In-Common Laboratories

Version: 25-NOV-2016

Test Name	Time	Specimen Requirements	Results/Reference Ranges
1,25-Dihydroxyvitamin D	7D	2 mL Serum or Plasma (Heparin). Separate and freeze as soon as possible. Store and send frozen.	1,25-Dihydroxy-Vitamin D 48 - 190 Units: pmol/L CF: pg/mL x 2.40
11-Deoxycortisol	7D	1 mL Serum or Plasma (EDTA). Store and send frozen.	11-Deoxycortisol Normal Adults <2.60 Patients with untreated 11-β-hydroxylase deficiency: >100 Overnight Metyrapone Test: Normal >200 nmol/L Hypopituitarism/Addison's: No response (Cortisol should be <200 nmol/L for valid test) Units: nmol/L CF: µg/L x 2.90
17 Hydroxycorticosteroids	5D	20 mL 24h Urine. Collect in a urine container with 30 mL 6N HCl or 25 mL of 50% Acetic Acid or 1g Boric Acid/100 mL to maintain pH below 7.5, and submit in a plastic leakproof container. Keep refrigerated during collection. Ship frozen if preservative is not used. Provide 24-hr volume, DOB and gender.	Creatinine < 3y: Not Established 3 - 8y: 0.11 - 0.68 9 - 12y: 0.17 - 1.41 13 - 17y: 0.29 - 1.87 >= 18y: 0.63 - 2.50 Units: g/d CF: 17 Hydroxycorticosteroids < 1y: Not Established 1 - 2y: 0.5 - 2.5 3 - 4y: 1.0 - 4.0 5 - 6y: 1.0 - 4.8 7 - 8y: 1.0 - 5.6 9 -10y: 1.0 - 7.0 11-12y: 1.5 - 8.0 13-16y,F: 2.8-6.8, M: 2.0-6.0 17-20y,F: 2.0-7.0, M: 3.0-10.0 Adult Female: 2.0-6.0, Male: 3.0-10.0 Units: mg/d CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
17-Hydroxyprogesterone	7D	2 mL Plasma (Li-heparin). Serum is also acceptable. Avoid hemolysis. Freeze as soon as possible. Store and send frozen.	17-Hydroxyprogesterone Newborn: 5 - 30 d: Less than 7.6 31 - 60 d: M: 2.4 - 15.1 F: 1.5 - 7.0 Children: 3 - 14 y: 0.2 - 5.1 Female - Reproductive age: Follicular: 0.3 - 2.4 Luteal: 1.8 - 7.0 Ovulation: 0.9 - 4.2 Post-menopausal: 0.4 - 1.5 Male: 1.5 - 6.4 Units: nmol/L CF: µg/L x 3.026
2,3-Dinor-11-Beta-Prostaglandin F2a	9D	4 mL Urine. Submit 24h urine (preferred) or random. No preservative. Store and send frozen. 2,3BPG will be decreased in individuals who have taken aspirin within two weeks or other NSAIDs within 72 hours of specimen collection.	2,3dinor 11BProstaglandin F2a < 5205 (95 %ile of healthy, untreated individuals) Units: pg/mg Cr CF: - - -
21-Hydroxylase Antibodies	10D	1 mL Serum. Gel separator tube is acceptable.	21-Hydroxylase Antibodies Negative Units: Qual. Test CF:
21-Hydroxyprogesterone	5D	1 mL Serum. Gel-separator tube acceptable if separated into plastic transfer vial within 2 hours. Store and send frozen.	21-OH Progesterone 0 - <1y: 0.07-0.76 1 - <2y: 0.03-0.25 2 - <12y: 0.00-0.15 12 - <19y: 0.00-0.24 Adult M, 19 - 89y: 0.11 - 0.35 F, Follicular: 0.05 - 0.26 Luteal: 0.11 - 0.39 Units: nmol/L CF: - - -
5' Nucleotidase	10D	1 mL Serum. Collect serum in a plain, red-top or gel separator tube. Store and send frozen.	5' Nucleotidase 0 - 15

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Units: U/L CF:
5-Flucytosine	15D	1 mL Serum. Peak level specimen should be drawn 1 to 2 hours after oral dose or 30 minutes after intravenous infusion. Trough specimens should be drawn immediately prior to next dose. Separate serum within 2 hours. Gel- separator tubes are acceptable. Store and send frozen.	5-Flucytosine Therapeutic Peak: > 25.0 (difficult infections may require higher concentrations) Toxic Peak: > 100.0 Units: µg/mL CF:
5-Hydroxyindole Acetic Acid	10D	10 mL Urine (24h). Collect urine in container with 25 mL 6 mol/L (6N) HCl acid. The final pH must be maintained from 2 - 4. Indicate 24 h volume and date of collection. The patient must have a diet free of avocadoes, 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.	Creatinine Male: 9.0 - 17.0 Female: 7.0 - 15.0 Units: mmol/d CF: 5-Hydroxyindole Acetic Acid Not Available Units: µmol/L CF: 5-Hydroxyindole Acetic Acid < 50 Units: µmol/d CF:
5-Hydroxyindole Acetic Acid	10D	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 avocadoes, 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.	Creatinine (Random urine) Not available for random urine Units: mmol/L CF: - - - 5 HIAA (Random urine) Not available for random urine Units: µmol/L CF: - - - 5 HIAA/Creatinine Ratio Less than 5.0 Units: µmol/mmol Cr. CF: - - -
7-Dehydrocholesterol	30D	1.0 mL Serum or Plasma (Heparin). Fasting specimen preferred. Protect specimen from light. Specimen must be labelled inside and outside light-protecting wrap. Store and send frozen. Pediatric: 0.2 mL minimum.	7-DHC - Serum/Plasma (Heparin) <5 Normal 5-20 Indeterminate >20 Indicative of Smith-Lemli-Opitz Syndrome

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Units: µmol/L CF: - - -
7-Dehydrocholesterol	10D	3 mL Amniotic Fluid. State gestational age, must be 14 weeks or greater. Centrifuge and send frozen supernatant. Protect specimen from light (wrap in foil or use amber/opaque container). Specimen must be labelled inside and outside light-protectng wrap. Store and send frozen.	7-DHC - Amniotic Fluid Normal: <1.0 Indicative of Smith-Lemeli-Opitz Syndrome: >1.0 Units: µmol/L CF: - - -
Acetaminophen	1D	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.	Acetaminophen - Serum Therapeutic: 66 - 132 Toxic (4h post ingestion): >1000 Toxic (12h post ingestion): >300 Units: µmol/L CF: mg/L x 6.62
Acetylcholine Receptor Antibody	20D	2 mL Serum. Store and send frozen.	Acetylcholine Receptor Ab. Negative: Less than 0.40 Units: nmol/L CF: - - -
Acetylsalicylic Acid	1D	1 mL Serum.	Salicylates - Serum Analgesic + Antipyretic: 0.15 - 0.72 Anti inflammatory: 1.00 - 2.00 Toxic: Greater than 2.20 Units: mmol/L CF: mg/L x 0.00724
Activated Protein C Resistance	7D	1 mL Plasma (Citrate). Separate and freeze immediately. If the specimen thaws, it is unsuitable for analysis.	Activated Protein C Resistance > 2.30 Units: Ratio CF: - - -
Acylcarnitine	15D	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.	Carnitine: Free Up to 15 d: 12 - 60 Over 15 d: 26 - 60 Units: µmol/L CF: - - - Carnitine: Total Up to 15 d: 23 - 84 Over 15 d: 32 - 84

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Units: µmol/L CF: - - - Acylcarnitine Interpretation provided on report See [Acylcarnitine Data] table for reference ranges. Units: µmol/L CF: - - -
Adalimumab & Antibodies	12D	2 mL Serum. Gel-separator tubes are acceptable. Store and send frozen. Specimen must be received at ICL Mon-Wed within 3 days of collection.	Adalimumab Results 0.6 and higher indicate detection of Adalimumab Units: µg/mL CF: - - - Adalimumab Antibodies Results 25 and higher indicate detection of antibodies Units: ng/mL CF: - - -
Adiponectin		1 mL Serum. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. This test is for 'Research Use Only'.	Adiponectin Not available Units: ng/mL CF: - - -
Adrenal Antibodies	10D	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.	Adrenal Antibodies Negative Units: Qual. Test CF: - - - Mitochondrial Antibodies Negative Units: Qual. Test CF: - - - Mitochondrial Antibodies Titre Not Available Units: Titre CF: - - -
Adrenocorticotropic Hormone	15D	2 mL Plasma (EDTA). Other types of plasma and serum are not suitable for analysis. Collect in pre-chilled plastic or siliconized glass tube, store on ice and spin to separate. Divide equally into 2 pre-chilled clean transfer vials and freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.	Adrenocorticotropic Hormone 0 - 18 Interpret ACTH with simultaneous cortisol analysis and other clinical findings.

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Units: pmol/L CF: pg/mL x 0.220
ALA Dehydratase	7D	Whole Blood (Na Heparin). Collect specimen and refrigerate immediately. Do not freeze. Submit full tube. EDTA or Li Heparin whole blood samples are also acceptable. Patient should abstain from alcohol 24-hrs prior to collection. Due to limited stability, sample must be received at ICL from Monday-Wednesday within 3 days of collection. Provide a list of medications the patient is currently taking.	ALA Dehydratase >= 4.0 3.5 - 3.9 (Indeterminate) < 3.5 (Diminished) This assay is not useful in evaluating lead intoxication as it re-activates ALAD that may have been inhibited by lead. Units: nmol/L/sec CF: Interpretation Units: CF:
Albumin	2D	1 mL Fluid / Faeces. Indicate source of fluid clearly on requisition. Faeces: Submit 5 mL naturally fluid faeces. Formed faeces is not acceptable.	Albumin - Fluid Not available. Units: g/L CF: g/dL x 10.0
Albumin	2D	10 mL Urine (24h). Indicate 24 h volume and collection date.	Creatinine - Urine (24h) Male: 7.0 - 18.0 Female: 5.0 - 16.0 Units: mmol/d CF: mg/d x 0.00884 Microalbumin excretion Normal: <30 Microalbuminuria: 30-299 Clinical albuminuria: >299 Units: mg/d CF: - - - Microalbumin/Creatinine Ratio Male: Normal <2.0 Microalbuminuria 2.0-20.0 Clinical albuminuria >20.0 Female: Normal <2.8 Microalbuminuria 2.8-28.0

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Clinical albuminuria >28.0 Units: mg/mmol Cr CF: - - -
Albumin	2D	10 mL Urine (Random). Elevated results should be confirmed on a 24 h collection.	Creatinine (Random) Male: 0 - 39 y: 2.1 - 3.5 40 y and over: 1.9 - 2.9 Female: 0 - 39 y: 1.4 - 2.9 40 y and over: 1.3 - 2.5 Units: mmol/L CF: - - - Microalbumin - Urine (random) Less than 20 Units: mg/L CF: - - - Microalbumin/Creatinine Ratio Male: Normal <2.0 Microalbuminuria 2.0-20.0 Clinical albuminuria >20.0 Female: Normal <2.8 Microalbuminuria 2.8-28.0 Clinical albuminuria >28.0 Units: mg/mmol Cr CF: - - -
Alcohol Fract. and Quant.	1D	1 mL Serum or Plasma (Fluoride). Do not use alcohol swab during collection. To minimize evaporative loss, do not open or separate specimen. Analysis includes Acetone, Ethanol, Isopropanol and Methanol. Results not for medico-legal purposes.	Acetone Ketoacidosis: 1.7 - 12.0 Toxic: Greater than 3.4 Units: mmol/L CF: mg/L x 0.0172 Ethanol Toxic: Greater than 39 Impairment: 11 - 22 CNS Depression: Greater than 22 Fatalities: Greater than 87 Units: mmol/L CF: mg/L x 0.0217 Isopropanol

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Toxic: Greater than 6.7 Units: mmol/L CF: mg/L x 0.0166 Methanol Toxic: Greater than 6.2 Units: mmol/L CF: mg/L x 0.0312
Alcohol Fract. and Quant.	2D	1 mL Vitreous Humour. Send specimen in clean transfer vial.	Ethanol - Vitreous Humour Not available Units: mmol/L CF: - - - Methanol - Vitreous Humour Not available Units: mmol/L CF: - - - Isopropanol - Vitreous Humour Not available Units: mmol/L CF: - - - Acetone - Vitreous Humour Not available Units: mmol/L CF: - - -
Aldolase	5D	1 mL Serum. Avoid gel-separator tubes.	Aldolase 0-16y: <14.5 >= 17y: <7.7 Units: U/L CF:
Aldosterone/Renin Activity Ratio	12D	2.0 mL Plasma (EDTA). Avoid gel-separator tubes. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.	Plasma Renin Activity 0.25 - 5.82 Units: ng/mL/h CF: - - - Aldosterone/PRA Ratio 0.9 - 28.9 Units: Ratio CF: - - - Aldosterone Upright 8:00-10:00 a.m.: <= 28 Upright 4:00-6:00 p.m.:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			<= 21 Supine 8:00-10:00 a.m.: 3 - 16 Pediatric Ranges are available Units: ng/dL CF: - - -
Aldosterone	15D	10 mL Urine (24h). Store and send frozen. Provide Collection Date and Collection Volume (litres). Identify drugs administered within 2 weeks as some drugs have a low cross-reactivity in this assay.	Creatinine - Urine Male: 9.0 - 17.0 Female: 7.0 - 15.0 Units: mmol/d CF: mg/d x 0.00884 Creatinine - Urine Not Available Units: mmol/L CF: - - - Sodium - Urine 40 - 220 Units: mmol/d CF: mEq/d x 1.0 Sodium - Urine Not Available Units: mmol/L CF: Aldosterone - 24h Urine Normal salt diet Sodium: Aldosterone <25 : 30 - 77 100-200 : 10 - 43 >200 : 0 - 10 Units: nmol/d CF: µg/d x 2.77
Aldosterone	10D	1 mL Serum or Plasma (Hep). Indicate if patient was upright or recumbent. Store and send frozen. Hemolyzed specimens are unsuitable for analysis. Plasma(EDTA) is not recommended as results will on average be 15 % higher than serum or plasma (Hep).	Aldosterone - Serum/Plasma Upright: 111 - 860 Recumbent: Less than 444 Units: pmol/L CF: - - -
Alkaline Phosphatase: Bone Specific	15D	1 mL Plasma (Heparin) or Serum. Store and send frozen.	Bone Specific ALP Female (Pre-menopausal): <=14

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Female (Post-menopausal): <=22 Male: 0 - 20 Units: µg/L CF: - - -
Alkaline Phosphatase: Isoenzymes	10D	3 mL Serum.	Alkaline Phosphatase: Total 19y and over: 40 - 120 Units: U/L CF: - - - ALP Isoenzymes: Total Liver 20y and over: 32 - 87 Units: U/L CF: - - - ALP Isoenzymes: Bone 20y and over: 14 - 53 Units: U/L CF: - - - ALP Isoenzymes: Intestinal 20y and over: 1 - 13 Units: U/L CF: - - - ALP Isoenzymes: Comment Units: Text CF: - - -
Allergic Lung Serology Panel	15D	1 mL Serum. This test panel includes both Aspergillus Precipitins and Farmer's Lung Precipitins which may be ordered separately if desired - see separate listings.	Aspergillus 1 PPT Negative Units: Qual. Test CF: - - - Aspergillus 2 PPT Negative Units: Qual. Test CF: - - - Aspergillus 3 PPT Negative Units: Qual. Test CF: - - - Micropolyspora Faeni 3 PPT

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Negative Units: Qual. Test CF: - - - T. Vulgaris 1 PPT Negative Units: Qual. Test CF: - - - T. Vulgaris 2 PPT Negative Units: Qual. Test CF: - - -
α-1-Acid Glycoprotein	5D	1 mL Serum. Note: Do not confuse with α Glycoprotein Subunit.	α-1-Acid Glycoprotein 0.51 - 1.17 Units: g/L CF: mg/dL x 0.010
α-1-Antitrypsin Clearance	10D	10 g Timed Stool & Serum. Collect timed stool specimen (1 to 5 days) in pre-weighed containers supplied by ICL. Do not fill any container more than half-full - use multiple containers if necessary. Also submit 1 mL serum collected any time between 24h prior to and 24h after stool collection. Store and send both specimens cold as soon as possible after collection.	No. of collection days None Units: Days CF: - - - AAT Clearance - Stool < 22 Units: mL/d CF: - - - AAT - Serum <19Y: 1.10 - 1.81 >19Y: 0.90 - 2.00 Units: g/L CF: - - -
α-1-Antitrypsin: Proteotype	10D	1.25 mL Serum. Gel-separator tubes are acceptable. Pediatric: 0.5 mL. If the mass spectrometry proteotype and quantitative serum level are discordant, phenotyping (by IEF) will be added and reported at no extra charge.	S Mutation Negative Units: CF: Z Mutation Negative Units: CF: Alpha-1-Antitrypsin, S 100 - 190 Units: CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
α-1-Antitrypsin	2D	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: Total 0.90 - 2.00 Units: g/L CF: mg/dL x 0.0100
α-2-Antiplasmin	7D	3 mL Plasma (Citrate). Separate and freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.	α-2-Antiplasmin 0.79 - 1.19 Units: U/mL CF: - - -
α-2-Macroglobulin	16D	1 mL Serum.	α-2-Macroglobulin 1.02 - 2.59 Units: g/L CF: - - -
α-Fetoprotein	5D	1 mL Fluid. Identify source of fluid clearly on the requisition.	α-Fetoprotein Not available for fluid. Units: µg/L CF: ng/mL x 1.00
α-Fetoprotein	5D	1 mL Serum. This assay is intended for use as a tumour marker. A single frozen 2 mL aliquot is sufficient when ordering AFP and β-hCG Tumour Markers (see separate listing for βhCG Tumour Marker).	α-Fetoprotein 0 - 10 Units: µg/L CF: ng/mL x 1.00
α-Fetoprotein	1D	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 ICL Client Care at (416) 422-3000 ext. 300 or info@hicl.on.ca.	α-Fetoprotein Interpreted on report Units: CF:
α-Glycoprotein Subunit	7D	1 mL Serum. Store and send frozen.	α-Glycoprotein Subunit Pediatric Reference Ranges 0-5d : <= 50 ng/mL 6d-12w: <= 10 ng/mL 3m-17y: <= 1.2 ng/mL Tanner II-IV : <= 1.2 ng/mL Adult Reference Ranges

