 mL Plasma (EDTA). Separate plasma within 6 hours of collection. Store and send frozen.
Methylphenidate: Screen	10.0 Urine (Random).
Methyprylon	3 mL Serum.
Methyprylon	10 mL Gastric lavage.
Methyprylon: Urine	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.



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Test Name	Specimen Requirements
Mexilitine	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 ext. 248 or info@hicl.on.ca.
β-2-Microglobulin	1 mL Serum. TEST DONE AT LON IMMUNOLOGY
β-2-Microglobulin	5 mL Urine (Random). Collect and submit a fresh urine collection: ask patient to void (discard this urine), drink a glass of water and then one hour later collect a urine for submission. Check pH and if necessary adjust to pH 5.5 - 8.0 using 1M NaOH. β-2-microglobulin is unstable in acidic urine. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
β-2-Microglobulin	5 mL Urine (Fetal). Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
β-2-Microglobulin - Fluid	Not available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416)391-1499 Ext. 248 or info@hicl.on.ca.
Milk Antibodies	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Mitochondrial Antibodies	1 mL Serum.
Molecular Genetics	Various. See note Contact HICL Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca for test availability and specimen requirements. Testing for Ontario patients is available at funded Molecular Genetics laboratories. A Molecular Genetics Analysis requisition must be submitted. Specimens will be forwarded to the test site and results will be sent directly to the referring physician.
Molybdenum	3 mL Plasma (EDTA). Collect plasma in contaminant-free tube. Separate as soon as possible and send in metal-free polypropylene vial.
Molybdenum	13 mL Urine (24h). Collect and transfer in metal-free container. Collection date and 24 h volume must be provided.
Molybdenum	6 mL Plasma (K2 EDTA). Collect whole blood in contaminant-free tube. Send in metal-free polypropylene vial.
Mucopolysaccharides: Identification	10 mL Urine (Random). Mucopolysaccharides Identification is only performed when a preliminary Screen (separate listing) is positive. Mucopolysaccharides Screen and Identification are billed separately. Please provide age, gender and clinical history to facilitate interpretation of examination findings and recommendation of further testing or consultation.
Mucopolysaccharides: Screen	5 mL Urine (Random). Avoid first morning collection. Store and send frozen. If positive Mucopolysaccharides Identification (separate listing) will be performed and billed. Please provide age, gender and clinical history to facilitate interpretation of analytical findings and recommendation for further testing or consultation.
Mumps - Soluble	Multiple. . Please see [Public Health Laboratory Services].
Mumps Virus	Multiple. . Please see [Public Health Laboratory Services].



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Test Name	Specimen Requirements
Mycophenolic Acid	1.5 mL Plasma (EDTA). Provide ordering physician's name and transplant site. Specimens should be maintained at 4°C or stored and send frozen.
Mycoplasma Isolation	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Mycoplasma PN	Multiple. . Please see [Public Health Laboratory Services].
Myoglobin	1 mL Plasma (Li. Heparin). Store and send frozen unless specimen can be received at HICL same day as collected. Include a phone number where urgent results can be phoned.
Myoglobin	10 mL Urine (Random). Adjust the pH to 8 - 9 and freeze immediately after collection. If the specimen thaws, it is unsuitable for analysis.
Narcotic Analgesics	10 mL Urine (Random). Includes detection of Codeine, Hydrocodone, Methadone, Hydromorphone, Meperidine, Morphine, Pethidine, Pentazocine and Propoxyphene.
Netilmicin	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Neuromyelitis Optica Antibody (IgG)	1 mL Serum. Separate as soon as possible. Store and send frozen. Hemolyzed and lipemic specimens are not suitable.
Neutrophil Cytoplasmic Antibody	1 mL Serum. Both P-ANCA (Perinuclear/MPO) and C-ANCA (Cytoplasmic/PR3) will be reported unless only one of them is specified on the requisition. P and C ANCA may be ordered individually - see separate listings.
Neutrophil Cytoplasmic Antibody (C only)	1 mL Serum. Both P- and C-ANCA will be performed (and billed) unless C-ANCA alone is specified.
Neutrophil Cytoplasmic Antibody (P only)	1 mL Serum. Both P- and C-ANCA will be performed (and billed) unless P-ANCA alone is specified.
Nickel	3 mL Plasma (EDTA). Collect plasma in contaminant-free tube. Separate as soon as possible and send in metal-free polypropylene vial.
Nickel	7 mL Whole Blood (EDTA). Collect whole blood in contaminant-free tube. Send in metal-free polypropylene vial.
Nickel	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck. If unable to weigh the hair, submit 1 to 2 heaping teaspoons (10-20 mL). Submit in a plastic bag. Bleach, dyes and rinses may interfere.
Nickel	13 mL Urine (24h). Collect and transfer in metal-free container. Collection date and 24 h volume must be provided.
Nickel	13 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Provide collection date.
Nicotine: Screen	10 mL Urine (Random). Assay includes metabolite cotinine.
Nitrazepam	3 mL Serum. To monitor therapy, draw trough specimen prior to next dose. Store and send frozen.