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Males : <= 0.5 ng/mL Premenopausal females : <= 1.2 ng/mL Postmenopausal females : <= 1.8 ng/mL Units: ng/mL CF: - - -
Aluminum	10D	2 mL Fluid. Indicate source.	Aluminum - Fluid Not available for fluid. Units: µg/L CF: - - - Aluminum - Fluid Not available for fluid. Units: nmol/L CF:
Aluminum	10D	13 mL Urine (Random). Collect and transfer in metal-free container. Provide date of birth and gender. Indicate "Random". Avoid fruit juices and tea for 24 hours prior to collection. Antacids containing aluminium can greatly elevate urine aluminium output.	Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mmol/L CF: Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mg/L CF: Aluminum-U 0.0 - 17.0 Units: µg/L CF: Aluminum-U 0.00 - 0.63 Units: mmol/L CF: Aluminum-U Age and gender related See [Trace Metals Ref. Values] table Units: µmol/mol cr CF: Aluminum-U Age and gender related See [Trace Metals Ref. Values] table

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Units: CF:
Aluminum	10D	13 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date, 24 hour volume and gender. Avoid fruit juices and tea for 24 hours prior to collection. Antacids containing aluminium can greatly elevate urine aluminium output.	Creatinine-U24h Male: 3.5 - 25.0 Female: 2.6 - 20.0 Units: mmol/L CF: - - - Creatinine-U24h Male: 8.6 - 19.4 Female: 6.3 - 13.4 Units: mmol/d CF: - - - Aluminum-U 0.0 - 17.0 Units: µg/L CF: - - - Aluminum-U 0.00 - 0.63 Units: µmol/L CF: - - - Aluminum-U24h 0.0 - 25.1 Units: µg/d CF: - - - Aluminum-U24h 0.00 - 0.93 Units: µmol/d CF: - - -
Aluminum	10D	3 mL Plasma (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Separate as soon as possible and transfer plasma to polypropylene vial.	Aluminum - P 0.0 - 7.9 Units: µg/L CF: Aluminum - P 0 - 293 Units: nmol/L CF:
Aluminum	10D	6 mL Whole Blood (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Store and send cold.	Aluminum - WB 0.0 - 15.1 Units: µg/L CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Aluminum - WB 0 - 560 Units: nmol/L CF:
Aluminum	15D	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck - for long hair only use the first inch or so closest to the scalp. If unable to weigh the hair, submit 1 heaping teaspoon (10-20 mL). Submit in a plastic bag. The test should not be ordered if hair has been bleached, permed or dyed in the last two months. This metal is included in the Toxic (Hair) Panel.	Aluminum - H 0.0 - 8.0 Units: µg/g CF: Aluminum - H 0.000 - 0.296 Units: µmol/g CF:
Aluminum	15D	0.001 g Tissue. Samples for analysis may include paraffin blocks or frozen tissue in saline or formalin. Needle biopsies are also acceptable in formalin. If fixed in formalin, please send an extra tube of formalin. Store and send frozen.	Source Units: CF: Aluminum - Tissue Not Available Units: µg/g CF: Aluminum - Tissue Not Available Units: nmol/g CF:
Aluminum	10D	15 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date and 24-h volume. Avoid mineral supplements for 5 days.	Aluminum - U Not Available Units: µmol/L CF: µg/L x 0.0371 Aluminum - U24h 0.00 - 0.93 Units: µmol/d CF: µg/d x 0.0371
Aluminum	10D	15 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Avoid mineral supplements for 5 days.	Aluminum - U Not Available Units: µmol/L CF: µg/L x 0.0371
Aluminum	10D	2 mL Plasma (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Avoid gel-separator tube. Separate as soon as possible and transfer plasma to polypropylene vial. Store and send cold.	Aluminum - P 0 - 293 Units: nmol/L CF: ng/L x 0.037

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Aluminum	10D	4 mL Whole Blood (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Do not open tube or separate. Store and send cold.	Aluminum - WB 0 - 560 Units: nmol/L CF: ng/L x 0.037
American beech (t5), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	American beech (t5), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -
American Cockroach (i206), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	American Cockroach (i206), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -
Amikacin: Peak	1D	1 mL Serum. Avoid gel-separator tubes. Submit peak specimen (i.e. collected 1 h after IM or 15 minutes after a 60 minute IV (or 30 minutes after a 30 minute IV) dosage). Collect with third dose if possible. Separate and freeze as soon as possible. Store and send frozen. Label Peak specimen and requisition clearly.	Amikacin: Peak 20.0 - 30.0 Units: mg/L CF: - - -
Amikacin: Trough	1D	1 mL Serum. Avoid gel-separator tubes. Submit trough specimen (i.e. collected prior to I.M. or I.V. drug administration.) Collect with third dose if	Amikacin: Trough Less than 8.0 Units: mg/L CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
		possible. Separate and freeze as soon as possible. Store and send frozen. Label Trough specimen and requisition clearly.	
Amino Acids Screen: DNPH	7D	5 mL Urine. Date of birth and gender required for interpretation. Store and send frozen. This is a screening test for branched-chain (alpha-keto) amino acidurias. A complete Amino Acid test is the recommended alternative - refer to separate listings for urine and blood.	Amino Acids Screen: DNPH Refer to Report Units: Qual. Test CF: - - -
Amino Acids Screen: Nitroprusside	7D	5 mL Urine. Date of birth and gender required for interpretation. Store and send frozen. This is a test for sulfhydryl amino acids used to screen for cystinuria and homocystinuria. A complete Amino Acid test is the recommended alternative - refer to separate listings for urine and blood.	Amino Acids Screen: Nitrop. Refer to Report Units: Qual. Test CF: - - -
Amino Acids: Quantitation	7D	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 Acid - Serum/Plasma Interpretation provided on report. See [Amino Acid Data] table for reference ranges. Units: µmol/L CF: - - -
Amino Acids: Quantitation	7D	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. The report includes a full panel of amino acids and an interpretive comment.	Creatinine Not available for random urine. Units: µmol/L CF: - - - Amino Acid (Various) Interpretation provided on report. See [Amino Acids Data] table for reference ranges. Units: mmol/mol cr CF: - - -
Amiodarone	7D	3 mL Serum or Plasma (Hep). Avoid gel-separator tubes. Store and send frozen. To monitor therapy, draw trough specimen prior to next dose. Analysis includes Desethylamiodarone.	Amiodarone 1.0 - 2.0 Toxic: Greater than 2.0 Units: mg/L CF: - - - Desethylamiodarone 1.0 - 2.0 Units: mg/L CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Amitriptyline	5D	3 mL Serum or Plasma (EDTA). Avoid gel-separator tubes and separate within 2 hours. Submit trough specimen (i.e. collected within 1 h prior to next dose or at least 12 hours post-dose.) Assay includes Nortriptyline.	Amitriptyline (A) No therapeutic range for Amitriptyline alone Units: µmol/L CF: - - - Nortriptyline (N) No therapeutic range for Nortriptyline alone Units: µmol/L CF: - - - Combined (A + N) Therapeutic: 0.45 - 0.90 Toxic: > 1.80 Units: µmol/L CF: - - -
Ammonia	2D	1 mL Plasma (EDTA). Avoid gel-separator tubes. Collect in pre-chilled tube and separate at 4° if possible. Freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.	Ammonia Adult: Less than 48 Neonate: Less than 73 Units: µmol/L CF: - - -
Amprenavir	10D	2 mL Plasma (Heparin). Avoid gel-separator tubes. Separate within 2h of collection and transfer to clean transfer vial. Store and send frozen. Preferred collection time is trough collected within 30 min prior to the next dose or 6-14h post dose (twice daily dosing), 12-26h post dose (once daily dosing). Peak collection time: 2-4h post dose. Indicate collection time on specimen and requisition. The 2 mL specimen is sufficient for analysis of multiple antiretroviral drugs with a reduced fee for multiple drugs on the same specimen. Minimum volume is 200 µL.	Amprenavir 0.40 - 1.25 Units: mg/L CF:
Amylase Isoenzyme	20D	1 mL Serum. Indicate clinical conditions that may affect Amylase. This assay will detect Macroamylase if present.	Amylase - Total 20 - 110 Units: U/L CF: - - - Amylase - Pancreatic type 5 - 55 Units: U/L CF: - - - Amylase - Salivary type

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			20 - 75 Units: U/L CF: - - - Interpretation Provided on report. Units: CF:
Amylase/Creatinine Clearance Ratio	2D	1 mL Serum and Urine. Collect simultaneously. Adjust urine pH to alkaline range.	Amylase/Creat. Clearance Ratio 0.01 - 0.04 Units: U/mmol Cr CF: - - -
Amylase	2D	1 mL Serum or Plasma (LiHep). Gel-separator tubes acceptable. Separate within 2 hours.	Amylase - Serum/Plasma 20 - 110 Units: U/L CF: - - -
Amylase	1D	1 mL Fluid. Indicate source of fluid clearly on the requisition.	Amylase - Fluid Not available for fluid. Units: U/L CF:
Angiotensin Converting Enzyme	3D	1 mL CSF. This test is for `Research Use Only'.	Angiotensin Conv. Enz. (ACE) Not available for CSF. Units: U/L CF: - - -
Angiotensin Converting Enzyme	3D	1 mL Serum. Collect after overnight fast to avoid interference from lipemia.	Angiotensin Conv. Enz. (ACE) <1y: 16 - 126 1-3y: 14 - 108 3-5y: 12 - 89 5-10y: 14 - 106 10-13y: 15 - 111 13-17y: 13 - 100 17-20y: 11 - 79 >20Y: 9 - 63 WARNING: Drugs targeting the Renin-Angiotensin system confound inter-pretation of ACE in relation to Sarcoidisis. Units: U/L CF: - - -
Anti-DNase B Titer	6D	1 mL Serum. Collect serum in a plain red-top tube. Gel-separator tubes are acceptable. Fasting sample preferred but not required.	Anti-DNase B Titer <5y: 0 - 250 5-17y: 0 - 375

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			>=18y: 0 - 300 Units: U/mL CF:
Anti-Immunoglobulin A	13D	1 mL Serum. Collect sample in a plain, red-top tube. Gel-separator tube is acceptable.	Anti-IgA Antibodies < 99 Units: U/mL CF:
Anti-Mullerian Hormone	20D	1 mL Serum or Plasma (Li-Heparin). Separate and freeze as soon as possible. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.	Anti-Mullerian Hormone F, 18-25y: 6.8 - 95.0 F, 26-30y: 1.2 - 53.0 F, 31-35y: 0.5 - 52.0 F, 36-40y: 0.2 - 51.0 F, 41-45y: 0.0 - 23.0 F, >= 46y: 0.0 - 8.2 M, >= 19y: 5.2 - 110.0 Units: pmol/L CF: ng/mL x 7.14
Anti-Streptolysin O Titre	5D	1 mL Serum. Acute and convalescent sera (10-14 days after onset of illness) should be analyzed to document acute infection.	Anti-Streptolysin O - Titre Adults and Children >3 y: Negative: <200 Children <=3 y: Negative: <50 A 4 fold rise or fall in antibody titre is compatible with a recent streptococcal infection. The peak ASOT is usually achieved by 3 to 5 weeks post infection, then declines over the next 6 to 8 weeks. Units: IU/mL CF: - - -
Anti-Thrombin III: Activity	7D	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: Activity 0 - 3 m: 0.30 - 1.20 >3 m: 0.80 - 1.40 Units: U/mL CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Anti-Thrombin III: Antigen	7D	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.	Anti-Thrombin III: Antigen 0.23 - 0.32 Units: g/L CF: - - -
Antidiuretic Hormone	35D	3 mL Plasma (EDTA). Serum is not suitable for analysis. Collect in pre-chilled tube, clot on ice and separate at 4°. Divide equally into 2 pre-chilled transfer 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.	Antidiuretic Hormone 0.8 - 3.5 Interpret in conjunction with Osmolality. Units: pmol/L CF: pg/mL x 0.940
Antimony	10D	13 mL Urine (Random). Collect and transfer in metal-free container. Provide date of birth and gender. Indicate "Random".	Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mmol/L CF: Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mg/L CF: Antimony-U 0.000 - 0.056 Units: µg/L CF: Antimony-U 0.00 - 0.46 Units: nmol/L CF: Antimony-U Age and gender related See [Trace Metals Ref. Values] table Units: nmol/mol cr CF: Antimony-U Age and gender related

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			See [Trace Metals Ref. Values] table Units: ng/g cr CF:
Antimony	10D	13 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date, 24 hour volume and gender.	Creatinine-U24h Male: 3.5 - 25.0 Female: 2.6 - 20.0 Units: mmol/L CF: - - - Creatinine-U24h Male: 8.6 - 19.4 Female: 6.3 - 13.4 Units: mmol/d CF: - - - Antimony-U 0.000 - 0.056 Units: µg/L CF: - - - Antimony-U 0.00 - 0.46 Units: nmol/L CF: - - - Antimony-U24h 0.000 - 0.084 Units: µg/d CF: - - - Antimony-U24h 0.00 - 0.69 Units: nmol/d CF: - - -
Antimony	10D	3 mL Erythrocyte. Collect Na-heparin whole blood in glass contaminant-free tube (e.g. BD 366480). Do not use plastic blood collection tubes since they contain high levels of Antimony. Separate and transfer erythrocytes to a polypropylene transfer vial. Store and send frozen - see collection instructions link above.	Antimony - E 0.00 - 0.20 Units: µg/L CF: Antimony - E 0.00 - 1.64 Units: nmol/L CF:
Antimony	10D	6 mL Whole Blood (Na-Heparin). Collect Na-heparin whole blood in glass contaminant-free tube (e.g. BD 366480). Do not use plastic blood	Antimony - WB 0.000 - 0.090 Units: µg/L CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
		collection tubes since they contain high levels of Antimony. Store and send cold.	Antimony - WB 0.00 - 0.74 Units: nmol/L CF:
Antimony	15D	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck - for long hair only use the first inch or so closest to the scalp. If unable to weigh the hair, submit 1 heaping teaspoon (10-20 mL). Submit in a plastic bag. The test should not be ordered if hair has been bleached, permed or dyed in the last two months. This metal is included in the Toxic (Hair) Panel.	Antimony - H 0.000 - 0.040 Units: µg/g CF: Antimony - H 0.00 - 0.33 Units: nmol/g CF:
Antimony	10D	15 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date and 24-h volume. Avoid mineral supplements for 5 days.	Antimony - U 0.00 - 4.74 Units: nmol/L CF: µg/L x 8.21 Antimony - U24h 0.00 - 4.74 Units: nmol/d CF: µg/d x 8.21
Antimony	10D	15 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Avoid mineral supplements for 5 days.	Antimony - U 0.00 - 4.74 Units: nmol/L CF: µg/L x 8.21
Antimony	10D	2 mL Plasma (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Avoid gel-separator tube. Separate as soon as possible and transfer plasma to polypropylene vial. Store and send cold.	Antimony - P 0.00 - 3.16 Units: nmol/L CF: µg/L x 8.21
Antimony	10D	2 mL Erythrocyte. Collect K2-EDTA blood in contaminant-free tube. Separate and transfer erythrocytes to a polypropylene transfer vial. Store and send frozen - See Collection Instructions link above.	Antimony - E 0.00 - 1.64 Units: nmol/L CF: µg/L x 8.21
Apolipoprotein A1	10D	1 mL Serum or Plasma (EDTA). A 12-14 hour fast is recommended but a non-fasting sample is acceptable. Freeze if not sent for analysis within 2 days 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 A1 0.92 - 1.96 Units: g/L CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Apolipoprotein B	10D	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 B 0.59 - 1.46 Units: g/L CF: - - -
Apolipoprotein C &/or E	20D	6 mL Plasma (EDTA). Assay is available on a consultation basis only. Contact HICL prior to specimen collection at (416) 422-3000 Ext. 300 or info@hicl.on.ca. Assay is not done if Triglycerides are normal.	Apolipoprotein E & C Results interpreted on report. Units: Qual. test CF: - - -
Apolipoprotein C2 Activation	20D	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 ICL Client Care (416) 422-3000 ext. 300 or info@hicl.on.ca	Apolipoprotein C2 Activation Greater than 0.20 Units: ffa/mL/min CF: N.A.
Apple Mal d 1 (f434), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Apple Mal d 1 (f434), IgE < 0.35 Interpretive Comment: PR-10 protein. Heat and digestion labile. Suggests birch pollen-related apple allergy. Associated with local reactions. Cooked apple may be tolerated. Units: KU/L CF: - - -
Apple Mal d 3 (f435), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Apple Mal d 3 (f435), IgE < 0.35 Interpretive Comment: Lipid transfer protein (LTP). Heat and digestion stable. Indicates primary LTP allergy. Associated with local as well as systemic reactions. Risk for reactions also to cooked apples.

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Units: KU/L CF: - - -
Apple Phl p 12 (g212), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Apple Phl p 12 (g212), IgE < 0.35 Interpretive Comment: Profilin from timothy. Homologue of apple profiling (Mal d 4). Present and similar in all plant foods and pollen. Suggests a grass pollen related apple allergy. Units: KU/L CF: - - -
Arsenic: Inorganic	15D	13 mL Urine (Random). Collect and transfer in metal-free container. Provide date of birth and gender. 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.	Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mmol/L CF: Creatinine-u Age and gender related See [Trace Metals Ref. Values] table Units: mg/L CF: Arsenic-Inorganic-U 0.0 - 10.0 Units: µg/L CF: Arsenic-Inorganic-U 0.00 - 0.13 Units: µmol/L CF: Arsenic-Inorganic-U Age and gender related See [Trace Metals Ref. Values] table Units: µmol/mol cr CF: Arsenic-Inorganic-U Age and gender related

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			See [Trace Metals Ref. Values] table Units: µg/g cr CF:
Arsenic: Inorganic	15D	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.	Creatinine - First morning Male: 3.5 - 25.0 Female: 2.6 - 20.0 Units: mmol/L CF: - - - Creatinine - Urine (24h) Male: 8.6 - 19.4 Female: 6.3 - 13.4 Units: mmol/d CF: - - - Arsenic-Inorganic-U 0.0 - 10.0 Units: µg/L CF: - - - Arsenic-Inorganic-U 0.00 - 0.13 Units: µmol/L CF: - - - Arsenic-Inorganic-U24h 0.0 - 15.0 Units: µg/d CF: - - - Arsenic-Inorganic-U24h 0.00 - 0.20 Units: µmol/d CF:
Arsenic: Total	10D	13 mL Urine (Random). Collect and transfer in metal-free container. Provide date of birth and gender. 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.	Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mmol/L CF: Creatinine-u Age and gender related See [Trace Metals Ref. Values] table Units: mg/L CF: Arsenic-U

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			0.0 - 40.0 Units: µg/L CF: Arsenic-U 0.00 - 0.53 Units: µmol/L CF: Arsenic-U Age and gender related See [Trace Metals Ref. Values] table Units: µmol/mol cr CF: Arsenic-U Age and gender related See [Trace Metals Ref. Values] table Units: µg/g cr CF:
Arsenic: Total	10D	13 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date, 24 hour volume and gender. 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.	Creatinine - First Morning Male: 3.5 - 25.0 Female: 2.6 - 20.0 Units: mmol/L CF: Creatinine - 24h Urine Male: 8.6 - 19.4 Female: 6.3 - 13.4 Units: mmol/d CF: Arsenic - Urine 0.0 - 40.0 Units: µg/L CF: Arsenic - Urine 0.00 - 0.53 Units: µmol/L CF: Arsenic - 24h Urine 0.0 - 59.9 Units: µg/d CF: Arsenic - 24h urine

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			0.00 - 0.80 Units: µmol/d CF:
Arsenic: Total	10D	3 mL Erythrocyte. Collect K2-EDTA blood in contaminant-free tube. Separate and transfer erythrocytes to a polypropylene transfer vial. Store and send frozen - See Collection instructions link above.	Arsenic - E 0.0 - 4.9 Units: µg/L CF: Arsenic - E 0.0 - 65.4 Units: nmol/L CF:
Arsenic: Total	10D	6 mL Whole Blood (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Store and send cold.	Arsenic - WB 0.0 - 3.8 Units: µg/L CF: Arsenic - WB 0.0 - 50.7 Units: nmol/L CF:
Arsenic: Total	15D	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck - for long hair only use the first inch or so closest to the scalp. If unable to weigh the hair, submit 1 heaping teaspoon (10-20 mL). Submit in a plastic bag. The test should not be ordered if hair has been bleached, permed or dyed in the last two months. This metal is included in the Toxic (Hair) Panel.	Arsenic - H 0.000 - 0.150 Units: µg/g CF: Arsenic - H 0.0 - 2.0 Units: nmol/g CF:
Arsenic: Total	15D	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 - Nail <= 0.500 Units: µg/g CF: Arsenic - Nail <= 6.68 Units: nmol/g CF:
Aryl Sulfatase A	15D	7 mL Whole blood (Heparin). Maintain at ambient temperature. Sample must be analysed within 12 h of collection. The sample must be delivered to ICL before 1200 h (noon) on the day of collection. Urine sulfatides may	Aryl Sulfatase A - Leukocytes 21 - 72 Units: nmol/h/mg CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
		be recommended as an alternate screen. For further information contact ICL Client Care at (416) 422-3000 ext. 300 or info@hicl.on.ca	
Aspergillus Mix (Mx4), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to an allergen mix (Aspergillus fumigatus,Aspergillus niger,Aspergillus terreus, Aspergillus flavus) This assay provides a single qualitative result only. It does not provide information on the amount of IgE specific for any of the component allergens within the mix. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Aspergillus Mix (Mx4), IgE Negative Units: KU/L CF: - - -
Aspergillus Precipitins	10D	1.0 Serum. This test is included in Allergic Lung Serology Panel. See separate listing.	Aspergillus 1 PPT Negative Units: Qual. Test CF: - - - Aspergillus 2 PPT Negative Units: Qual. Test CF: - - - Aspergillus 3 PPT Negative Units: Qual. Test CF: - - -
Atazanavir	10D	2 mL Plasma (Heparin). Avoid gel-separator tubes. Separate within 2h of collection and transfer to clean transfer vial. Store and send frozen. Preferred collection time is trough collected within 30 min prior to the next dose or 6-14h post dose (twice daily dosing), 12-26h post dose (once daily dosing). Peak collection time: 2-4h post dose. Indicate collection time on specimen and requisition. The 2 mL specimen is sufficient for analysis of multiple antiretroviral drugs with a reduced fee for multiple drugs on the same specimen. Minimum volume is 200 µL.	Atazanavir 0.10 - 0.15 Units: mg/L CF:
Autoantibodies Panel	8D	2 mL Serum. The panel of tests includes Mitochondrial Antibodies, Parietal Cell Antibodies and Smooth Muscle Antibodies. Mitochondrial Antibodies will be titred when the Mitochondrial Antibodies Screen is positive.	Mitochondrial Antibody Negative If positive, Mitochondrial Antibodies will be titred. Units: Qual. Test CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Mitochondrial Antibody Titre Negative Units: Titre CF: Smooth Muscle Antibody Negative Units: Qual. Test CF: Parietal Cell Antibody Negative Units: Qual. Test CF:
Avian Precipitins: Budgie	10D	1 mL Serum. Request must specify: Avian Precipitins - Budgie. Refer to separate listings for ordering mnemonics of other available avian precipitins - each requested precipitin must be specified: Budgie, Canary, Chicken, Cockatiel, Duck, Goose, Parrot, Pigeon and Turkey.	Precipitin - Budgie Antigen Not detected Units: Qual. test CF: - - -
Avian Precipitins: Canary	10D	1 mL Serum. Request must specify: Avian Precipitins - Canary. Refer to separate listings for ordering mnemonics of other available avian precipitins - each requested precipitin must be specified: Budgie, Canary, Chicken, Cockatiel, Duck, Goose, Parrot, Pigeon and Turkey.	Precipitin - Canary Antigen Not detected Units: Qual. test CF: - - -
Avian Precipitins: Chicken	10D	1 mL Serum. Request must specify: Avian Precipitins - Chicken. Refer to separate listings for ordering mnemonics of other available avian precipitins - each requested precipitin must be specified: Budgie, Canary, Chicken, Cockatiel, Duck, Goose, Parrot, Pigeon and Turkey.	Precipitin - Chicken Antigen Not detected Units: Qual. test CF: - - -
Avian Precipitins: Cockatiel	10D	1 mL Serum. Request must specify: Avian Precipitins - Cockatiel. Refer to separate listings for ordering mnemonics of other available avian precipitins - each requested precipitin must be specified: Budgie, Canary, Chicken, Cockatiel, Duck, Goose, Parrot, Pigeon and Turkey.	Precipitin - Cockatiel Antigen Not detected Units: Qual. test CF: - - -
Avian Precipitins: Duck	10D	1 mL Serum. Request must specify: Avian Precipitins - Duck. Refer to separate listings for ordering mnemonics of other available avian precipitins - each requested precipitin must be specified: Budgie, Canary, Chicken, Cockatiel, Duck, Goose, Parrot, Pigeon and Turkey.	Precipitin - Duck Antigen Not detected Units: Qual. test CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Avian Precipitins: Goose	10D	1 mL Serum. Request must specify: Avian Precipitins - Goose. Refer to separate listings for ordering mnemonics of other available avian precipitins - each requested precipitin must be specified: Budgie, Canary, Chicken, Cockatiel, Duck, Goose, Parrot, Pigeon and Turkey.	Precipitin - Goose Antigen Not Detected Units: Qual. test CF: - - -
Avian Precipitins: Parrot	10D	1 mL Serum. Request must specify: Avian Precipitins - Parrot. Refer to separate listings for ordering mnemonics of other available avian precipitins - each requested precipitin must be specified: Budgie, Canary, Chicken, Cockatiel, Duck, Goose, Parrot, Pigeon and Turkey.	Precipitin - Parrot Antigen Not detected Units: Qual. test CF: - - -
Avian precipitins: Pigeon	10D	1 mL Serum. Request must specify: Avian Precipitins - Pigeon. Refer to separate listings for ordering mnemonics of other available avian precipitins - each requested precipitin must be specified: Budgie, Canary, Chicken, Cockatiel, Duck, Goose, Parrot, Pigeon and Turkey.	Precipitin - Pigeon Antigen Not Detected Units: Qual. test. CF: - - -
Avian Precipitins: Turkey	10D	1 mL Serum. Request must specify: Avian Precipitins - Turkey. Refer to separate listings for ordering mnemonics of other available avian precipitins - each requested precipitin must be specified: Budgie, Canary, Chicken, Cockatiel, Duck, Goose, Parrot, Pigeon and Turkey.	Precipitin - Turkey Antigen Not detected Units: Qual. test CF: - - -
Azathioprine Metabolites	12D	5.0 mL Whole Blood (EDTA). Collect trough specimen 0-30 minutes prior to next dose. Store and send cold.	6-Thioguanine (6-TG) 400 - 750 Units: pmol/8x10*8 RBC CF: 6-Methylmercaptopurine (6-MMP) Therapeutic: < 6600 Critical: > 6600 Units: pmol/8x10*8 RBC CF:
B-Type Natriuretic Peptide (NT-Pro)	2D	1 mL Serum or Plasma. Plasma (Li, Heparin or EDTA) is acceptable. Separate as soon as possible. Store and send frozen.	B-Type Natriuretic Peptide Rule-in NT-proBNP values for Cardiac Cause of Dyspnea in Acute Care setting: <50 y: >450 50 - 75 y: >900 >75 y: >1800

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Ambulatory Care setting: <50 y: >125 50 - 75 y: >250 >75 y: >500 Units: ng/L CF: - - -
Bahia Grass (g17), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Bahia Grass (g17), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -
Barbiturates: Screen	2D	5 mL Urine (Random). Collect specimen and transport cold.	Creatinine - urine Not Available Units: mmol/L CF: Barbiturates Screen - Urine Not Detected Units: CF:
Barium	10D	13 mL Urine (Random). Collect and transfer in metal-free container. Provide date of birth and gender. Indicate "Random".	Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mmol/L CF: Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mg/L CF: Barium-U 0.000 - 3.500 Units: µg/L CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Barium-U 0.0 - 25.2 Units: nmol/L CF: Barium-U Age and gender related See [Trace Metals Ref. Values] table Units: µmol/mol cr CF: Barium-U Age and gender related See [Trace Metals Ref. Values] table Units: µg/g cr CF:
Barium	10D	13 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date, 24 hour volume and gender.	Creatinine-U24h Male: 3.5 - 25.0 Female: 2.6 - 20.0 Units: mmol/L CF: - - - Creatinine-U24h Male: 8.6 - 19.4 Female: 6.3 - 13.4 Units: mmol/d CF: - - - Barium-U 0.000 - 3.500 Units: µg/L CF: - - - Barium-U 0.0 - 25.2 Units: nmol/L CF: - - - Barium-U24h 0.0 - 5.0 Units: µg/d CF: - - - Barium-U24h 0.0 - 36.4 Units: nmol/d CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Barium	15D	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck - for long hair only use the first inch or so closest to the scalp. If unable to weigh the hair, submit 1 heaping teaspoon (10-20 mL). Submit in a plastic bag. The test should not be ordered if hair has been bleached, permed or dyed in the last two months. This metal is included in the Toxic (Hair) Panel.	Barium - H 0.0 - 1.5 Units: µg/g CF: Barium - H 0.0 - 10.9 Units: nmol/g CF:
Barium	10D	15 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date and 24-h volume. Avoid mineral supplements for 5 days.	Barium - U 0.0 - 36.5 Units: nmol/L CF: µg/L x 7.2 Barium - U 0.0 - 36.5 Units: nmol/d CF: µg/d x 7.2
Barium	10D	15 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Avoid mineral supplements for 5 days.	Barium - U 0.0 - 36.5 Units: nmol/L CF: µg/L x 7.2
Bay Leaf (f278), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Bayleaf (f278), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -
Benzodiazepine Identification	2D	1 mL Serum or Plasma (Heparin). Stat analysis available.	Benzodiazepine screen, blood Not Detected Units: Text CF:
Benzodiazepine Identification	2D	5 mL Urine (random). Stat analysis available.	Benzodiazepine Identification Not Detected Units: CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Creatinine - Urine Not Available Units: mmol/L CF: - - -
Bermuda Grass (g2), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Bermuda Grass (g2), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -
Beryllium	10D	13 mL Urine (Random). Collect and transfer in metal-free container. Provide date of birth and gender. Indicate "Random".	Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mmol/L CF: - - - Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mg/L CF: Beryllium-U 0.000 - 0.100 Units: µg/L CF: Beryllium-U 0.0 - 11.1 Units: nmol/L CF: Beryllium-U Age and gender related See [Trace Metals Ref. Values] table Units: µmol/mol cr CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Beryllium-U Age and gender related See [Trace Metals Ref. Values] table Units: ng/g cr CF:
Beryllium	10D	13 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date, 24 hour volume and gender.	Creatinine-U24h Male: 3.5 - 25.0 Female: 2.6 - 20.0 Units: mmol/L CF: - - - Creatinine-U24h Male: 8.6 - 19.4 Female: 6.3 - 13.4 Units: mmol/d CF: - - - Beryllium-U 0.000 - 0.100 Units: µg/L CF: - - - Beryllium-U 0.0 - 11.1 Units: nmol/L CF: - - - Beryllium-U24h 0.00 - 0.15 Units: µg/d CF: - - - Beryllium-U24h 0.0 - 16.7 Units: nmol/d CF: - - -
Beryllium	15D	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 interefere.	Beryllium - H 0 - 0.040 Units: µg/g CF: Beryllium - H 0 - 0.44 Units: nmol/g CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Beryllium	10D	15 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date and 24-h volume. Avoid mineral supplements for 5 days.	Beryllium - U 0.0 - 6.0 Units: nmol/L CF: ng/L x 0.111 Beryllium - U24h 0.0 - 6.0 Units: nmol/d CF: ng/d x 0.111
Beryllium	10D	15 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Avoid mineral supplements for 5 days.	Beryllium - U 0.0 - 6.0 Units: nmol/L CF: ng/L x 0.111
β-2-Glycoprotein 1 Antibody	20D	2 mL Serum. Separate serum into three aliquots. Freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.	β-2-Glycoprotein 1 Ab.: IgG < 11 Units: G Units CF: - - - β-2-Glycoprotein 1 Ab.: IgM < 18 Units: M Units CF: - - -
β-2-Microglobulin	5D	1 mL Serum. Fasting specimen preferred. Freeze as soon as possible. Store and send frozen. Freeze as soon as possible. Send frozen.	β-2-Microglobulin - Serum < 50 y: 1.16 - 2.52 >= 50 y: 1.42 - 3.21 Reference values for persons <=20 y are not well established but literature sources suggest that they are not significantly different from adult ranges. Units: mg/L CF: nmol/L x 0.0118
β-2-Microglobulin	7D	1 mL Fluid. If bloody, collect in a gel separator tube, centrifuge and separate as soon as possible. Freeze as soon as possible. Store and send frozen.	Source Units: CF: Beta 2 Microglobulin Not Available Units: mg/L CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
β-2-Microglobulin	10D	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. Machine: Roch Modular (Sep09)} {New method & rr Sep09}	Creatinine - Urine (random) 0 y - M & F: 0.4 - 5.2 1 m - M & F: 0.3 - 9.0 2 y - M & F: 1.1 - 12.8 5 y - M & F: 1.2 - 25.3 17 y and over: M: 2.4 - 32.3 F: 1.1 - 21.8 Units: mmol/L CF: - - - β-2-Microglobulin - Urine Male: 0 - 300 Female: 0 - 212 Units: µg/L CF: - - - β-2-Microglob./Creat. Ratio Male & Female: 0 - 29 Units: µg/mmol cr. CF: - - -
β-2-Microglobulin	2D	5 mL Urine (Fetal). Store and send frozen. If the specimen thaws, it is unsuitable for analysis.	β-2-Microglobulin (Fetal Urine) Reference intervals are specific to gestational age. Locally verified intervals are not available. (Further information: Muller et al. Clin Chem 1996 42:1855) Units: mg/L CF: ---
β-Carotene	20D	4 mL Serum. Avoid hemolysis. Protect from light. Specimen must be labelled inside and outside light-protecting wrap. Store and send frozen.	β-Carotene 0.9 - 3.7 Units: µmol/L CF: mg/L x 1.86
β-Hexosaminidase	10D	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 Requistion. Ontario clients may incur only a Transfer Fee.	β-Hexosaminidase: Total 439 - 1300 Units: nmol/h/mL CF: - - - Hexosaminidase-B See % Hexosaminidase-B