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Test Name	Specimen Requirements
Nitrazepam	10 mL Urine (Random).
Nitrazepam	5 mL Gastric lavage.
Nitrogen (Feces)	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Nitrogen (Urine)	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 ext. 248 or info@hicl.on.ca.
Non-Spec. Coagulation Inhib.	2 mL Plasma (Citrate). Separate and freeze plasma immediately after collection. If the specimen thaws, it is unsuitable for analysis. Indicate if the patient is on heparin or coumadin.
Nortriptyline	10 mL Gastric lavage.
Nortriptyline	10 mL Urine (Random).
Nortriptyline	3 mL Serum or Plasma (EDTA). To monitor therapy, draw trough specimen prior to morning dose or 10 - 12 h after last drug administration. Separate as soon as possible.
Nuclear Antibodies	1 mL Fluid. Indicate source of fluid clearly on the requisition.
Nuclear Antibodies	1 mL Serum. Store and send frozen. Reports may be delayed for confirmation of positive results. Plasma is not suitable for this assay.
5' Nucleotidase	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Olanzapine	2 mL Serum or Plasma (heparin). Submit trough specimen collected just prior to next dose or post-dose at a time >75% of the dosing interval. Do not use gel-separator tubes. Store and send frozen.
Olanzapine	5 mL Urine.
Oligosaccharides	10 mL Urine (Random). Avoid first morning collection. Store and send frozen. Provide date of birth, sex and collection date. Mucopolysaccharides are not included in this assay. If Mucopolysaccharides are also being ordered, submit a separate specimen (see separate listing).
Opiates: Screen	10 mL Urine (Random).
Organic Acids	10 mL Urine (Random). State age and clinical diagnosis. Store and send frozen. Early morning sample is preferred.
Orotic Acid	10 mL Urine (Random). Acidify sample within 24h of collection using 6 mol/L HCl to pH of less than 2. Freeze if stored overnight. Please provide age, gender and clinical history to facilitate interpretation of analytical findings and recommendation of further testing or consultation.
Osmolality	5 mL Urine (Random or 24h).

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Test Name	Specimen Requirements
Osmolality	5 mL Fluid / Faeces. Indicate source of fluid clearly on requisition. Faeces: Submit 5 mL naturally fluid faeces. Formed faeces is not acceptable.
Osmolality	3 mL Serum.
Osteocalcin	1 mL Serum. Separate immediately and split into 2 aliquots. Freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. Avoid hemolysis.
Ovarian Antibodies	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Oxalate	10 mL Urine (Random). Acidify the aliquot within 24 h of collection with 6 mol/L (6N) HCl. Final pH should be less than 3.
Oxalate	10 mL Urine (24h). Collect 24 h specimen with 20 mL of 6 mol/L (6N) HCl or acidify aliquot within 24 h of collection. Final pH should be less than 3.
Oxazepam	3 mL Serum.
Oxycodone: Screen	5 mL Urine (Random).
Pancreatic Islet Cell Antibodies	1 mL Serum. Separate and freeze as soon as possible.
Parainfluenza 1	Multiple. . Please see [Public Health Laboratory Services].
Parainfluenza 2	Multiple. . Please see [Public Health Laboratory Services].
Parainfluenza 3	Multiple. . Please see [Public Health Laboratory Services].
Paraneoplastic Autoantibody Panel	1 mL Serum. Positive results are confirmed by Western blot.
Paraneoplastic Autoantibody Panel	1 mL CSF. Positive results are confirmed by Western blot.
Parathyroid Hormone (Intact)	1 mL Plasma (EDTA) or Serum. Plasma (heparin) is not suitable. If serum is being submitted, spin and separate immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. Do not use samples stabilized with azide.
Parathyroid Hormone-Related Peptide	2 mL Serum. Separate and freeze within 2 h of collection. Do not use gel-separator tubes. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
Parietal Antibodies	1 mL Serum. A separate aliquot must be submitted if Intrinsic Factor Antibodies is also requested.
Parotid Antibodies	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Paroxetine	3 mL Serum or Plasma (Heparin). Collect 10 - 14 h after last dose. Store and send frozen.



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Test Name	Specimen Requirements
Partial Thrombo. Time (PTT)	5 mL Whole blood (Citrate). Specimen must be received within 4h of collection. State if patient is on anticoagulant therapy.
Pathology Services	Variable. See Note. Please contact Customer Service at info@hicl.on.ca or call (416) 391-1499 ext. 248 for further information on Pathology services.
Paul Bunnell-David	Multiple. . Please see [Public Health Laboratory Services].
Pentobarbital	3 mL Serum.
Pentobarbital	10 mL Urine (Random).
Pentobarbital	10 mL Gastric lavage.
Percocet	Not Available - See Note. Percocet contains acetaminophen and oxycodone. See separate listing for Acetaminophen (serum) and Oxycodone (urine).
Percodan	Not Available - See Note. Percodan contains acetylsalicylic acid (ASA) and oxycodone. See separate listing for ASA (serum) and Oxycodone (urine).
Pertussis	Multiple. . Please see [Public Health Laboratory Services].
Phenacetin	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Phencyclidine: Screen	10 mL Urine (Random).
Phenobarbital	10 mL Urine (Random).
Phenobarbital	10 mL Gastric lavage.
Phenobarbital	0.5 mL Serum. To monitor therapy, draw a trough level specimen before the next dose is administered.
Phenolphthalein	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 ext. 248 or info@hicl.on.ca.
Phenothiazines: Screen	10 mL Urine (Random).
Phensuximide	Not Available - See Note. Analysis is no longer routinely available. Testing for research or 391-1499 Ext. 248 or info@hicl.on.ca.
Phenytoin	0.5 Serum. To monitor therapy, draw trough level specimen before the next dose is administered.
Phenytoin: Free	1 mL Serum. Assay includes Free and Total Phenytoin. Do not use gel-separator collection tubes.
Phosphate	1 mL Serum. Avoid hemolysis. Separate as soon as possible.
Phosphate	10 mL Urine (24h). Collect 24 h specimen with 10 mL 6 mol/L (6N) HCl. Aliquot may be acidified after collection by adding HCl to bring pH to less than 4. State collection date and volume.