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Units: nmol/h/mL CF: - - - % Hexosaminidase-B 30 - 45 Interpreted on Report Units: % of Total CF: - - -
β-Hydroxybutyrate	2D	1 mL Serum. Separate and freeze immediately. Store and send frozen.	β-Hydroxybutyrate < 18y: <= 0.29 18y and up: <= 0.42 Units: mmol/L CF:
β-Transferrin	10D	2 mL Fluid. Indicate source. Store and send frozen. Bloody fluid: Spin, separate and freeze - indicate on requisition. Analysis includes β-1-Transferrin and β-2-Transferrin.	β-1-Transferrin Present in plasma, CSF and other body fluids Units: Qual. Test CF: - - - β-2-Transferrin Present only in CSF. Absence indicates that the specimen does not contain CSF Units: Qual. Test CF: - - -
Bile Acids: Total	7D	0.5 mL Serum. Collect fasting specimen. Plasma is not acceptable. Store and send frozen.	Bile Acids: Total Less than 6.7 Units: µmol/L CF: µg/mL x 2.45
Biotin (Vitamin B7)	30D	2 mL Serum. Collect in a plain, red-top or gel separator tube. Protect specimen from light. Specimen must be labelled inside and outside light-protecting wrap. Store and send frozen.	Biotin (Vitamin B7) <12y: 57.0 - 2460.2 >=12y: 221.0 - 3004.0 Units: pg/mL CF:
Biotinidase	15D	1 mL Serum or Plasma. Store and send frozen.	Biotinidase 369 - 432 Units: nmol/mL/h CF: - - -
Bismuth	10D	13 mL Urine (Random). Collect and transfer in metal-free container. Provide date of birth and gender. Indicate "Random".	Creatinine-U Age and gender related See [Trace Metals Ref. Values] table

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Units: mmol/L CF: Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mg/L CF: Bismuth-U 0.000 - 0.070 Units: µg/L CF: - - - Bismuth-U 0.00 - 0.34 Units: nmol/L CF: - - - Bismuth-U Age and gender related See [Trace Metals Ref. Values] table Units: nmol/mol cr CF: - - - Bismuth-U Age and gender related See [Trace Metals Ref. Values] table Units: ng/g cr CF: - - -
Bismuth	10D	13 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date, 24 hour volume and gender.	Creatinine-U24h Male: 3.5 - 25.0 Female: 2.6 - 20.0 Units: mmol/L CF: - - - Creatinine-U24h Male: 8.6 - 19.4 Female: 6.3 - 13.4 Units: mmol/d CF: - - - Bismuth-U 0.000 - 0.070 Units: µg/L CF: - - - Bismuth-U

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			0.00 - 0.34 Units: nmol/L CF: - - - Bismuth-U24h 0.000 - 0.100 Units: µg/d CF: - - - Bismuth-U24h 0.00 - 0.48 Units: nmol/d CF: - - -
Bismuth	15D	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck - for long hair only use the first inch or so closest to the scalp. If unable to weigh the hair, submit 1 heaping teaspoon (10-20 mL). Submit in a plastic bag. The test should not be ordered if hair has been bleached, permed or dyed in the last two months. This metal is included in the Toxic (Hair) Panel.	Bismuth - H 0.000 - 0.095 Units: µg/g CF: Bismuth - H 0.00 - 0.45 Units: nmol/g CF:
Bismuth	10D	15 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date and 24-h volume. Avoid mineral supplements for 5 days.	Bismuth - U Not Available Units: nmol/L CF: µg/L x 4.785 Bismuth - U24h 0.00 - 0.48 Units: nmol/d CF: µg/d x 4.785
Bismuth	10D	15 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Avoid mineral supplements for 5 days.	Bismuth - U Not Available Units: nmol/L CF: µg/L x 4.785
Bismuth	10D	2 mL Plasma (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Avoid gel-separator tube. Separate as soon as possible and transfer plasma to polypropylene vial. Store and send cold.	Bismuth - P 0.00 - 0.32 Units: nmol/L CF: µg/L x 4.785
Bismuth	10D	4 mL Whole Blood (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Do not open tube or separate. Store and send cold.	Bismuth - WB 0 - 72 Units: nmol/L CF: µg/L x 4.785

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
BK Virus PCR: Quantitative	8D	1 mL Separated plasma (EDTA). For transplant patients only. Collect specimen, separate plasma and freeze. Ship on dry ice.	BK Virus DNA NOT DETECTED Units: copies/mL CF:
BK Virus	5D	2 mL Plasma (EDTA). Separate as soon as possible. Provide date of birth, collection date and time of collection.	BK Virus - Plasma Negative Units: Qual. test. CF: - - -
BK Virus	5D	2 mL Urine (Random). Collect specimen into sterile container. Provide date of birth, collection date and time of collection.	BK Virus - Urine Negative Units: Qual. test. CF: - - -
Boron	10D	13 mL Urine (Random). Collect and transfer in metal-free container. Provide date of birth and gender. Indicate "Random". Avoid mineral supplements for 5 days.	Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mmol/L CF: Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mg/L CF: - - - Boron-U 0.50 - 7.00 Units: mg/L CF: - - - Boron-U 0.05 - 0.65 Units: mmol/L CF: - - - Boron-U Age and gender related See [Trace Metals Ref. Values] table Units: mmol/mol cr CF: - - - Boron-U Age and gender related See [Trace Metals Ref. Values] table Units: mg/g cr CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Boron	10D	13 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date, 24 hour volume and gender. Avoid mineral supplements for 5 days.	Creatinine-U24h Male: 3.5 - 25.0 Female: 2.6 - 20.0 Units: mmol/L CF: - - - Creatinine-U24h Male: 8.6 - 19.4 Female: 6.3 - 13.4 Units: mmol/d CF: - - - Boron-U 0.50 - 7.00 Units: mg/L CF: - - - Boron-U 0.05 - 0.65 Units: mmol/L CF: - - - Boron-U24h 0.8 - 10.5 Units: mg/d CF: - - - Boron-U24h 0.074 - 0.970 Units: mmol/d CF: - - -
Boron	15D	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck - for long hair only use the first inch or so closest to the scalp. If unable to weigh the hair, submit 1 heaping teaspoon (10-20 mL). Submit in a plastic bag. The test should not be ordered if hair has been bleached, permed or dyed in the last two months. This metal is included in the Essential (Hair) Panel.	Boron - H 0.40 - 3.39 Units: µg/g CF: Boron - H 0.037 - 0.314 Units: µmol/g CF:
Boron	10D	15 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date and 24-h volume. Avoid mineral supplements for 5 days.	Boron - U 0.065 - 0.620 Units: mmol/L CF: mg/L x 0.0925 Boron - U24h

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			0.065 - 0.620 Units: mmol/d CF: mg/d x 0.0925
Boron	10D	15 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Avoid mineral supplements for 5 days.	Boron - U 0.065 - 0.620 Units: mmol/L CF: mg/L x 0.0925
Box-elder (t1), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Box-elder (t1), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -
Brazil Nut (f18), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Brazil Nut (f18), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -
Brazil Nut Ber e 1 (f354), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Brazil Nut Ber e 1 (f354), IgE < 0.35 Interpretive Comment: Storage protein (2S albumin). Heat and digestion stable. Highly abundant in brazil nut. Associated with systemic reactions.

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Units: KU/L CF: - - -
Bumble Bee (i205), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Bumble Bee (i205), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -
Bupropion	15D	1 mL Serum or Plasma (EDTA). Store and send frozen. If the specimen thaws, it is unsuitable for analysis. Gel separator is acceptable.	Bupropion 100 - 1000 Units: nmol/L CF: - - - Hydroxybupropion 370 - 1900 Units: nmol/L CF:
C-Peptide Stimulation	6D	2 mL (x4) Serum. Plasma (Na-Heparin,Li-Heparin) is acceptable. Draw baseline fasting specimen. Administer 1 mg Glucagon by I.V. Draw additional samples at 5, 10 and 15 minutes. Glucagon is not supplied In-Common Laboratories. For each timed specimen submitted, each tube must be clearly marked with time drawn. Submit all tubes with one test request form. Store and frozen.	Baseline 0.8 - 3.1 Units: ng/mL CF: 5 minutes See Below Units: ng/mL CF: 10 minutes See Below Units: ng/mL CF: 15 minutes A normal response to Glucagon is a 1.5 - 7.2 fold increase in C-Peptide level above base-line. In patients with Diabetes Mellitus a Glucagon stimulated

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			C-Peptide level > 2.0 ng/mL suggests non-insulin dependent Diabetes Mellitus which can often be managed by diet alone while a low peak C-Peptide level (< 0.5 ng/mL) suggests an insulin-dependent Diabetes Mellitus. Units: ng/mL CF:
C-Peptide	5D	0.5 mL Serum. Fasting specimen preferred. Gel-separator tubes are acceptable. Non-fasting specimen may be used to evaluate pancreatic reserve at the discretion of the physician. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. Submit a separate specimen for Insulin if ordered.	C-Peptide Fasting: 298 - 2350 Units: pmol/L CF: ng/mL x 330
C-Reactive Protein	2D	1 mL Serum. This assay has a detection limit of 0.18 mg/L.	C-Reactive Protein Cardiovascular Risk Assessment: Low Risk: Less than 1 Average Risk: 1 - 3 High Risk: Greater than 3 Over 10 mg/L is consistent with acute phase response to inflammation. Units: mg/L CF: mg/dL x 10.0
C-Telopeptide	2D	1 mL Plasma (EDTA). Fasting Plasma (EDTA) specimen recommended. Plasma (Na-heparin) and serum are acceptable but Plasma (EDTA) is recommended.	C-Telopeptide Male >=20y: 90-750 Female >=20y, Pre-menopausal: 50-900 Female Post-menopausal: 210-1100 Units: ng/L CF: - - -
C1 Esterase Inhibitor: Functional	30D	1 mL Plasma (Citrate). Separate and freeze as soon as possible. Store and send frozen. Specify "Functional" on requisition.	C1 Esterase Inhibitor - Funct. Normal Units: Qual. Test CF: - - -
C1 Esterase Inhibitor: Immunological	10D	1 mL Serum. Separate as soon as possible.	C1 Esterase Inhib. - Immun. 0.22 - 0.38

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Units: g/L CF: mg/dL x 0.0100
C1 Function	40D	1 mL Serum. Avoid gel-separator tubes, Allow blood to clot at 37° or room temp for 20-60 minutes. Separate and transfer cell-free serum to clean transfer vial. Freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.	C1 Function 75672 - 190932 Units: Units/mL CF: - - -
C1q Complement Component	40D	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.	C1q Complement Component 83 - 125 Units: µg/mL CF: - - -
C1r Complement Component	40D	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 level Units: CF: C1r Complement Component 61 - 162 Units: % of STD CF: - - -
C1s Complement Component	40D	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 level Units: CF: C1s Complement Component 59 - 297 Units: % of STD CF: - - -
C2 Complement	21D	1 mL Serum. Separate within 1 hour of collection and freeze as soon as possible. Submission of duplicate aliquots is recommended in case repeat analysis is required, avoiding multiple freeze/thaw. If the specimen thaws it is unsuitable for analysis.	C2 Complement 14 - 33 Units: mg/L CF: - - -
C2 Function	40D	1 mL Serum. Plain red-top serum is the only acceptable sample type. Avoid gel-separator tubes. Allow blood to clot at 37° or room temp for 20-60 minutes. Separate and transfer cell-free serum to clean transfer vial. Freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.	C2 Function 15354 - 46242 Units: Units/mL CF: - - -
C3 Complement	3D	1 mL Serum. Separate and freeze as soon as possible. Store and send frozen. Send 1 mL for C3 and C4 Complement.	C3 Complement - Serum 0.90 - 1.80

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Units: g/L CF: mg/dL x 0.01
C4 Binding Protein	21D	1 mL Serum. Store and send frozen. If the specimen thaws it is unsuitable for analysis.	C4 Binding Protein 275 - 604 Units: mg/L CF:
C4 Complement	3D	1 mL Serum. Separate and freeze as soon as possible. Store and send frozen. Send 1 mL for C3 and C4 Complement.	C4 Complement - Serum 0.10 - 0.40 Units: g/L CF: mg/dL x 0.0100
C5 Complement	40D	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.	C5 Complement 55 - 113 Units: µg/mL CF: - - -
C6 Complement	40D	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 28 - 69 Units: µg/mL CF: - - -
C7 Complement	40D	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.	C7 Complement 35.3 - 96.5 Units: µg/mL CF: - - -
C8 Complement	40D	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 49 - 106 Units: µg/mL CF: - - -
C9 Complement	40D	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 33 - 95 Units: µg/mL CF: - - -
CA 125	3D	1 mL Fluid. Indicate source of fluid clearly on the requisition.	CA 125 - Fluid Not available for fluid. Units: U/mL CF: - - -
CA 125	3D	1 mL Serum. Separate from clot as soon as possible.	CA 125 0 - 35 Two or three fold increase over upper limit may be seen during menses.

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			There is no critical value diagnostic of ovarian cancer. High CA125 may occur in many benign and malignant conditions. Units: U/mL CF: - - -
CA 15-3	5D	1 mL Serum or Plasma (EDTA). Store and send frozen. (Analysis by an alternate method - Immunoassay by Roche Elecsys - is also available. See separate listing.)	CA 15-3 (Abbot Architect) Greater than or equal to 10y: Less than or equal to 30 Units: kU/L CF: - - -
CA 15-3	3D	1 mL Serum. Collect in gel-separator tube. Store and send frozen. Requisition must indicate "Roche" for this analytical platform analysis. (Analysis by an alternate method - CMIA by Abbott Architect - is also available. See separate listing.)	CA 15-3 (Roche Elecsys) < 26 Units: kU/L CF:
CA 19-9	5D	1 mL Fluid. Indicate source.	CA 19-9 - Fluid Not available for fluid. Units: kU/L CF: - - -
CA 19-9	3D	1 mL Serum.	CA 19-9 - Serum Less than 35 CA 19-9 is not specific for pancreatic cancer. Results must be interpreted in light of other clinical findings. Units: kU/L CF: - - -
CA 27.29	6D	1 mL Serum. Gel separator tubes are acceptable. Store and send frozen. This is not intended as a screening test.	CA 27.29 < 38 CA 27-29 regardless of value should not be interpreted as absolute evidence of the presence or absence of disease. Units: U/mL CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Cadmium	10D	13 mL Urine (Random). Collect and transfer in metal-free container. Provide date of birth and gender. Indicate "Random".	Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mmol/L CF: - - - Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mg/L CF: - - - Cadmium-U 0.000 - 1.500 Units: µg/L CF: - - - Cadmium-U 0.0 - 13.4 Units: nmol/L CF: - - - Cadmium-U Age and gender related See [Trace Metals Ref. Values] table Units: µmol/mol cr CF: - - - Cadmium-U Age and gender related See [Trace Metals Ref. Values] table Units: µg/g cr CF: - - -
Cadmium	10D	13 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date, 24 hour volume and gender.	Creatinine-U24h Male: 3.5 - 25.0 Female: 2.6 - 20.0 Units: mmol/L CF: - - - Creatinine-U24h Male: 8.6 - 19.4 Female: 6.3 - 13.4 Units: mmol/d CF: - - - Cadmium-U

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			0.000 - 1.500 Units: µg/L CF: - - - Cadmium-U 0.0 - 13.4 Units: nmol/L CF: - - - Cadmium-U24h 0.0 - 2.0 Units: µg/d CF: - - - Cadmium-U24h 0.0 - 17.8 Units: nmol/d CF: - - -
Cadmium	10D	3 mL Erythrocyte. Collect K2-EDTA blood in contaminant-free tube. Separate and transfer erythrocytes to a polypropylene transfer vial. Store and send frozen - See Collection instructions link above.	Cadmium - E Non Smokers: 0.00 - 6.30 Smokers: 0.00 - 9.80 Units: µg/L CF: Cadmium - E Non Smokers: 0.0 - 56.1 Smokers: 0.0 - 87.2 Units: nmol/L CF:
Cadmium	10D	6 mL Whole Blood (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Store and send cold.	Cadmium - WB Non Smokers: 0 - 16y: 0.00 - 0.71 >= 17y: 0.00 - 3.60 Smokers: 0.0 - 5.4 Units: µg/L CF: Cadmium - WB