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Test Name	Specimen Requirements
Phytanic Acid	2 mL Serum or Plasma (Heparin). Store and send frozen.
Pinworm Prep	Multiple. . Please see [Public Health Laboratory Services].
Plasminogen	0.5 mL Plasma (Citrate). Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
Plasminogen Activator Inhibitor	0.5 mL Plasma (Citrate). Patient should not be on anticoagulant therapy. Collect fasting morning specimen. Chill immediately and centrifuge at 4°C. Separate and freeze immediately. Store and send frozen. If thawed, specimen is unsuitable for analysis.
Platelet Associated IgG	Not Available - See Note. Testing is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Poliovirus 1	Multiple. . Please see [Public Health Laboratory Services].
Poliovirus 2	Multiple. . Please see [Public Health Laboratory Services].
Poliovirus 3	Multiple. . Please see [Public Health Laboratory Services].
Porphobilinogen Deaminase	7 mL Whole blood (Heparin). Gel-separator tubes not acceptable. Protect specimen from light. Specimen must be labelled inside and outside light-protecting wrap. Do not freeze. Store and send cold. Provide hematocrit for calculation of result.
Porphyryn Precursors (ALA & PBG)	20 mL Urine (Random). Protect specimen from light. Specimen must be labelled inside and outside the light-protecting wrap. Provide collection date. Freeze as soon as possible. Store and send frozen. This collection is not suitable for Porphyryn analysis. Analysis includes Porphobilinogen (PBG) and Δ -Aminolevulinic Acid (ALA).
Porphyryn Precursors (ALA & PBG)	20 mL Urine (24h). Protect specimen from light. Specimen must be labelled inside and outside the light-protecting wrap. Provide 24h urine volume and collection date. Freeze as soon as possible. Store and send frozen. This collection is not suitable for Porphyryn analysis. Analysis includes Porphobilinogen (PBG) and Δ -Aminolevulinic Acid (ALA).
Porphyryns: Quantitation	50 g Faeces (Random). Protect specimen from light. Specimen must be labelled inside and outside light-protecting wrap. Store and send frozen. Quantitative analysis may only be done if a preliminary Porphyryn screen is positive.
Porphyryns: Quantitation	7 mL Whole blood (EDTA). Protect specimen from light. Specimen must be labelled inside and outside light-protecting wrap. Do not freeze. Hematocrit must be provided to allow calculation of result.
Porphyryns: Quantitation	20 mL Urine (Random). pH should be adjusted with sodium carbonate immediately following collection. Final pH should be 8 to 10. Protect specimen from light. Specimen must be labelled inside and outside light-protecting wrap. Indicate random collection and collection date. Store and send frozen. Quantitation may only be done if a preliminary screen is positive. This collection is not suitable for PBG/ALA analysis.



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Test Name	Specimen Requirements
Porphyrins: Quantitation	20 mL Urine (24h). Collect 24h urine with 5 g sodium carbonate. Final pH should be 8 to 10. Protect from light - collect in dark bottle or wrap in foil. Keep cool during collection. Provided volume (in litres) and collection date. Store and send frozen. This collection is not suitable for ALA/ PBG testing. Quantitation may only be done if a preliminary screen (billed separately) is positive.
Porphyrins: Quantitation - Plasma	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248.
Porphyrins: Screen	20 mL Urine (Random). pH should be adjusted with sodium carbonate immediately following collection. Final pH should be 7 to 10. Protect from light - collect in dark bottle or wrap with foil. Indicate random collection and collection date. Store and send frozen. Quantitation will be performed and billed (see separate listing) when the screen is positive. This collection is not suitable for ALA/PBG testing.
Porphyrins: Screen	50 g Faeces (Random). Protect specimen from light - use dark container or wrap in foil. Store and send frozen. Quantitation will be performed and billed (see separate listing) when the screen is positive. Specimen must be labelled inside and outside light-protecting wrap.
Porphyrins: Screen	20 mL Urine (24h). Collect 24h urine with 5 g sodium carbonate. Final pH should be 7 to 10. Protect from light - collect in dark bottle or wrap in foil. Keep cool during collection. Provided volume (in litres) and collection date. Store and send frozen. Quantitation will be performed and billed (see separate listing) when the screen is positive. This collection is not suitable for ALA/PBG testing. Specimen must be labelled inside and outside light-protecting wrap.
Post Heparin Lipolytic Activity	11 mL Plasma (EDTA). Collect pre and 30 m post heparin stimulation (IV heparin 100 IU/kg body weight after a 14 h fast). Avoid hemolysis. Both frozen and unfrozen specimens are required. Pre: Send 6 mL unfrozen EDTA plasma. Post: (Draw from the arm opposite to the heparin injection arm) Send 0.5 mL unfrozen and three 1.5 mL frozen aliquots of EDTA plasma. Label tubes identifying the pre and post specimens. Prior consultation is required before the analysis will be performed. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Potassium	1 mL Fluid / Faeces. Indicate source of fluid clearly on requisition. Faeces: Submit 5 mL naturally fluid faeces. Formed faeces is not acceptable.
Potassium	1 mL Serum or Plasma (Heparin). Avoid hemolysis. Separate as soon as possible.
Potassium	1 mL Urine (Random). Provide date of birth. Indicate "random".
Potassium	1 mL Urine (24h). State collection date and total volume.
Powassan Virus	Multiple. . Please see [Public Health Laboratory Services].
Prealbumin	1 mL Serum.