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Non Smokers: 0 - 16y: 0.0 - 6.3 >= 17y: 0.0 - 32.0 Smokers: 0.0 - 48.1 Units: nmol/L CF:
Cadmium	15D	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck - for long hair only use the first inch or so closest to the scalp. If unable to weigh the hair, submit 1 heaping teaspoon (10-20 mL). Submit in a plastic bag. The test should not be ordered if hair has been bleached, permed or dyed in the last two months. This metal is included in the Toxic (Hair) Panel.	Cadmium - H 0.000 - 0.150 Units: µg/g CF: Cadmium - H 0.00 - 1.34 Units: nmol/g CF:
Cadmium	15D	0.001 g Tissue. Samples for analysis may include paraffin blocks or frozen tissue in saline or formalin. Needle biopsies are also acceptable in formalin. If fixed in formalin, please send an extra tube of formalin. Store and send frozen.	Source Units: CF: Cadmium - Tissue Not Available Units: µg/g CF: Cadmium - Tissue Not Available Units: nmol/g CF:
Cadmium	10D	15 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date and 24-h volume. Avoid mineral supplements for 5 days.	Cadmium - U 0 - 18 Units: nmol/L CF: µg/L x 8.896 Cadmium - U24h 0 - 18 Units: nmol/d CF: µg/d x 8.896
Cadmium	10D	15 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Avoid mineral supplements for 5 days.	Cadmium - U 0 - 18 Units: nmol/L CF: µg/L x 8.896

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Cadmium	10D	2 mL Erythrocyte. Collect K2-EDTA blood in contaminant-free tube. Separate and transfer erythrocytes to a polypropylene transfer vial. Store and send frozen - See Collection Instructions link above.	Cadmium - E 0.0 - 56.1 Units: nmol/L CF: µg/L x 8.896
Cadmium	10D	4 mL Whole Blood (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Do not open tube or separate. Store and send cold.	Cadmium - WB 6-19y: 0.00 - 2.14 >=20y: 0.00 - 9.10 Units: nmol/L CF: µg/L x 8.896
Caffeine	1D	0.5 mL Serum. Plasma is not acceptable. Monitor simultaneously with Theophylline. Draw trough specimen 0-4 h prior to next dose.	Caffeine Therapeutic: 30-100 Critical: >120 Units: µmol/L CF: µg/mL x 5.15
Calcitonin	10D	2 mL Serum. Fasting specimen preferred bu not mandatory. Plasma is not suitable for analysis. Store and send frozen.	Calcitonin Male: < 11 Female: < 7 Units: ng/L CF: pg/mL x 1.00
Calcium: Ionized	1D	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° but do not freeze. Specimen must be tested within 5 d of collection.	Calcium: Ionized 1.15 - 1.35 Units: mmol/L CF: mg/dL x 0.250 Ca: Ionized (pH 7.4 Corrected) 1.15 - 1.35 Units: mmol/L CF: mg/dL x 0.250
Calcium	10D	13 mL Urine (Random). Collect and transfer in metal-free container. Provide date of birth and gender. Indicate "Random". Avoid mineral supplements for 5 days.	Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mmol/L CF: - - - Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mg/L CF: - - - Calcium-U

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			67 - 200 Units: mg/L CF: - - - Calcium-U 1.67 - 5.00 Units: mmol/L CF: - - - Calcium-U Age and gender related See [Trace Metals Ref. Values] table Units: mmol/mol cr CF: - - - Calcium-U Age and gender related See [Trace Metals Ref. Values] table Units: mg/g cr CF: - - -
Calcium	10D	13 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date, 24 hour volume and gender. Avoid mineral supplements for 5 days.	Creatinine-U24h Male: 3.5 - 25.0 Female: 2.6 - 20.0 Units: mmol/L CF: - - - Creatinine-U24h Male: 8.6 - 19.4 Female: 6.3 - 13.4 Units: mmol/d CF: - - - Calcium-U 67 - 200 Units: mg/L CF: - - - Calcium-U 1.67 - 5.00 Units: mmol/L CF: - - - Calcium-U24h 100 - 301 Units: mg/d CF: - - - Calcium-U24h

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			2.5 - 7.5 Units: mmol/d CF: - - -
Calcium	10D	3 mL Erythrocyte. Collect K2-EDTA blood in contaminant-free tube. Separate and transfer erythrocytes to a polypropylene transfer vial. Store and send frozen - See Collection instructions link above.	Calcium - E 13.2 - 25.7 Units: mg/L CF: Calcium - E 0.33 - 0.64 Units: mmol/L CF:
Calcium	15D	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck - for long hair only use the first inch or so closest to the scalp. If unable to weigh the hair, submit 1 heaping teaspoon (10-20 mL). Submit in a plastic bag. The test should not be ordered if hair has been bleached, permed or dyed in the last two months. This metal is included in the Essential (Hair) Panel.	Calcium - H 300 - 1000 Units: µg/g CF: Calcium - H 7.5 - 25.0 Units: µmol/g CF:
Calcium	2D	1 mL Fluid. Indicate source of fluid clearly on requisition.	Calcium - Fluid Not available for fluid. Units: mmol/L CF: mg/dL x 0.250
Calcium	2D	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 - Urine 2.5 - 7.5 Diet dependent Units: mmol/d CF: mg/24h x 0.0250
Calculus Analysis	12D	Calculus. State origin of calculus. Submit specimens in a clean container, without preservative.	I.R. Spectroscopy See Interpretive Report Units: CF:
Calprotectin	10D	10 g Faeces. Send specimen in a screw-capped, plastic container. Do not add preservative. Store and send cold. Provide collection date and time. Refrigerated specimen must be received Mon - Thu within 48 hours of collection.	Calprotectin, fecal 1m - <6m: < 538 6m - <3y: < 214 3y - <4y: < 75 4y - 17y: < 50 >or= 18y: < 50 Units: mg/kg CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Cannabinoids: Screen	2D	10 mL Urine (Random). Collect specimen and transport cold.	Creatinine - Urine Not Available Units: mmol/L CF: Cannabinoid Screen - Urine Not Detected Units: CF:
Cannabinoids: Synthetic	10D	5 mL Urine (Random). This assay detects metabolites of synthetic cannabinoids. The parent compounds are not present in urine.	JWH-018 (Hydroxy) Metabolite Qual. Test Units: CF: JWH-018 (Carboxy) Metabolite Qual. Test Units: CF: JWH-073 (Hydroxy) Metabolite Qual. Test Units: CF: JWH-073 (Carboxy) Metabolite Qual. Test Units: CF: JWH-122 (Hydroxy) Metabolite Qual. Test Units: CF: JWH-122 (Carboxy) Metabolite Qual. Test Units: CF: Other Metabolites Units: CF:
Cannabinoids: Synthetic	10D	Various. This assay detects synthetic cannabinoids including JWH-018, JWH-073 and JWH-122.	JWH-018 Qual. Test Units: CF: JWH-073

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Qual. Test Units: CF: JWH-122 Qual. Test Units: CF: Other Cannabinoids Units: CF:
Canola (Weed) (w203), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Canola Weed (w203), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -
Carbamazepine Epoxide	2D	2 mL Serum. Analysis includes Carbamazepine.	Carbamazepine Therapeutic: 17 - 50 Toxic: Greater than 63 Units: µmol/L CF: mg/L x 4.23 Carbamazepine Epoxide Therapeutic: 5.0 - 12.0 Units: µmol/L CF: - - -
Carbamazepine	1D	0.5 mL Serum. To monitor therapy, draw trough level specimen before the next dose is administered.	Carbamazepine - Serum Therapeutic: 17 - 50 Toxic: Over 85 Units: µmol/L CF: mg/L x 4.23
Carbon Monoxide	1D	4 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	Carbon Monoxide (CO measured as Carboxyhemoglobin) Non-smokers: Less than 0.02

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
		same day analysis. Sample should be tested within 24 h of collection. Carbon Monoxide is measured as Carboxyhemoglobin.	Smokers: Less than 0.09 Toxic: Greater than 0.20 Units: Frac tot Hbg CF: % x 0.0100
Carcinoembryonic Antigen	5D	3 mL Serum. Separate as soon as possible. Plasma samples are not suitable. This test is funded for Ontario patients who meet the criteria listed on the funded-CEA form which must accompany funded CEA requests. A Transfer Fee will be billed for funded CEA requests. Repeat testing is not funded if assay performed within the prior 4 weeks.	Carcinoembryonic Antigen (CEA) 0.0 - 4.0 Units: µg/L CF: ng/mL x 1.00
Carcinoembryonic Antigen	5D	10 mL Fluid. Mark source of fluid clearly on the requisition.	Carcinoembryonic Antigen (CEA) Not Available for fluid. Units: µg/L CF: ng/mL x 1.00
Cardiolipin Antibodies	5D	1 mL Serum. Store at 4°. Submit a fresh specimen that can be tested within 3 days of collection. If this is not possible, store and send frozen.	Cardiolipin Antibodies (IgG) Negative < 15 Indeterminate 15 - 20 Low Positive 21 - 40 Positive > 40 Units: GPL CF: Arbitrary Units Cardiolipin Antibodies (IgM) Negative < 14 Indeterminate 14 - 20 Low Positive 21 - 40 Positive > 40 Units: MPL CF: Arbitrary Units β2 Glycoprotein 1 IgG Negative < 7 Indeterminate 7 - 20 Positive > 20 Units: SGU CF:
Carnitine	15D	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.	Creatinine - Urine Not available Units: µmol/L CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Total Carnitine - Urine Not available Units: mmol/mol Cr. CF: - - - Free Carnitine - Urine Not available Units: mmol/mol Cr. CF: - - -
Carnitine	15D	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: Free < 16d: 12.0 - 60.0 >=16d: 26.0 - 60.0 Units: µmol/L CF: - - - Carnitine: Total < 16d: 23.0 - 84.0 >=16d: 32.0 - 84.0 Units: µmol/L CF: - - -
Carp rCyp c 1 (f355), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Carp rCyp c 1 (f355), IgE < 0.35 Interpretive Comment: A major fish protein, parvalbumin. Identified as a major cross-reactive fish allergen. Heat and digestion labile. Units: KU/L CF: - - -
Cashew Ana o 3 (f443), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Cashew Ana o 3 (f443), IgE < 0.35 Interpretive Comment: Storage protein (2S albumin). Heat and digestion stable. Highly abundant in cashew nut. Associated with systemic reactions. Units: KU/L CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Catecholamines	10D	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.	Epinephrine: Total - Urine Adult: < 60 Units: nmol/d CF: µg/d x 5.46 Epinephrine/Creatinine Ratio Adult: 0.0 - 7.0 Units: nmol/mmol Cr CF: µg/mg Cr x 617 Norepinephrine: Total - Urine Adult: < 600 Units: nmol/d CF: µg/d x 5.91 Norepinephrine/Creat. Ratio Adult: < 70 Units: nmol/mmol Cr CF: µg/mg Cr x 669
Catecholamines	10D	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 methyldopa, alpha-methyl-para-tyrosine, isoproteronal, 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.	Norepinephrine - Plasma Normotensive Adult, Supine: 0.8 - 3.4 Units: nmol/L CF: pg/mL x 0.00591 Epinephrine - Plasma Normotensive Adult, Supine: < 0.8 Units: nmol/L CF: pg/mL x 0.00546
Celiac Profile (3 antibodies)	5D	1 mL Serum. Analysis includes Deamidated Gliadin Antibodies (IgA & IgG) and Tissue Transglutaminase IgA Antibodies.	Deamidated Gliadin Ab IgA <20 Negative 20 - 30 Weakly Positive >30 Positive False negative results may occur in individuals who are IgA deficient. Units: CU CF: - - - Deamidated Gliadin Ab IgG <20 Negative 20 - 30 Weakly Positive >30 Positive

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Units: CU CF: - - - Tissue Transglut. Ab. IgA <20 Negative 20 - 30 Weakly Positive >30 Positive False negative results may occur in individuals who are IgA deficient. Units: CU CF: - - -
Celiac Profile (4 antibodies)	5D	1 mL Serum. Analysis includes Deamidated Gliadin Antibodies (IgA & IgG) and Tissue Transglutaminase ANtibodies (IgA & IgG).	Deamidated Gliadin Ab IgA <20 Negative 20 - 30 Weakly Positive >30 Positive False negative results may occur in individuals who are IgA deficient. Units: CU CF: - - - Deamidated Gliadin Ab IgG <20 Negative 20 - 30 Weakly Positive >30 Positive Units: CU CF: - - - Tissue Transglutaminase IgA <20 Negative 20 - 30 Weakly Positive >30 Positive False negative results may occur in individuals who are IgA deficient. Units: CU CF: - - - Tissue Transglutaminase IgG <20 Negative 20 - 30 Weakly Positive >30 Positive Units: CU CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Ceruloplasmin	3D	1 mL Serum.	Ceruloplasmin <1y: 0.05 - 0.26 1 - 9y: 0.26 - 0.47 9 - 13y: 0.24 - 0.47 13 - 18y: 0.15 - 0.50 >18y: 0.20 - 0.60 Units: g/L CF: mg/dL x 0.01
Chlordiazepoxide	7D	2 mL Serum. Avoid gel-separator tubes. Collect trough specimen prior to next dose.Store and send frozen. Analysis includes metabolites Norchlordiazepoxide and Nordiazepam (Desmethyldiazepam).	Chlordiazepoxide 100 - 3000 Units: ng/mL CF: µmol/L x 299.7 Chlordiazepoxide 0.33 - 10.0 Units: µmol/L CF: ng/mL x 0.0033 Norchlordiazepoxide 100 - 3000 Units: ng/mL CF: µmol/L x 285.7 Norchlordiazepoxide 0.35 - 10.5 Units: µmol/L CF: ng/mL x 0.0035 Nordiazepam 100 - 1500 Units: ng/mL CF: µmol/L x 270.7 Nordiazepam 0.37 - 5.54 Units: µmol/L CF: ng/mL x 0.0037
Chloride	2D	1 mL Fluid / Faeces. Indicate source of fluid clearly on requisition. Faeces: Submit 5 mL naturally fluid faeces. Formed faeces is not acceptable.	Chloride - Fluid Not available. Units: mmol/L CF: mEq/L x 1.00
Chloride	3D	1 mL Urine (24h). State 24 h collection volume and date.	Chloride - Urine 110 - 250 Diet dependent

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Units: mmol/d CF: mEq/d x 1.00
Chloride	3D	1 mL Urine (Random).	Chloride - Urine Not Available Diet dependent Units: mmol/L CF: - - -
Chlorpromazine	15D	1 mL Serum or Plasma (Hep). Avoid gel-separator tubes. Store and send frozen.	Chlorpromazine 30 - 300 Units: ng/mL CF: nmol/L x 0.318 Chlorpromazine 94.2 - 942.0 Units: nmol/L CF: ng/mL x 3.14
Cholesterol	1D	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.	Cholesterol 2-17 y: 3.2 - 4.4 Elevated: > 4.80 18-29 y: 3.2 - 4.6 Elevated: > 5.70 30-49 y: 3.8 - 5.2 Elevated: > 6.20 50-65 y: 4.2 - 5.2 Elevated >6.20 Over 65 y: 4.2 - 6.2 Elevated > 6.20 Units: mmol/L CF: mg/dL x 0.0259
Cholinesterase: Phenotype	10D	2 mL Serum. Plasma not acceptable for analysis. Store and send frozen. If patient had surgery, collect specimen at least 24 h post-surgery.	Cholinesterase (Total) 620 - 1370 Units: U/L CF: - - - Cholinesterase Phenotype None Units: CF:
Cholinesterase: Total Activity	10D	2 mL Serum. Store and send frozen. Cholinesterase Phenotype will be analyzed (and billed) unless "Total Only" is specified.	Cholinesterase: Total Activity 620 - 1370 Poisoning from insecticides is best demonstrated by a fall in Cholinesterase from pre-exposure baseline levels. Units: U/L CF: IU/L x 1.00

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Chorionic Gonadotrophin: Tumour Marker	5D	1 mL Serum. Store and send frozen. This assay measures intact β-hCG plus the free β-Subunit. A single frozen 2 mL aliquot is sufficient when ordering β-hCG and AFP Tumour Markers (see separate listing for AFP).	hCG - Tumour Marker M: Less than 4 F, Premenopausal non-pregnant: Less than 4 F, postmenopausal: Less than 7 Units: IU/L CF: mIU/mL x 100
Chorionic Gonadotrophin	1D	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.	hCG Quantitation Men & Pre-menopausal Non-pregnant women: <3 Pregnant after 4 weeks gestation: >9 Post-menopausal women: <8 Units: IU/L CF: - - -
Chromium	10D	13 mL Urine (Random). Collect and transfer in metal-free container. Provide date of birth and gender. Indicate "Random". Avoid mineral supplements for 5 days.	Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mmol/L CF: - - - Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mg/L CF: - - - Chromoim-U 0.09 - 0.52 Units: µg/L CF: - - - Chromium-U 1.7 - 10.0 Units: nmol/L CF: - - - Chromium-U Age and gender related See [Trace Metals Ref. Values] table

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Units: µmol/mol cr CF: - - - Chromium-U Age and gender related See [Trace Metals Ref. Values] table Units: µg/g cr CF: - - -
Chromium	10D	13 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date, 24 hour volume and gender. Avoid mineral supplements for 5 days.	Creatinine-U24h Male: 3.5 - 25.0 Female: 2.6 - 20.0 Units: mmol/L CF: - - - Creatinine-U24h Male: 8.6 - 19.4 Female: 6.3 - 13.4 Units: mmol/d CF: - - - Chromium-U 0.09 - 0.52 Units: µg/L CF: - - - Chromium-U 1.7 - 10.0 Units: nmol/L CF: - - - Chromium-U24h 0.20 - 0.80 Units: µg/d CF: - - - Chromium-U24h 3.8 - 15.4 Units: nmol/d CF: - - -
Chromium	10D	3 mL Serum. Collect serum in contaminant-free tube. Separate as soon as possible and transfer serum to polypropylene vial. Results may be falsely elevated if the specimen is not separated within 30 minutes and/or hemolysis is present. Plasma reference ranges are different - see separate listing.	Chromium - S 0.10 - 0.20 Units: µg/L CF: Chromium - S 1.9 - 3.8 Units: nmol/L CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Chromium	10D	3 mL Plasma (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Separate as soon as possible and transfer plasma to polypropylene vial. Results may be falsely elevated if the specimen is not separated within 30 minutes and/or hemolysis is present. Serum reference ranges are different - see separate listing.	Chromium - P 0.13 - 0.31 Units: µg/L CF: Chromium - P 2.5 - 6.0 Units: nmol/L CF:
Chromium	10D	3 mL Erythrocyte. Collect K2-EDTA blood in contaminant-free tube. Separate and transfer erythrocytes to a polypropylene transfer vial. Store and send frozen - See Collection instructions link above.	Chromium - E 0.04 - 0.64 Units: µg/L CF: Chromium - E 0.8 - 12.3 Units: nmol/L CF:
Chromium	10D	6 mL Whole Blood (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Store and send cold.	Chromium - WB 0.12 - 0.40 Units: µg/L CF: Chromium - WB 2.3 - 7.7 Units: nmol/L CF:
Chromium	15D	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck - for long hair only use the first inch or so closest to the scalp. If unable to weigh the hair, submit 1 heaping teaspoon (10-20 mL). Submit in a plastic bag. The test should not be ordered if hair has been bleached, permed or dyed in the last two months. This metal is included in the Essential (Hair) Panel.	Chromium - H 0.050 - 0.350 Units: µg/g CF: Chromium - H 1.0 - 6.7 Units: nmol/g CF:
Chromium	15D	0.001 g Tissue. Samples for analysis may include paraffin blocks or frozen tissue in saline or formalin. Needle biopsies are also acceptable in formalin. If fixed in formalin, please send an extra tube of formalin. Store and send frozen.	Source Units: CF: Chromium - Tissue Not Available Units: µg/g CF: Chromium - Tissue

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Not Available Units: nmol/g CF:
Chromium	10D	15 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date and 24-h volume. Avoid mineral supplements for 5 days.	Chromium - U 1.7 - 10.0 Units: nmol/L CF: µg/L x 19.2 Chromium - U24h 3.8 - 15.4 Units: nmol/d CF: µg/d x 19.2
Chromium	10D	15 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Avoid mineral supplements for 5 days.	Chromium - U 1.7 - 10.0 Units: nmol/L CF: µg/L x 19.2
Chromium	10D	2 mL Plasma (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Avoid gel-separator tube. Separate as soon as possible and transfer plasma to polypropylene vial. Store and send cold.	Chromium - P 2.5 - 6.0 Units: nmol/L CF: µg/L x 19.2
Chromium	10D	2 mL Serum. Collect serum in contaminant-free tube with clot activator. Avoid gel-separator tube. Separate as soon as possible and transfer serum to polypropylene vial. Store and send cold. Plasma reference ranges are different.	Chromium - S 1.9 - 3.8 Units: nmol/L CF: ng/L x 0.0192
Chromium	10D	2 mL Erythrocyte. Collect K2-EDTA blood in contaminant-free tube. Separate and transfer erythrocytes to a polypropylene transfer vial. Store and send frozen - See Collection Instructions link above.	Chromium - E 0.8 - 12.3 Units: nmol/L CF: µg/L x 19.2
Chromium	10D	4 mL Whole Blood (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Do not open tube or separate. Store and send cold.	Chromium - WB 2.3 - 7.7 Units: nmol/L CF: µg/L x 19.2
Chromium	15D	1 mL Fluid. Indicate source. Transfer in metal-free vial.	Chromium - Fluid Not available for fluid. Units: µg/L CF: Chromium - Fluid Not available for fluid.

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Units: nmol/L CF:
Chromogranin A	10D	2 mL Plasma (EDTA). Abstain from proton pump inhibitor medication for two weeks prior to collection. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. Samples with cloudiness, hemolysis, hyperlipidemia or containing fibrin may give inaccurate results.	Chromogranin A <= 110 Chromogranin A results may be elevated in patients treated with proton pump inhibitors. Units: ng/mL CF: - - -
Citric Acid	10D	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).	Creatinine (Urine 24h) 8.8 - 22.0 Female: 4.5 - 16.0 Units: mmol/d CF: - - - Citric Acid Greater than 1.6 Units: mmol/d CF: mg/d x 0.00521
Citric Acid	10D	5 mL Urine (Random). Collect random specimen and acidify with 6N HCl within 24h of collection to final pH of 1-3. Avoid multiple freeze-thaw cycles.	Citric Acid Not Available Units: mmol/L CF:
Clobazam	7D	1 mL Serum. Avoid gel-separator tubes. Draw trough specimen prior to next dose. Store and send frozen. Assay includes Desmethylclobazam.	Clobazam Therapeutic: 0.15 - 1.0 Units: µmol/L CF: - - - Desmethylclobazam Therapeutic: 2.8 - 14.0 Units: µmol/L CF: - - -
Clobazam	7D	10 mL Urine (Random). Assay includes Desmethylclobazam.	Clobazam - Urine Not detected Units: Qual. test CF: - - - Desmethylclobazam Not detected Units: Qual. test CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Clomipramine	7D	3 mL Serum or Plasma (EDTA). Avoid gel-separator tubes. Submit trough specimen (i.e. collected within 1 hour prior to next dose or at least 12 hours after last dose. Separate as soon as possible. Assay includes Desmethylclomipramine.	Clomipramine (C) No therapeutic range for Clomipramine alone. Units: µmol/L CF: mg/L x 3.18 Desmethylclomipramine (D) No therapeutic range for Desmethylclomipramine alone. Units: µmol/L CF: mg/L x 3.18 Combined (C+D) C + D Therapeutic: 0.58 - 1.50 C + D Toxic: Greater than 2.0 Units: µmol/L CF: mg/L x 3.18
Clonazepam	7D	10 mL Urine (Random). Do not confuse this drug with Clobazam.	Clonazepam - Urine Not detected Units: Qual. test CF: - - -
Clonazepam	7D	3 mL Serum. To monitor therapy, draw trough specimen prior to next dose. Store and send frozen. Do not confuse with Clobazam.	Clonazepam - Serum Therapeutic: 20 - 180 Toxic: Greater than 230 Units: nmol/L CF: µg/L x 3.17
Clostridium difficile Toxin	2D	5-20 mL Faeces (Liquid or very soft). Collect liquid or very soft specimen and transport cold within same day of collection. The container must not contain any preservative. Repeat testing will not be done within 7 days.	C difficile Toxin Gene NEGATIVE Units: CF:
Clozapine	7D	1 mL Plasma (EDTA). Avoid gel-separator tubes. Serum and Plasma (LiHeparin) are acceptable but Plasma (EDTA) is preferred. Store and send frozen. Assay includes Clozapine and Norclozapine.	Clozapine Minimum effective concentration: 1070 Significant CNS toxicity e.g. generalized tonic-clonic seizure may be associated with concentrations above 3100 nmol/L. Units: nmol/L CF: µg/L x 3.06 Norclozapine Therapeutic ranges

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			not available. Units: nmol/L CF: µg/L x 3.19
Coagulation Factor II: Biological	4D	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 0 - 3 m: 0.30 - 1.00 >3 m: 0.70 - 1.50 Units: U/mL CF: % x 0.0100
Coagulation Factor IX	4D	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 0 - 1 y: 0.15 - 1.00 >1 y: 0.60 - 1.50 Units: U/mL CF: % x 0.0100
Coagulation Factor VIII Inhibitor: Human	1D	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 VIII is low (billed separately).	Factor VIII Inhibitor: Human None detected Units: Bethesda Units CF: - - - Coagulation Factor VIII 0.50 - 1.50 Units: U/mL CF: % x 0.0100
Coagulation Factor VIII	4D	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).	Coagulation Factor VIII 0.50 - 1.50 Units: U/mL CF: % x 0.0100
Coagulation Factor VII	4D	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 0 - 3 m: 0.30 - 1.30 >3 m: 0.60 - 1.50 Units: U/mL CF: % x 0.0100
Coagulation Factor V	4D	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 0 - 3 m: 0.30 - 1.20 >3 m: 0.60 - 1.50 Units: U/mL CF: % x 0.0100

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Coagulation Factor XIII: Screen	10D	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.	Coag. Factor XIII: Screen Normal Units: Qual. Test CF: - - -
Coagulation Factor XII	4D	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 0 - 3 m: 0.10 - 1.00 >3 m: 0.50 - 1.50 Units: U/mL CF: % x 0.0100
Coagulation Factor XI	4D	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 0 - 3 m: 0.10 - 1.00 >3 m: 0.50 - 1.50 Units: U/mL CF: % x 0.0100
Coagulation Factor X	5D	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 X 0 - 6 m: 0.10 - 1.00 >6 m: 0.60 - 1.50 Units: U/mL CF: % x 0.0100
Cobalt	10D	13 mL Urine (Random). Collect and transfer in metal-free container. Provide date of birth and gender. Indicate "Random". Avoid mineral supplements for 5 days.	Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mmol/L CF: - - - Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mg/L CF: - - - Cobalt-U 0.07 - 0.83 Units: µg/L CF: - - - Cobalt-U 1.2 - 14.1 Units: nmol/L CF: - - - Cobalt-U

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Age and gender related See [Trace Metals Ref. Values] table Units: µmol/mol cr CF: - - - Cobalt-U Age and gender related See [Trace Metals Ref. Values] table Units: µg/g cr CF: - - -
Cobalt	10D	13 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date, 24 hour volume and gender. Avoid mineral supplements for 5 days.	Creatinine-U24h Male: 3.5 - 25.0 Female: 2.6 - 20.0 Units: mmol/L CF: - - - Creatinine-U24h Male: 8.6 - 19.4 Female: 6.3 - 13.4 Units: mmol/d CF: - - - Cobalt-U 0.07 - 0.83 Units: µg/L CF: - - - Cobalt-U 1.2 - 14.1 Units: nmol/L CF: - - - Cobalt-U24h 0.10 - 1.25 Units: µg/d CF: - - - Cobalt-U24h 1.7 - 21.2 Units: nmol/d CF: - - -
Cobalt	10D	3 mL Plasma (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Separate as soon as possible and transfer plasma to polypropylene vial.	Cobalt - P 0.14 - 0.49 Units: µg/L CF: Cobalt - P

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			2.4 - 8.3 Units: nmol/L CF:
Cobalt	10D	3 mL Erythrocyte. Collect K2-EDTA blood in contaminant-free tube. Separate and transfer erythrocytes to a polypropylene transfer vial. Store and send frozen - See Collection instructions link above.	Cobalt - E 0.02 - 0.29 Units: µg/L CF: Cobalt - E 0.3 - 4.9 Units: nmol/L CF:
Cobalt	10D	6 mL Whole Blood (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Store and send cold.	Cobalt - WB 0.11 - 0.39 Units: µg/L CF: Cobalt - WB 1.9 - 6.6 Units: nmol/L CF:
Cobalt	15D	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck - for long hair only use the first inch or so closest to the scalp. If unable to weigh the hair, submit 1 heaping teaspoon (10-20 mL). Submit in a plastic bag. The test should not be ordered if hair has been bleached, permed or dyed in the last two months. This metal is included in the Essential (Hair) Panel.	Cobalt - H 0.002 - 0.050 Units: µg/g CF: Cobalt - H 0.03 - 0.84 Units: nmol/g CF:
Cobalt	15D	0.001 g Tissue. Samples for analysis may include paraffin blocks or frozen tissue in saline or formalin. Needle biopsies are also acceptable in formalin. If fixed in formalin, please send an extra tube of formalin. Store and send frozen.	Source Units: CF: Cobalt - Tissue Not Available Units: µg/g CF: Cobalt - Tissue Not Available Units: nmol/g CF:
Cobalt	15D	0.001 g Liver. Samples for analysis may include paraffin blocks or frozen tissue in saline or formalin. Needle biopsies are also acceptable in	Cobalt - Liver 0.005 - 0.045

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
		formalin. If fixed in formalin, please send an extra tube of formalin. Store and send frozen.	Units: µg/g CF: Cobalt - Liver 0.08 - 0.76 Units: nmol/g CF:
Cobalt	10D	15 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date and 24-h volume. Avoid mineral supplements for 5 days.	Cobalt - U 0.17 - 34.0 Units: nmol/L CF: µg/L x 16.97 Cobalt - U24h 0.17 - 34.0 Units: nmol/d CF: µg/d x 16.97
Cobalt	10D	15 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Avoid mineral supplements for 5 days.	Cobalt - U 0.17 - 34.0 Units: nmol/L CF: µg/L x 16.97
Cobalt	10D	2 mL Plasma (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Avoid gel-separator tube. Separate as soon as possible and transfer plasma to polypropylene vial. Store and send cold.	Cobalt - P 5.1 - 17.3 Units: nmol/L CF: µg/L x 16.97
Cobalt	10D	2 mL Erythrocyte. Collect K2-EDTA blood in contaminant-free tube. Separate and transfer erythrocytes to a polypropylene transfer vial. Store and send frozen - See Collection Instructions link above.	Cobalt - E 0.3 - 4.9 Units: nmol/L CF: µg/L x 16.97
Cobalt	10D	4 mL Whole Blood (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Do not open tube or separate. Store and send cold.	Cobalt - WB 0.68 - 10.9 Units: nmol/L CF: µg/L x 16.97
Coenzyme Q10	7D	0.5 mL Plasma (Na or Li Heparin). Collect a fasting (8h) specimen. Immediately place on wet ice. Maintain on wet ice and process within 3 hours of draw. Separate plasma from cells and immediately freeze. Store and send frozen. Due to limited stability specimen must be received at ICL Mon - Thu within 48 hours of collection. If the specimen thaws it is unsuitable for analysis.	Coenzyme Q10 Reduced < 18y: 320 - 1376 >= 18y: 415 - 1480 Units: µg/L CF: Coenzyme Q10 Total < 18y: 320 - 1558 >= 18y: 433 - 1532 Units: µg/L CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Coenzyme Q10 % Reduced < 18y: 93 - 100 >= 18y: 92 - 98 Units: % CF: Interpretation Units: CF:
Cold Agglutinins	5D	4 mL Serum. Allow to clot at 37° and separate immediately. Do not use serum separator tubes (SST). Clotting at any other temperature invalidates results. Store and send frozen.	Cold Agglutinin Screen Negative at 4°, 15°, 22° and 37°. (Sample may also be screened at 30°, 34° and 40°.) Units: Qual. test CF: - - - Cold Agglutinin Semi-Quant. Not detected Units: Titre CF: - - - Antibody Indentification Not detected Units: Qual. test CF: - - -
Complement: Total	5D	2 mL Serum. Allow filled tube to clot at 22-37° 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.	Complement: Total - Serum 20 - 55 Units: CH50 Units/mL CF: - - -
Conalbumin Egg nGal d3 (f323), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Conalbumin Egg nGal d3, IgE < 0.35 Interpretive Comment: Adds information on the complete egg sensitization profile. Risk for clinical reaction to raw or