Specimen Requirements

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Test Name	Specimen Requirements
Prekallikrein	2 mL Plasma (Citrate). Separate platelet poor plasma into three plastic vials. Freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
Primidone	0.5 mL Serum. To monitor therapy draw trough specimens before the next dose is administered. The active metabolite Phenobarbital should be measured simultaneously.
Primidone	5 mL Gastric lavage.
Procainamide	1 mL Serum. To monitor therapy, draw trough specimen prior to next dose. Analysis includes N-Acetylprocainamide (the active metabolite of Procainamide) and Procainamide.
Prochlorperazine	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391- 1499 Ext. 248 or info@hicl.on.ca.
Procyclidine	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391- 1499 Ext. 248 or info@hicl.on.ca.
Progesterone	1 mL Plasma (Li-Heparin). Serum and plasma (EDTA) are also acceptable.
Proinsulin	1 mL Serum. Collect after 12 h fast. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. A separate frozen specimen must be submitted if Insulin is also requested (billed separately).
Prolactin	1 mL Serum. This assay cross-reacts with macroprolactin. If result is elevated, recollection and submission for Macroprolactin (see separate listing) is recommended.
Proliferating Cell Nuclear Antibodies	1 mL Serum. Store and send frozen.
Propafenone	2 mL Serum or Plasma (Heparin).
Propoxyphene	10 mL Gastric lavage.
Propoxyphene	10 mL Urine (Random).
Propoxyphene	3 mL Serum.
Propranolol	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 or info@hicl.on.ca.
Prostate Specific Antigen	2 mL Serum. Send cold. Do not add acid or other preservatives. Recommend collection prior to rectal exam or other procedure that may affect PSA levels.
Prostate Specific Antigen: Free	2 mL Serum or Plasma (Li-Hep./EDTA). Recommend collecting prior to rectal exam or other action that may alter circulating PSA concentration.



Specimen Requirements

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Test Name	Specimen Requirements
Prostate Specific Antigen: Sensitive	2 mL Serum. Do not add acid or other preservatives. Recommend collection prior to rectal exam or other action that may affect PSA levels.
Protein	10 mL Urine (24h). Indicate collection date and volume.
Protein	1 mL Fluid. Indicate source of fluid clearly on requisition.
Protein	1 mL Serum.
Protein	1 mL CSF. Identify CSF clearly on requisition.
Protein Analysis: Electrophoresis	1 mL Serum. Store and send frozen. Immunoglobulins (A,G and M) and Immunofixation analysis may be performed, reported and billed if indicated by the electrophoretic results.
Protein Analysis: Electrophoresis	25 mL Urine (Random). Store and send frozen. Immunofixation analysis may be performed, reported and billed if indicated by the electrophoretic result.
Protein Analysis: Electrophoresis	5 mL CSF. Store and send frozen. If testing for Oligoclonal Banding or Multiple Sclerosis, refer to "Protein Analysis: Oligoclonal Banding".
Protein Analysis: Immunoelectrophoresis	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca. Analysis by Immunofixation Electrophoresis is available as the recommended alternate test.
Protein Analysis: Immunofixation	1 mL Serum. Store and send frozen. Indicate date of birth. Immunoglobulins A, G and M will also be analyzed (and billed) unless specifically indicated otherwise. Serum Free Light Chains may be reported and billed if indicated. Analysis of Immunoglobulin D and/or Immunoglobulin E by IFE is available - refer to Immunoglobulin D (By IFE) or Immunoglobulin E (By IFE).
Protein Analysis: Immunofixation (Urine)	Not Available - See Note. Immunofixation analysis of urine to include intact immunoglobulins is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or 249 or info@hicl.on.ca. Immunofixation analysis of urine for investigation of Bence Jones Proteinuria is available - refer to separate listing for "Protein Analysis: Bence Jones Protein".
Protein Analysis: Oligoclonal Banding	2 mL CSF and 1 mL Serum. Store and send frozen. Specimens must be received at HICL within 5 days of collection. Interpretation requires both specimen types. Plasma is not suitable. Assay includes IgG, Albumin and IgG/Albumin ratio.
Protein C: Activity	3 mL Plasma (Citrate). Separate and freeze immediately, Store and send frozen. If the specimen thaws, it is unsuitable for analysis. Restrict Coumadin for 2 weeks prior to collection. Heparin treatment will not affect results.
Protein C: Antigen	3 mL Plasma (Citrate). Separate and freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. Restrict Coumadin for 2 weeks prior to collection. Heparin treatment will not affect results.



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Test Name	Specimen Requirements
Protein Deposition In Tissue	1 g Tissue. Send specimen in special transport medium. Maintain at ambient temperature (20°C). Contact (416) 391-1499 ext. 248 or info@hicl.on.ca for special transport medium. Results are interpreted on report.
Protein S: Free	1 mL Plasma (Citrate). Separate and freeze immediately. Store and send frozen. If thawed, specimen is unsuitable for analysis. Restrict Coumadin for 10 d prior to specimen collection. Heparin treatment will not affect results.
Protein S: Free & Total	3 mL Plasma (Citrate). Send platelet-poor plasma in 3 separate 1 mL aliquots. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. Patient should not be on anticoagulant therapy. Protein S: Total will only be performed if Protein S: Free is low and INR is normal. INR will not be performed if Protein S: Free is normal. Only the tests performed will be reported and billed.
Prothrombin Mutation	4.0 mL Whole Blood (ACD). Store and send at controlled ambient temperature.
Prothrombin Time	5 mL Whole blood (Sodium Citrate). Specimen must be received by performing laboratory within 4 h of collection. State if patient is on anticoagulant therapy.
Protriptyline	3 mL Serum or plasma (EDTA). Collect trough specimen prior to morning dose or 10 - 12 h after last drug administration. Separate as soon as possible.
Protriptyline	5 mL Gastric lavage.
Protriptyline	10 mL Urine (Random).
Pyruvate	2 mL Whole Blood. Submit supernatant from 2 mL whole blood (heparin) precipitated with 4 mL cold 0.8 mol/L perchloric acid at the bedside. Untreated specimens are not suitable for analysis. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
Pyruvate	2 mL CSF. Submit supernatant from 2 mL CSF precipitated with 4 mL cold 0.8 mol/L perchloric acid at the bedside. Untreated specimens are not suitable for analysis. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
Pyruvate Kinase	5 mL Whole blood (EDTA). Store and send at 4°C. Do not freeze. Blood transfusions within the last 3 months invalidates test results. Analysis must be performed within 5 d of collection.
Pyruvate Kinase Screen	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca
Q Fever	Multiple. . Please see [Public Health Laboratory Services].
Quetiapine	1.0 mL Serum. Do not use gel-separator tubes. Store and send frozen.
Quinidine	1 mL Serum. To monitor therapy, draw trough specimen prior to last dose.