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			slightly heated egg. Units: KU/L CF: - - -
Copper	5D	1 mL Fluid. Indicate fluid source on requisition. Transfer in metal-free container.	Copper - Fluid Not available for fluid. Units: µg/L CF: Copper - Fluid Not available for fluid. Units: µmol/L CF:
Copper	10D	13 mL Urine (Random). Collect and transfer in metal-free container. Provide date of birth and gender. Indicate "Random". Avoid mineral supplements for 5 days.	Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mmol/L CF: - - - Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mg/L CF: - - - Copper-U 2.3 - 12.0 Units: µg/L CF: - - - Copper-U 0.04 - 0.19 Units: µmol/L CF: - - - Copper-U Age and gender related See [Trace Metals Ref. Values] table Units: µmol/mol cr CF: - - - Copper-U Age and gender related See [Trace Metals Ref. Values] table Units: µg/g cr CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Copper	10D	13 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date, 24 hour volume and gender. Avoid mineral supplements for 5 days.	Creatinine-U24h Male: 3.5 - 25.0 Female: 2.6 - 20.0 Units: mmol/L CF: - - - Creatinine-U24h Male: 8.6 - 19.4 Female: 6.3 - 13.4 Units: mmol/d CF: - - - Copper-U 2.3 - 12.0 Units: µg/L CF: - - - Copper-U 0.04 - 0.19 Units: µmol/L CF: - - - Copper-U24h 3.8 - 17.8 Units: µg/d CF: - - - Copper-U24h 0.06 - 0.28 Units: µmol/d CF: - - -
Copper	10D	3 mL Plasma (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Separate as soon as possible and transfer plasma to polypropylene vial.	Copper - P 0 - 3m: 89 - 457 4 - 6m: 248 - 1099 7 - 12m: 502 - 1302 1 - 5y: 801 - 1499 6 - 9y: 839 - 1360 Male: 10 - 13y: 800 - 1207 Female: 10 - 13y: 822 - 1201 Male: >= 14y: 711 - 1310 Female: >= 14y: 860 - 2317 Units: µg/L CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Copper - P 0 - 3m: 1.4 - 7.2 4 - 6m: 3.9 - 17.3 7 - 12m: 7.9 - 20.5 1 - 5y: 12.6 - 23.6 6 - 9y: 13.2 - 21.4 Male: 10 - 13y: 12.6 - 19.0 Female: 10 - 13y: 12.9 - 18.9 Male: >= 14y: 11.2 - 20.6 Female: >= 14y: 13.5 - 36.5 Units: µmol/L CF:
Copper	10D	3 mL Erythrocyte. Collect K2-EDTA blood in contaminant-free tube. Separate and transfer erythrocytes to a polypropylene transfer vial. Store and send frozen - See Collection instructions link above.	Copper - E 0 - 12y: 654 - 1114 >= 13y: 616 - 929 Units: µg/L CF: Copper - E 0 - 12y: 10.3 - 17.5 >= 13y: 9.7 - 14.6 Units: µmol/L CF:
Copper	10D	6 mL Whole Blood (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Store and send cold.	Copper - WB Male: 683 - 1036 Female: 752 - 1565 Units: µg/L CF: Copper - WB Male: 10.8 - 16.3 Female: 11.8 - 24.6 Units: µmol/L CF:
Copper	15D	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck - for long hair only use the first inch or so closest to the scalp. If unable to weigh the hair, submit 1 heaping teaspoon (10-20 mL). Submit in a plastic bag. The test should not be ordered if hair has been	Copper - H 10.0 - 28.0 Units: µg/g CF: Copper - H

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
		bleached, permed or dyed in the last two months. This metal is included in the Essential (Hair) Panel.	0.16 - 0.44 Units: µmol/g CF:
Copper	15D	0.001 g Tissue. Samples for analysis may include paraffin blocks or frozen tissue in saline or formalin. Needle biopsies are also acceptable in formalin. If fixed in formalin, please send an extra tube of formalin. Store and send frozen.	Source Units: CF: Copper - Tissue Not Available Units: µg/g CF: Copper - Tissue Not Available Units: µmol/g CF:
Copper	15D	0.001 g Liver. Samples for analysis may include paraffin blocks or frozen tissue in saline or formalin. Needle biopsies are also acceptable in formalin. If fixed in formalin, please send an extra tube of formalin. Store and send frozen.	Copper - Liver 10.0 - 35.0 Units: µg/g CF: Copper - Liver 0.16 - 0.55 Units: µmol/g CF:
Copper	10D	15 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date and 24-h volume. Avoid mineral supplements for 5 days.	Copper - U 0.04 - 0.19 Units: µmol/L CF: µg/dL x 0.157 Copper - U24h 0.06 - 0.28 Units: µmol/d CF: µg/d x 0.0157
Copper	10D	15 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Avoid mineral supplements for 5 days.	Copper - U 0.04 - 0.19 Units: µmol/L CF: µg/dL x 0.157
Copper	10D	2 mL Plasma (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Avoid gel-separator tube. Separate as soon as possible and transfer plasma to polypropylene vial. Store and send cold.	Copper - P 0-3m: 1.4 - 7.2 4-6m: 3.9 - 17.3 7-12m: 7.9 - 20.5 1-5y: 12.6 - 23.6

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			6-9y: 13.2 - 21.4 Male, 10-13y: 12.6 - 19.0 Female, 10-13y: 12.9 - 18.9 Male, >=14y: 11.2 - 20.6 Female, >=14y: 13.5 - 36.5 Units: µmol/L CF: µg/dL x 0.157
Copper	10D	2 mL Erythrocyte. Collect K2-EDTA blood in contaminant-free tube. Separate and transfer erythrocytes to a polypropylene transfer vial. Store and send frozen - See Collection Instructions link above.	Copper - E 0-12y: 10.3 - 17.5 >=13y: 9.7 - 14.6 Units: µmol/L CF: µg/dL x 0.157
Copper	10D	4 mL Whole Blood (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Do not open tube or separate. Store and send cold.	Copper - WB Male: 10.8 - 16.3 Female: 11.8 - 24.6 Units: µmol/L CF: µg/dL x 0.157
Corticosteroid Binding Globulin	10D	0.5 mL Serum. Separate within 1 hour. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.	CBG Adult: 1.7 - 3.1 Pediatric ranges not established. Units: mg/dL CF:
Cortisol	15D	1.0 mL Saliva. Collect saliva using ICL saliva collector and instructions. Contact ICL Client Care at 416-422-300 ext. 300 or info@ICLabs.ca. 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 cold or frozen.	Cortisol (Saliva) 08:00 - 10:00 h: 1.4 - 12.0 15:00 - 17:00 h: 0.5 - 3.5 22:00 - 24:00 h: <1.9 Units: nmol/L CF: ng/mL x 2.76
Cortisol	10D	5 mL Urine (24h). State 24 h volume and collection date. Do not add any preservative.	Cortisol - Urine 10 - 160 Units: nmol/d CF: µg/d x 2.76
Cortisol	3D	1 mL Serum or Plasma (Heparin). Gel-separator tubes are acceptable. Indicate time of collection.	Cortisol 0800 h: 101-536 1600 h: half the 0800 h level

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Units: nmol/L CF: ug/dL x 27.59
Cortisol	10D	5 mL Urine (Random). Do not add preservative.	Cortisol - Random Urine Not available for random urine Units: nmol/L CF:
Cottonwood (t14), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Cottonwood (t14), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -
Creatine Kinase: CK-MB Isoenzyme	3D	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.	Creatine Kinase: Total M: 5 - 160 F: 5 - 130 Units: U/L CF: - - - CK-MB Mass <5 Units: µg/L CF: - - - CK-MB Relative Index <0.04 Units: CF:
Creatine Kinase	1D	1 mL Serum or Plasma (Hep. or EDTA).	Creatine Kinase Male: 0 - 240 Female: 0 - 190 Higher values may be found in apparently healthy active individuals. Units: U/L CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Creatinine Clearance	5D	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. Analysis and calculation requires both specimen types.	Creatinine, Serum 0d: 37 - 93 15d: 27 - 47 1y: 34 - 49 4y: 39 - 57 7y: 46 - 61 12y: 50 - 71 15y F:52-76, M:57-92 17y F:53-78, M:61-97 19y F:50-98, M:64-111 Units: µmol/L CF: mg/dL x 88.4 Urine Creatinine Not Available Units: mmol/L CF: 24h Urine Creatinine M: 9.0 - 18.0 F: 7.0 - 16.0 Units: mmol/d CF: g/24h x 8.84 Creat. Clear Uncorrected Not Available Units: mL/s CF: Creat. Clear Corrected Male & Female: 1.24 - 2.08 Corrected for body surface (to 1.73 m*2) Units: mL/s/m2 CF: mL/min x 0.017
Creatinine	2D	5 mL Urine (24h). Store and send cold.	Creatinine Male: 9.0 - 17.0 Female: 7.0 - 15.0 Units: mmol/d CF: Creatinine

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Not Available Units: mmol/L CF:
Creatinine	2D	1 mL Fluid. Indicate source of fluid clearly on the requisition.	Creatinine - Fluid Not available for fluid Units: µmol/L CF: mg/dL x 88.4
Creatinine	1D	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 Male: 52 - 112 Female: 42 - 102 Units: umol/L CF: - - - Estimated GFR Male & Female: Greater than 60 Units: mL/min/1.73 m2 CF: - - -
Cryofibrinogen	10D	6 mL Serum & Plasma (EDTA). Collect and separate serum and plasma at 37°. Submit 3 mL serum and 3 mL plasma stored and shipped cold (4 - 8°).	Cryofibrinogen Negative Units: Qual. test CF: - - -
Cryoglobulins	10D	2 mL Serum. Avoid gel-separator tubes. Collect in tube pre-warmed to 37°. Allow specimen to clot at 37° prior to separation and centrifuge at 37° if possible. Serum must never be refrigerated or frozen. Store and send at ambient temperature (20-25°). Cryoglobulin identification and estimation by IFE will only be performed (and billed) when preliminary Screen is positive and the cryoglobulin has not been previously identified.	Cryoglobulin Screen Negative Units: Qual. Test CF: - - - Cryoglobulin (IFE) Refer to Interpretive Report Units: Text CF: Cryoglobulin Quantitation Units: g/L CF:
Cyanide	25D	4 mL Whole blood (EDTA).	Cyanide 0 - 5.0 Units: µmol/L CF: mg/L x 38.4
Cyclic Citrullinated Peptide Antibodies	10D	1 mL Serum.	Anti-CCP Negative: <17.0 Positive: >=17.0 Units: U/mL CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Cyclobenzaprine	2D	10 mL Urine (Random).	Cyclobenzaprine Not detected Units: Qual. test CF: - - -
Cyclosporine	2D	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 will be billed.	Cyclosporine Interpret results using clinical information and treatment protocols. Units: µg/L CF:
Cystatin C	7D	1 mL Serum. Separate and freeze. Store and send frozen. If the specimen thaws it is unsuitable for analysis.	Cystatin C 0.27 - 1.20 Units: mg/L CF: mg/dL x 10 CYSCeGFR > 90 CYSCeGFR=Glomerular Filtration Rate estimated from measured Cystatin C) NOTE: Accuracy of eGFR formula has not been validated for eGFR >90 mL/min/1.73m2 Units: mL/min CF: - - -
Cystinuria Monitoring	15D	5 mL Urine (Random). Store and send frozen. This assay is provided to monitor diagnosed Cystinuric patients. For diagnosis and classification of Cystinuria order the full panel of urine amino acids instead - refer to separate listing for Amino Acids: Quantitation, urine.	Cystine < 1200 Increased risk of stone formation: >1200 Units: µmol/L CF: - - -
Cytomegalovirus Antibodies (IgG)	2D	1 mL Serum or Plasma (Heparin). Plasma (Heparin) is acceptable only for dialysis patients. Store and send cold. This test is used to investigate CMV immunity status.	CMV Antibodies (IgG) Non-Reactive Units: Qual. Test CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Cytomegalovirus Antibodies (IgM)	2D	1 mL Serum. Plasma (Heparin) is acceptable only for dialysis patients. Store and send cold. This test is used to investigate current recent or reactivated CMV infection.	CMV Antibodies (IgM) Non-Reactive Units: Qual. Test CF:
Cytomegalovirus Blood	3D	1 mL Separated plasma (EDTA). For transplant patients only. Collect specimen, separate plasma and freeze. Ship on dry ice.	Cytomegalovirus DNA NEGATIVE Units: IU/mL CF:
Cytomegalovirus Non Blood	3D	1 mL Sterile fluid. Collect specimen in a sterile container. Maintain and ship at 2-8 °. Indicate source of fluid.	Cytomegalovirus DNA NEGATIVE Units: CF:
D-Dimer	1D	1 mL Plasma (Citrate). Separate and freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.	D-Dimer Less than 230 Units: ng/mL CF: - - -
D-Lactic Acid	10D	1 mL Serum or plasma (EDTA). Separate and freeze immediately. Store and send frozen. It 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.	D-Lactic Acid Less than 0.31 Units: mmol/L CF: mg/dL x 0.111
Dactylis glom(Cocksfoot) IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Orchard Grass (g3), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -
Darunavir	10D	2 mL Plasma (Heparin). Avoid gel-separator tubes. Separate within 2h of collection and transfer to clean transfer vial. Store and send frozen. Preferred collection time is trough collected within 30 min prior to the next	Darunavir >1.25 Therapeutic target is based on

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
		dose or 6-14h post dose (twice daily dosing), 12-26h post dose (once daily dosing). Peak collection time: 2-4h post dose. Indicate collection time on specimen and requisition. The 2 mL specimen is sufficient for analysis of multiple antiretroviral drugs with a reduced fee for multiple drugs on the same specimen. Minimum volume is 200 µL.	the trough concentration that exceeds the lower end of the range observed in patients with virological failure. Units: mg/L CF:
Dehydroepiandrosterone Sulfate	5D	1 mL Serum.	Dehydroepiand-s(DHEAS) Newborn M & F: 4.5 - 10.0 1-12 y M & F: < 5.0 13-29 y M: < 17.4 F: < 11.0 30-39 y M: < 14.0 F: < 7.3 40-49 y M: < 14.1 F: < 6.5 50-59 y M: < 8.5 F: < 5.4 60-69 y M: < 7.9 F: < 3.5 70-79 y M: < 4.7 F: < 2.4 Units: µmol/L CF: µg/mL x 2.56
Dermatophagoides Microceras (d3), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Dermatophagoi. Micro (d3), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -
Desipramine	5D	10 mL Urine (Random).	Desipramine - Urine Not detected Units: µmol/L CF: mg/L x 3.75
Desipramine	5D	3 mL Serum or plasma (EDTA). Avoid gel-separator tube and separate as soon as possible. Submit trough specimen (i.e. collected within 1 hour prior to next dose or at least 12 hours after last dose.)	Desipramine Therapeutic: 0.38 - 1.14 Toxic: > 1.80 Units: µmol/L CF: mg/L x 3.75

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Diazepam and Metabolite	10D	2 mL Serum. Avoid gel-separator tube. Collect trough specimen immediately before next dose. Store and send frozen. Analysis includes the active metabolite Nordiazepam.	Diazepam Not Available Units: ng/mL CF: µmol/L x 284.7 Diazepam Not Available Units: µmol/L CF: ng/mL x 0.00351 Nordiazepam Not Available Units: ng/mL CF: µmol/L x 270.7 Nordiazepam Not Available Units: µmol/L CF: ng/mL x 0.00369 Diazepam + Nordiazepam Ther: 100 - 1500 Potentially Toxic: >3000 Units: ng/mL CF: - - -
Digoxin: Free	1D	2 mL Serum. Indicate collection date and time last dose was given. Includes Total Digoxin.	Digoxin: Free Therapeutic Range: 0.8 - 2.0 Critical Values: > 3.5 Units: nmol/L CF: µg/L x 1.28 Digoxin: Total Therapeutic Range: 1.0 - 2.5 Critical Values: > 3.5 Units: nmol/L CF: µg/L x 1.28
Digoxin	1D	1 mL Serum. Collect post-distribution specimen 5 h after drug administration.	Digoxin Therapeutic: 1.0 - 2.6 Toxic: Greater than 2.6 Units: nmol/L CF: µg/L x 1.28
Dihydrotestosterone	10D	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.	Testosterone - Total Male: 20y to 49y: 8.6 - 29.0 Male: 50y and over: 6.7 - 25.7

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Female: Ovulating: 0.3 - 1.7 Female: Postmenopausal: <= 1.4 Children: 9m to puberty: <= 1.8 Units: nmol/L CF: ng/dL x 0.0347 Dihydrotestosterone Female, Premenopausal: 83 - 1266 Female, Postmenopausal: 50 - 623 Male: 860 - 3406 Units: pmol/L CF: ng/dL x 0.0344
DNA Antibodies	10D	1 mL Serum or Plasma (EDTA or Cit.). Store and send frozen. This assay measures antibodies against double-stranded DNA. (Analysis by an alternate method (Multiplex Bead Technology) is available as part of Extractable Nuclear Antigen Antibodies (see separate listing)).	ds-DNA Antibodies Negative: <= 99 Positive: > 99 Units: IU/mL CF: - - -
Dog Can f 1 (e101), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Dog Can f 1 (e101), IgE < 0.35 Interpretive Comment: Part of the Lipocalin protein family. Specific dog allergen component. Approximately 50-90% of dog allergic subjects are sensitized to Can f 1. Units: KU/L CF: - - -
Dog Can f 2 (e102), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Dog Can f 2 (e102), IgE < 0.35 Interpretive Comment: Part of the Lipocalin protein family. Specific dog allergen component. Approximately 20-30% of dog allergic subjects are sensitized to Can f 2. Units: KU/L CF: - - -
Dog Can f 3 (e221), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be	Dog Can f 3 (e221), IgE < 0.35

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
		used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Interpretive Comment: Cross-reactive dog serum albumin. Detected in about 15-50% of dog allergic subjects. Units: KU/L CF: - - -
Dog Can f 5 (e226), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Dog Can f 5 (e226), IgE < 0.35 Interpretive Comment: Part of the Arginine Esterase protein family. Specific dog allergen component. Up to 70% of dog allergic subjects are sensitized to Can f 5. Units: KU/L CF: - - -
Dopamine	10D	20 mL Urine (Random).	Creatinine Not available Units: nmol/L CF: - - - Dopamine - Uncalculated Not available Units: nmol/L CF: - - - Dopamine/Creat. ratio Less than 320 10y - 20y: Less than 320 5y - 9y: Less than 620 2y - 4y: Less than 900 Up to 2y: Less than 1760 Units: nmol/mmol Cr CF: - - -
Dopamine	10D	20 mL Urine (24h). Collect urine in a container with 25 mL 6N HCl acid. The final pH must be maintained between 2 - 4. Restrict caffeine, nicotine, and alcohol 24h prior to collection. Discontinue Methyldopa (Aldomet) at least 5 days prior to collection. Other drugs do not interfere with this assay. State 24h volume and collection date.	Dopamine - Uncalculated Not available Units: nmol/L CF: - - - Dopamine Less than 4000