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Test Name	Specimen Requirements
Quinine: Screen	10 mL Urine (Random).
Rabies - RFFIT	Multiple. . Please see [Public Health Laboratory Services].
Reducing Substances - Faeces	Not available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416)391-1499 Ext. 248 or info@hicl.on.ca.
Reducing Substances - Urine	Not available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416)391-1499 Ext. 248 or info@hicl.on.ca.
Renin	3 mL Plasma (EDTA). Separate and freeze. Store and send frozen.
Reptilase Time	1 mL Plasma (Citrate). Separate and freeze as soon as possible. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
Respiratory Syncytial	Multiple. . Please see [Public Health Laboratory Services].
Reticulin Antibodies	3 mL Serum.
Reverse T3	Not Available - See Note. Analysis is no longer routinely available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Rheumatoid Factor	1 mL Fluid. Specify fluid type on requisition.
Rheumatoid Factor	1 mL Serum. Plasma (Li or Sodium heparin) is also acceptable.
Ribosomal P Antibodies	1 mL Serum.
Risperidone	2 mL Serum or Plasma (heparin). Submit trough specimen collected prior to next dose. Do not use gel-separator tubes. Store and send frozen.
Rocky Mountain Spotted Fever	Multiple. . Please see [Public Health Laboratory Services].
Rubella	Multiple. . Please see [Public Health Laboratory Services].
Rubella Screen - Prenatal	Multiple. . Please see [Public Health Laboratory Services].
S-Sulfocysteine	5 mL Urine (Random). Store and send frozen.
Saccharomyces cer. Antibodies	1 mL Serum. Assay includes both the IgA and IgG Antibodies.
Schilling's Test	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Secobarbital	3 mL Serum.
Secobarbital	10 mL Urine (Random).



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Test Name	Specimen Requirements
Secobarbital	10 mL Gastric lavage.
Selenium	3 mL Plasma (EDTA). Collect plasma in contaminant-free tube. Separate as soon as possible and send in metal-free polypropylene vial. Results may be falsely elevated if the specimen is not separated within 30 minutes and/or hemolysis is present.
Selenium	13 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Provide collection date.
Selenium	13 mL Urine (24h). Collect and transfer in metal-free container. Collection date and 24 h volume must be provided.
Serotonin	1 mL Serum. Split into 2 aliquots and freeze as soon as possible. Store and send frozen. If the specimen thaws it is unsuitable for analysis. Plasma and platelet-poor plasma are unsuitable for analysis. Serotonin may be increased by diet or released by medications. For 48 h prior to collection, patient must abstain from avocados, bananas, coffee, plums, pineapples, tomatoes, walnuts, hickory nut, mollusks, eggplant and medications such as aspirin, corticotropins, MAO inhibitors, phenacetin, catecholamines, reserpine and nicotine.
Serotonin	10 mL Urine (24h). Collect 24 h urine in plastic container with 20 mL of 6 mol/L (6 N) HCl as preservative. Do not use any other preservative. Preservative must be used during collection. Freeze as soon as possible. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. A low tryptophan diet is recommended for 48 h prior to and during collection. During this period, patient must abstain from avocados, bananas, coffee, plums, pineapples, tomatoes, walnuts, hickory nut, mollusks, eggplant and medications such as aspirin, corticotropins, MAO inhibitors, phenacetin, catecholamines, reserpine and nicotine.
Sertraline	2 mL Serum or plasma (Heparin). Do not use serum separator tubes (SST). Patient should be on the drug at least one week prior to testing. Collect prior to morning dose.
Sex Hormone Binding Globulin	3 mL Serum.
Sickle Cell Test	3 mL Whole blood (ACD or EDTA). Indicate patient's date of birth and racial origin and hemoglobin, MCV and RDW. See separate listing for Hemoglobin Fractionation (by HPLC) which includes the Sickling Test.
Silver	13 mL Urine (24h). Collect and transfer in metal-free container. Collection date and 24 h volume must be provided.
Silver	13 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Provide collection date.
Silver	3 mL Erythrocyte. Collect heparin whole blood in contaminant-free tube. Prepare packed red cells. Store and send frozen.
Silver (Plasma)	Not available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416)391-1499 Ext. 248 or info@hicl.on.ca.
Skeletal Muscle Antibodies	1 mL Serum.



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Test Name	Specimen Requirements
Skin Antibodies	1 mL Serum. Assay includes both Pemphigus and Pemphigoid Antibodies.
Smooth Muscle Antibodies	1 mL Serum.
Sodium	1 mL Fluid / Faeces. Indicate source of fluid clearly on requisition. Faeces: Submit 5 mL naturally fluid faeces. Formed faeces is not acceptable.
Sodium	10 mL Urine (Random). Indicate collection date and "Random".
Sodium	10 mL Urine (24h). Indicate 24 h urine volume and date of collection.
Sodium	1 mL Serum or plasma (Heparin).
Spironolactone: Screen	10 mL Urine (Random).
St Louis Encephalitis Virus	Multiple. . Please see [Public Health Laboratory Services].
Strontium	13 mL Urine (24h). Collect and transfer in metal-free container. Collection date and 24 h volume must be provided.
Strontium	13 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Provide collection date.
Strychnine: Screen	10 mL Urine (Random).
Sulfamethoxazole	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Sulfatides	20 mL Urine (Random). Include the sediment. Store and send frozen.
Sulfhemoglobin	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Sulfur	13 mL Urine (Random). Collect and transfer in metal-free container.
Synovial Fluid Examination	5 mL Synovial fluid. Collect specimen into sterile container or non-additive tube. Sodium heparin tubes are acceptable. EDTA tubes are acceptable for all tests except crystal analysis. Lithium heparin tubes are unacceptable. Store and send cold. Provide site, laterality and source. WBC counts may decrease by 50% after 5 hours, particularly polymorphonuclear cells. Crystals do not decrease in significant numbers over 2-3 days. Completely clotted specimens are unsuitable for analysis. Report includes gross description, cell count and differential, mucin clot test and crystal identification.
T.B.	Multiple. . Please see [Public Health Laboratory Services].
T3 Resin Uptake	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.



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Test Name	Specimen Requirements
Tacrolimus (FK506)	2 mL Whole Blood (EDTA). Store and send cold to avoid temperature fluctuation. This test is funded for patients who have had a transplant performed in Ontario and only a Transfer fee will be billed - if the transplant centre is not indicated the regular test fee will apply.
Telopectide-N	10 mL Urine (Random). Submit two 5 mL aliquots from second morning urine collected 7:30 - 10:30 a.m. Provide collection date. Indicate Random. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
Telopectide-N	10 mL Urine (Random). Submit two 5 mL aliquots. Provide collection date and volume (in litres) . Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
Temazepam	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Testosterone: Bioavailable	2 mL Serum. Store and send frozen. Grossly hemolysed or lipemic specimens are unsuitable for analysis. Analysis performed by immunoassay after ammonium sulfate precipitation.
Testosterone: Free	Not Available - See Note. Analysis is no longer routinely available. Testing for clinical trials or research may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca. Testosterone: Bioavailable is recommended as the preferred assay for evaluation of "Free" Testosterone.
Testosterone: Total	2 mL Serum or Plasma (Heparin). Indicate date of birth and sex for interpretation of result.
Tetanus Anti-Toxin	Multiple. . Please see [Public Health Laboratory Services].
Thallium	3 mL Erythrocyte. Collect heparin whole blood in contaminant-free tube. Prepare packed red cells. Store and send frozen.
Thallium	13 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Provide collection date.
Thallium	13 mL Urine (24h). Collect and transfer in metal-free container. Collection date and 24 h volume must be provided.
Thallium	7 mL Whole Blood (EDTA). Collect whole blood in contaminant-free tube. Send in metal-free polypropylene vial.
Theophylline	0.5 mL Serum. Draw specimens at trough concentration prior to next regular dose. At peak concentration 2 h post oral dose or at steady state during continuous I.V. therapy. In premature infants and some neonates the active metabolite caffeine may require simultaneous monitoring.
Thiocyanate	2 mL Serum.
Thiopental	3 mL Serum. Includes analysis of the metabolite Pentobarbital.
Thiopurine Methyltransferase: Genotype	3 mL Whole Blood (EDTA). Do not freeze specimen. Send specimen in original collection tube. Do not transfer to polypropylene transfer vial. Specimen must be received at the testing site within 7 days of collection.
Thioridazine	3 mL Serum.
Thioridazine	10 mL Urine (Random).



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Test Name	Specimen Requirements
Thioridazine	10 mL Gastric lavage. Store and send cold.
Thrombin Time	3 mL Plasma (Citrate). Separate and freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
Thyroglobulin	2 mL Serum.
Thyroglobulin Antibodies	1 mL Serum or Plasma (Na-Heparin). Lithium Heparin and sodium citrate Plasma are not suitable.
Thyroid Antibodies	1 mL Serum or Plasma (Na-Heparin). Analysis includes Thyroglobulin Antibodies and Thyroid Peroxidase antibodies.
Thyroid Peroxidase Antibodies	1 mL Serum or Plasma (Na-Heparin).
Thyroid Receptor Antibody	1 mL Serum. Indicate thyroid status of patient including presence of exophthalmos. Lipaemic or hemolyzed specimens are not acceptable.
Thyrotrophin Stimulating Hormone	1 mL Serum or Plasma (Hep. or EDTA).
Thyroxine (T4)	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Thyroxine Binding Globulin	1 mL Serum. Plasma is not suitable for analysis.
Thyroxine: Free	1 mL Serum or Plasma (Hep. or EDTA).
Tin	13 mL Urine (24h). Collect and transfer in metal-free container. Collection date and 24 h volume must be provided.
Tin	13 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Provide collection date.
Tissue Plasminogen Activator	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Tissue Transglutaminase Antibodies	1 mL Serum. This assay is also included in the Celiac Profile (see separate listing).
Titanium	7 mL Whole Blood (K2 EDTA). Collect whole blood in contaminant-free tube. Send in metal-free polypropylene vial.
Tobramycin: Peak	1 mL Serum. To monitor Peak concentration, collect 1 h following I.M. or 15 min. following a 60 min. I.V. (or 30 min. after a 30 min. I.V.) drug administration. Collect with third dose if possible. Separate and freeze as soon as possible. Store and send frozen. Label Peak specimen and requisition clearly. Do not use gel-separator tubes.
Tobramycin: Trough	1 mL Serum. To monitor Trough concentration, collect prior to I.M. or I.V. drug administration. Collect with third dose if possible. Separate and freeze as soon as possible. Store and send frozen. Label Trough specimen and requisition clearly. Do not use gel-separator tubes.



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Test Name	Specimen Requirements
Tocainide	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Tolbutamide	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 ext. 248 or info@hicl.on.ca.
Topiramate	1 mL Serum. Do not use gel-separator tubes. Store and send frozen.
Toxoplasmosis	Multiple. . Please see [Public Health Laboratory Services].
Transcobalamin	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
β -Transferrin	2 mL Fluid. Indicate source. Store and send frozen. Analysis includes β -1-Transferrin and β -2-Transferrin.
Transferrin	1 mL Serum.
Trazodone	3 mL Serum. To monitor therapy, collect trough level specimen prior to morning dose or 10 - 12 h after last drug administration. Separate as soon as possible.
Triazolam	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Trifluoperazine	3 mL Serum.
Trifluoperazine	10 mL Urine (Random).
Trifluoperazine	10 mL Gastric lavage.
Triglycerides	1 mL Serum or Plasma (Hep.or EDTA). Collect after a 14 h fast. A single 1 mL specimen is sufficient for Triglycerides and Cholesterol.
Triiodothyronine: Free	1 mL Serum or Plasma (Li-Hep./EDTA).
Triiodothyronine: Total	1 mL Serum. Store and send cold.
Trimeprazine	3 mL Serum.
Trimeprazine	10 mL Urine (Random).
Trimeprazine	10 mL Gastric lavage.
Trimipramine	5 mL Gastric lavage.
Trimipramine	10 mL Urine (Random).



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Test Name	Specimen Requirements
Trimipramine	3 mL Serum or Plasma (EDTA). To monitor therapy, draw trough specimen prior to morning dose or 10 -12 h after last drug administration. Separate as soon as possible.
Troponin I	1 mL Serum or Plasma (Heparin). Store and send frozen. If thawed, the specimen is not suitable for analysis. Plasma (EDTA) is not recommended since it will yield lower results and require different interpretive values.
Troponin T	2 mL Serum or Plasma (Li Heparin). Do not use oxalate/fluoride tubes. Avoid hemolysis. Store and send frozen.
Trypsin	Not Available - See Note. Analysis is no longer routinely available. Testing for research or clinical trials may be available. Contact Customer Service at (416) 391-1499 Ext. 248 or info@hicl.on.ca.
Trypsinogen	1 mL Serum. Store and send frozen. Trypsinogen Assay measures Trypsin-Like Immunoreactivity.
Tryptase	1 mL Serum. Plasma is not suitable. Specimen should be taken between 15 minutes to 3 hours after the suspected anaphylactic event. Separate as soon as possible. Store and send frozen.
Tularensis	Multiple. . Please see [Public Health Laboratory Services].
Typhus Epidemic	Multiple. . Please see [Public Health Laboratory Services].
Uranium	13 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Provide collection date.
Uranium	13 mL Urine (24h). Collect and transfer in metal-free container. Collection date and 24 h volume must be provided.
Uranium	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck. If unable to weigh the hair, submit 1 to 2 heaping teaspoons (10-20 mL). Submit in a plastic bag. Bleach, dyes and rinses may interfere.
Urea	1 mL Fluid / Faeces. Indicate source of fluid clearly on requisition. Faeces: Submit 5 mL naturally fluid faeces. Formed faeces is not acceptable.
Urea	1 mL Serum.
Urea	5 mL Urine (24h). Keep cold during collection and transportation. Indicate 24 h volume and date of collection.
Uric Acid	1 mL Serum.
Uric Acid	2 mL Urine (24h). Collect urine in plastic container. Adjust pH to alkaline range before aliquoting. Indicate 24 h volume and date of collection.
Uric Acid	1 mL Fluid / Faeces. Indicate source of fluid clearly on requisition. Faeces: Submit 5 mL naturally fluid faeces. Formed faeces is not acceptable. See separate listing for "Synovial Fluid" for uric acid in synovial fluid.
VDRL	Multiple. . Please see [Public Health Laboratory Services].
Vaccinia-Variola Virus	Multiple. . Please see [Public Health Laboratory Services].
Valproic Acid	0.5 mL Serum. To monitor therapy, draw trough specimen before the next dose is administered.



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Test Name	Specimen Requirements
Valproic Acid: Free	1 mL Serum or Plasma (Heparin). Do not use gel-separator collection tubes.
Vanadium	13 mL Urine (24h). Collect and transfer in metal-free container. Collection date and 24 h volume must be provided.
Vanadium	6 mL Plasma (K2 EDTA). Collect whole blood in contaminant-free tube. Send in metal-free polypropylene vial.
Vanadium	13 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Provide collection date.
Vanadium	3 mL Plasma (EDTA). Collect plasma in contaminant-free tube. Separate as soon as possible and send in metal-free polypropylene vial. Results may be falsely elevated if the specimen is not separated within 30 minutes and/or hemolysis is present.
Vancomycin: Peak	1 mL Serum. To monitor Peak concentration, collect 1 h following I.M. or 15 min. following a 60 min. I.V. (or 30 min. after a 30 min. I.V) drug administration. Collect with third dose if possible. Separate and freeze as soon as possible. Store and send frozen. Label Peak specimen requisition clearly. Do not use gel-separator tubes.
Vancomycin: Trough	1 mL Serum. To monitor Trough concentration, collect prior to I.M. or I.V. drug administration. Collect with third dose if possible. Separate and freeze as soon as possible. Store and send frozen. Label Trough specimen and requisition clearly. Do not use gel-separator tubes.
Vanillylmandelic Acid	10 mL Urine (24h). Collect urine in a container with 25 mL 6 mol/L (6N) HCl acid. The final pH of the urine must be maintained from 2 - 4. Restrict caffeine, nicotine and alcohol 24 h prior to collection. Discontinue Methyl dopa (Aldomet) at least 5 days prior to collection. Other drugs usually do not interfere with this assay. State 24 h volume and collection date.
Varicella-Zoster Virus	Multiple. . Please see [Public Health Laboratory Services].
Venlafaxine: Screen	10 mL Urine (Random).
Virus Isolation	Multiple. . Please see [Public Health Laboratory Services].
Virus Serology	Multiple. . Please see [Public Health Laboratory Services].
Viscosity	6 mL Serum. Collect and separate at 37°C. Separate as soon as possible and refrigerate serum. Send cold. Plasma is not suitable for analysis.
Vitamin A	1 mL Serum. Avoid hemolysis. Protect specimen from light. Specimen must be labelled inside and outside light-protecting wrap. Gel-separator tubes not acceptable. Store and send frozen.
Vitamin B1	2 mL Plasma (EDTA or Heparin). Separate and freeze immediately. Protect Specimen from light. Specimen must be labelled inside and outside light-protecting wrap. Gel-separator tubes not acceptable. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
Vitamin B12	3 mL Serum. Freeze if stored overnight.



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Test Name	Specimen Requirements
Vitamin B6	2 mL Plasma (EDTA). Separate and freeze within 1 hour. Protect specimen from light. Specimen must be labelled inside and outside light-protecting wrap. Gel-separator tubes not acceptable. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
Vitamin C	2 mL Plasma (Heparin). Separate and freeze immediately. Protect specimen from light. Specimen must be labelled inside and outside light-protecting wrap. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
Vitamin D (1,25-Dihydroxy)	2 mL Serum or Plasma (Heparin). Unless "1,25-OH-" is specified when ordering Vitamin D, 25-OH Vitamin D will be measured and reported.
Vitamin D (25-Hydroxy)	2 mL Serum or plasma (Heparin). This method measures 25-OH Vitamin D2 and 25-OH Vitamin D3. If unspecified Vitamin D is ordered, 25-OH Vitamin (D2+D3) is measured and reported. 1,25-OH Vitamin D is only measured and reported if specified.
Vitamin E	2 mL Serum. Protect specimen from light. Specimen must be labelled inside and outside light-protecting wrap. Store and send frozen.
Von Willebrand Assessment	2 mL Plasma (Citrate). Separate Platelet-poor plasma into 3 plastic vials. Freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. Indicate if patient is diagnosed or treated for Von Willebrand's Disease. Individual parts of the panel may be ordered individually (see individual listings for Reference Ranges, Units and Price: Coagulation Factor VIII, VW Factor Antigen and VW Ristocetin Co-Factor).
Von Willebrand Factor Activity	1 mL Plasma (Citrate). Separate and freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.
Von Willebrand Factor Antigen	2 mL Plasma (Citrate). Separate platelet poor plasma into three plastic vials. Freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. This assay is included in Von Willebrand Assessment (separate listing).
Von Willebrand Ristocetin Co-Factor	2 mL Plasma (Citrate). Separate platelet poor plasma into three separate vials. Freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. This assay is included in Von Willebrand Assessment (see separate listing).
Von Willebrand's Factor Multimers	1 mL Plasma (Citrate). Freeze immediately. If the specimen thaws, it is unsuitable for analysis. Assay includes VW Factor Antigen and VW Ristocetin Co-Factor.
Warfarin	3 mL Plasma (Heparin).
Western Equine Encephalitis Virus	Multiple. . Please see [Public Health Laboratory Services].
Xylose	1 mL Plasma (Fluoride). Separate and freeze immediately. Submit two specimens, collected as described below and labeled as Fasting and 1-hour post-xylose. Xylose dose and patient's height and weight must be provided to calculate and interpret results. Xylose Absorption Test Protocol: Collect fasting pre- Xylose specimen. Administer p.o. 5g D-Xylose freshly dissolved in 250 mL water. Instruct patient to drink quickly. Collect next specimen exactly on hour after xylose ingestion.



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Test Name	Specimen Requirements
Yersinia	Multiple. . Please see [Public Health Laboratory Services].
Zinc	13 mL Urine (24h). Collect and transfer in metal-free container. Collection date and 24 h volume must be provided.
Zinc	13 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Provide collection date.
Zinc	3 mL Plasma (EDTA). Collect plasma in contaminant-free tube. Separate as soon as possible and send in metal-free tube. Results may be falsely elevated if the specimen is not separated within 30 minutes and/or hemolysis is present.
Zinc	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck. If unable to weigh the hair, submit 1 to 2 heaping teaspoons (10-20 mL). Submit in a plastic bag. Bleach, dyes and rinses may interfere.
Zinc Protoporphyrin	7 mL Whole blood (EDTA). Collect whole blood in contaminant-free tube. Send in metal-free polypropylene vial. Specimen must be analyzed within 5 d of collection. It is recommended that Lead be ordered simultaneously to detect lead exposure. ZPP may not be a good indicator of lead exposure in women and children.