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Units: nmol/d CF: - - - Dopamine/Creat ratio >20y: Less than 320 10y - 20y: Less than 320 5y - 9y: Less than 620 2y - 4y: Less than 900 Up to 2y: Less than 1760 Units: nmol/mmol Cr CF: - - -
Doxepin	5D	3 mL Serum or Plasma (EDTA). Avoid gel-separator tube and separate as soon as possible. Submit trough specimen (i.e. collected within 1 hour prior to next dose or at least 12 hours after last dose.) Assay includes Desmethyldoxepin.	Doxepin (D) No therapeutic range for Doxepin alone Units: µmol/L CF: mg/L x 3.58 Desmethyldoxepin (DD) No therapeutic range for Desmethyldoxepin alone Units: µmol/L CF: - - - Combined (D + DD) Therapeutic: 0.35 - 1.10 Toxic: > 1.40 Units: µmol/L CF: mg/L x 3.58
Doxepin	2D	10 mL Urine (Random). Assay includes Desmethyldoxepin.	Doxepin - Urine Not detected Units: µmol/L CF: mg/L x 3.58 Desmethyldoxepin Not detected Units: µmol/L CF: mg/L x 3.58
Drug Screen (LC-MS/MS)	2D	10 mL Urine (Random). Collect specimen and transport cold. Results are not for medicolegal purposes.	Creatinine, urine Not available Units: mmol/L CF: Benzodiazepine, urine Not Detected

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Units: CF: Not Detected Units: CF: Methadone Metabolite(EDDP),u Not Detected Units: CF: MAM (Heroin Metabolite),u Not Detected Units: CF: Morphine, urine Not Detected Units: CF: Codeine, urine Not Detected Units: CF: Oxycodone, urine Not Detected Units: CF: Hydrocodone, urine Not Detected Units: CF: Hydromorphone, urine Not Detected Units: CF: Meperidine, urine Not Detected Units: CF: Cocaine, urine Not Detected Units: CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Cocaine Metabolite (BEG),u Not Detected Units: CF: Methamph/amphet, urine Not Detected Units: CF: MDMA/MDA (Ecstasy), urine Not Detected Units: CF: Phencyclidine (PCP), urine Not Detected Units: CF: Amitrip/nortrip, urine Not Detected Units: CF: Imipramine/desipramine, u Not Detected Units: CF: Doxepin, urine Not Detected Units: CF: Fluoxetine, urine Not Detected Units: CF: Fluvoxamine, urine Not Detected Units: CF: Paroxetine, urine Not Detected Units: CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Sertraline, urine Not Detected Units: CF: Venlafaxine, urine Not Detected Units: CF: Diphen/dimen, urine Not Detected Units: CF: Norpseudoephedrine/PPA, u Not Detected Units: CF: Ephedrine/pseudoephedrine, u Not Detected Units: CF: Dextromethorphan, urine Not Detected Units: CF: Chlorpromazine, urine Not Detected Units: CF: Perphenazine, urine Not Detected Units: CF: Methotrimeprazine, urine Not Detected Units: CF: Risperidone, urine Not Detected Units: CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Loxapine/amoxapine, urine Not Detected Units: CF: Clozapine, urine Not Detected Units: CF: Lidocaine, urine Not Detected Units: CF: Ranitidine, urine Not Detected Units: CF: Additional Findings Units: CF:
Drug Screen-11 Panel	3D	1 mL Serum or Plasma (Hep, EDTA). Avoid gel separator tubes. Analysis includes initial GC-FID Screen and confirmatory quantitation by HPLC.	Barbital, blood Units: µmol/L CF: Butabarbital, blood Units: µmol/L CF: Butalbital, blood Units: µmol/L CF: Amobarbital, blood Units: µmol/L CF: Pentobarbital, blood Units: µmol/L CF: Secobarbital, blood Units: µmol/L CF: Phenobarbital, blood Units: µmol/L CF: Methyprylon, blood Units: µmol/L CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Methaqualone, blood Units: µmol/L CF: Glutethimide, blood Units: µmol/L CF: Meprobamate, blood Units: µmol/L CF:
Drug Screen	7D	Nasal Swab. Submit swab in plastic pouch labeled with at least two unique identifiers matching the requisition/order.	Drug Screen - Nasal Swab Not Available Units: CF:
Drug Screen	2D	6 mL Serum. Avoid 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.	Quantitative analysis See individual drug listings for therapeutic ranges Units: See report CF: - - -
Efavirenz	10D	2 mL Plasma (Heparin). Avoid gel-separator tubes. Separate within 2h of collection and transfer to clean transfer vial. Store and send frozen. Preferred collection time is trough collected within 30 min prior to the next dose or >= 10h post dose. Peak collection time: 4 - 6 hours post dose. Indicate collection time on specimen and requisition. The 2 mL specimen is sufficient for analysis of multiple antiretroviral drugs with a reduced fee for multiple drugs on the same specimen. Minimum volume is 200 µL.	Efavirenz 1.0 - 4.0 Units: mg/L CF:
Egg (f245), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Egg (f245), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			> 100 6: Extremely High Units: KU/L CF: - - -
Elastase 1	30D	5 g Faeces. Store and send frozen.	Elastase 1 - Fecal <100: Strongly suggestive of Pancreatic Insufficiency. 100 - 200: Suggestive of moderate Pancreatic Dysfunction, close to the threshold for developing Pancreatic Insufficiency. >200: Suggestive of Pancreatic Sufficiency. Units: µg/g CF: - - -
Endomysial Antibodies	21D	1 mL Serum.	Endomysial Antibodies Negative Units: Qual. test CF: - - -
English Plantain (w9), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	English Plantain (w9), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -
Enterovirus PCR, Spinal fluid	2D	1 mL CSF. Collect specimen, freeze and ship on dry ice.	Enterovirus RNA NEGATIVE Units: CF:
Epstein Barr Virus PCR: Quantitative	8D	1 mL Separated plasma (EDTA). For transplant patients only. Collect specimen, separate plasma and freeze. Ship on dry ice.	Epstein Barr Virus DNA NEGATIVE Units: copies/mL CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Erythropoietin	10D	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.	Erythropoietin 2.6 - 18.5 Units: IU/L CF: - - -
Estradiol	1D	1 mL Serum or Plasma (Hep. or EDTA). Store and send frozen.	Estradiol Adult Male: 95 - 223 Adult Female: Follicular: 45 - 854 Mid-cycle: 151 - 1461 Luteal: 82 - 1251 Post Menopausal: 18 - 505 Prepubertal ranges not available. Units: pmol/L CF: ng/dL x 36.7
Estriol, Unconjugated	7D	1 mL Serum. Collect serum in a red-top tube. Gel-separator tube is acceptable. Ship refrigerated (preferred).	Estriol, Unconjugated M: < 0.07 F: < 0.08 Units: ng/mL CF:
Estrone	30D	1 mL Serum or Plasma (Heparin). Store and send frozen.	Estrone Adult Female: Ovulating - Follicular 137 - 510 Luteal 185 - 422 Peri-Ovulatory 222 - 847 PostMenopausal - Treated 148 - 1278 Untreated 52 - 379 (Ranges for male not available) Units: pmol/L CF: pg/mL x 3.70

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Ethanol: Screen	1D	1 mL Urine (Random). Collect specimen and seal to reduce evaporative loss. Transport cold. Results are not for medicolegal purposes.	Ethanol Screen - Urine Not Detected Units: CF:
Ethosuximide	5D	0.5 mL Serum. Avoid gel-separator tubes. Submit trough specimen (i.e. collected within 1 hour prior to next dose or at least 12 hours after last dose.	Ethosuximide Therapeutic: 280 - 710 Units: µmol/L CF: mg/L x 7.08
Ethyl Glucuronide	8D	5.0 mL Urine (Random). Store and send frozen.	Creatinine - Urine 4.5 - 16.0 Units: mmol/L CF: - - - pH - Urine 4.0 - 8.0 Units: Units CF: - - - Ethanol - Urine <= 2.4 Units: mmol/L CF: - - - Ethyl Glucuronide Negative <100 Indeterminate 100-200 Positive >200 Units: µg/8.8 mmol C CF: - - -
Ethylene Glycol	1D	2 mL Serum or Plasma (Fluoride). Do not use alcohol swab during collection. To minimize evaporative loss, do not open or separate specimen.	Ethylene Glycol - Serum/Plasma <1.0 Toxic: over 3.2 Any amount in serum may be associated with toxicity. Units: mmol/L CF: - - -
Ethylene Oxide (k78), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Ethylene Oxide (k78), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -
Etravirine	10D	3 mL Plasma (Heparin). Avoid gel-separator tubes. Separate within 2h of collection and transfer to clean transfer vial. Store and send frozen. Preferred collection time is trough collected within 30 min prior to the next dose or 6-14h post dose (twice daily dosing), 12-26h post dose (once daily dosing). Indicate collection time on specimen and requisition. The 2 mL specimen is sufficient for analysis of multiple antiretroviral drugs with a reduced fee for multiple drugs on the same specimen. Minimum volume is 200 µL.	Etravirine >0.08 Therapeutic target is based on the trough concentration that exceeds the lower end of the range observed in patients with virological failure. Units: mg/L CF:
Eucalyptus (t18), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Eucalyptus (t18), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -
Euglobulin Fibrinolysis Time	20D	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.	Euglobulin Fibrinolysis Time Normal fibrinolytic activity: Over 1.5 hours Units: hour CF: - - -
European Hornet (i75), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	European Hornet (i75), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -
Extractable Nuclear Antigen Antibodies	10D	1 mL Serum. Specimen will be tested for antibodies to 13 nuclear antigens and the results compared to pre-established cutoffs for systemic autoimmune disease. Numeric results for the antibodies will only be reported when one antibody or more exceed the cutoff. Every report will include an interpretive Medical Decision-Support System (MDSS) comment. (DNA Antibodies may be ordered individually (method: ELISA) - see test mnemonic DNAAB.) (Antinuclear Antibodies may be ordered individually (method: IFA with human mitotic cell substrate) - see test mnemonic ANA.)	ANA/ENA Screen Negative Units: CF: - - - dsDNA Antibodies Negative: <= 4 Indeterminate: 5 - 9 Positive: >= 10 Units: IU/mL CF: Chromatin Antibodies < 1.0 Units: AI CF: Ribosomal Protein Antibodies < 1.0 Units: AI CF: SS-A 52 Antibodies < 1.0 Units: AI CF: SS-A 60 Antibodies < 1.0 Units: AI CF: SS-B Antibodies < 1.0 Units: AI CF: Centromere-B Antibodies < 1.0 Units: AI CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Sm Antibodies < 1.0 Units: AI CF: SmRNP Antibodies < 1.0 Units: AI CF: RNP 68 Antibodies < 1.0 Units: AI CF: RNP A Antibodies < 1.0 Units: AI CF: Scl-70 Antibodies < 1.0 Units: AI CF: Jo-1 Antibodies < 1.0 Units: AI CF:
Factor V Leiden Mutation	20D	4.0 mL Whole Blood (ACD,EDTA,Citrate). Store and send at controlled ambient temperature.	Factor V Leiden Mutation Interpreted on Report Units: - - - CF: - - -
False ragweed (w4), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	False ragweed (w4), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Farmer's Lung Precipitins	15D	1 mL Serum. This test is included in Allergic Lung Serology Panel. See separate listing.	Micropolyspora Faeni 3 PPT Negative Units: Qual. Test CF: - - - T. Vulgaris 1 PPT Negative Units: Qual. Test CF: - - - T. Vulgaris 2 PPT Negative Units: Qual. Test CF: - - -
Fatty Acids, Free: Total	14D	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.	Fatty Acids Free: Total 100 - 900 Units: µmol/L CF: - - -
Fatty Acids, Long Chain	15D	2 mL Serum or plasma (EDTA). Collect fasting specimen. Separate and freeze as soon as possible. Store and send frozen.	C26:0 0.000 - 1.466 Units: µmol/L CF: - - - C26:0/C22:0 ratio 0.000 - 0.035 Units: Ratio CF: - - - C24:0/C22:0 ratio 0.000 - 1.094 Units: Ratio CF: - - - Interpretation Results interpreted on report. Units: See report CF: - - -
Fat	10D	Faeces (48 or 72 h collection). Specimens must be collected in approved containers obtained from HICL - contact Customer Service for the containers and instructions. Note: Other containers (such as metal cans) are not acceptable.	Total Weight Units: g CF: Duration Units: Hours CF: Total Fat/24 hrs

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			> = 18y: 2 - 7 (Reference values have not been established for <18y) Units: g fat/24hr CF:
Fat	3D	1 g Faeces (Random). Sample must be submitted in a sealed container.	Fat Screen - Feces Units: Qual. test CF: - - -
Fat	3D	25 mL Urine (Random). Do not add any preservative to the urine collection.	Fat Screen - Urine None Seen Units: Qual. test CF: - - -
Ferritin	2D	2.0 Serum or Plasma (Heparin).	Ferritin 20 - 400 {New ranges and method effective June 28, 2000} Units: µg/L CF: ng/mL x 1.0
Fetal Lung Maturation	1D	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.	Lamellar body count Over 40 Units: x 10*9/L CF: - - - Fetal lung comment Comment on report Units: See report CF: - - -
Fibrinogen: Functional	1D	1 mL Plasma (Citrate). Store and send frozen. If the specimen thaws, it is unsuitable for analysis.	Fibrinogen 0 - 1 d: 1.50 - 3.75 1 d - 1 m: 1.50 - 4.15 1 - 6 m: 1.50 - 3.60 >6 m: 1.80 - 4.00 Units: g/L CF: mg/dL x 0.010
Fibrinogen: Immunological	30D	1 mL Plasma (Sodium Citrate). Separate and freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.	Clauss Fibrinogen 1.6 - 4.2 Units: g/L CF: - - - Fibrinogen: Immunological 1.6 - 4.2

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Units: g/L CF: - - -
Flunitrazepam	2D	5 mL Urine (Random). Min vol confirmed Jan05. New WL MAy05. Fee change Jul05}	Flunitrazepam Not Detected Confirmed on the LC-MS/MS using Beta Glucuronidase hydrolysis. Units: Qual. test CF: - - - Creatinine - Urine (random) Not Available Units: mmol/L CF: - - -
Fluoride	28D	5 mL Urine (Random). Collect a random urine specimen. Avoid external contaminants during sample collection.	Specific Gravity 1.010 - 1.030 Units: g/mL CF: Urine Fluoride 10 - 170 Units: µmol/L CF:
Fluoride	20D	2 mL Serum or Plasma (EDTA). Collect in contaminant-free tube (e.g. BD 368380 for Serum or BD 368381 for Plasma). Transfer serum or plasma to polypropylene vial as soon as possible. Store and send cold.	Fluoride 0.52 - 10 Units: µmol/L CF: mg/L x 52.6
Fluoxetine	3D	1 mL Serum or Plasma (Heparin). Avoid gel-separator tubes. Submit trough specimen (i.e. collected within 1 hour prior to next dose.) Assay includes the metabolite Norfluoxetine.	Fluoxetine 160 - 1600 Units: nmol/L CF: - - - Norfluoxetine 170 - 1700 Units: nmol/L CF: - - -
Folate	5D	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.	Folate - Serum Greater than 15.0 Units: nmol/L CF: ng/mL x 2.265
Folate	2D	2 mL Whole blood (EDTA). Fast freeze 2 mL whole blood. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.	Hematocrit 0.330 - 0.450

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
		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.	Units: CF: - - - Folate - Erythrocyte 1150 - 2300 Units: nmol/L CF: ng/mL x 2.265
Follicle Stimulating Hormone	2D	1 mL Serum or Plasma (Hep. or EDTA).	Follicule Stimulating Hormone Male: 1 - 11 Female: Follicular: 3 - 14 Mid-cycle: 6 - 21 Luteal: 1 - 9 Post-menopausal: 22-153 On Estrogen Replacement: 10 - 111 Oral Contraceptives: 0 - 5 Units: IU/L CF: mIU/mL x 1.00
Food Mix (Fx5), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to an allergen mix (Egg White,Milk,Fish,Wheat,Peanut,Soybean). This assay provides a single qualitative result only. It does not provide information on the amount of IgE specific for any of the component allergens within the mix. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Food Mix (Fx5), IgE Negative Units: KU/L CF: - - -
Fructosamine	5D	1 mL Serum. Hemolyzed or icteric specimens may falsely elevate results.	Fructosamine M & F: 205 - 285 Fructosamine concentrations reflect glucose status over the previous 3 weeks. Dysproteinemic states may produce erroneous fructosamine values. Units: µmol/L CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Fungitell	5D	0.5 mL Serum. Collect specimen in gel-separator tube. Centrifuge specimen within 2 h. Do NOT aliquot specimen. Store and ship tube frozen. Pediatric: 0.2 mL.	Fungitell Assay Negative: < 60 Indeterminate: 60-79 Positive: >= 80 Units: pg/mL CF:
Galactomannan	7D	1 mL Serum or BAL. Serum or Broncheoalveolar lavage (BAL) specimen is acceptable. BAL has demonstrated improved sensitivity over serum. Indicate specimen type on requisition. Store and send frozen. Stability information is based on separated serum and use of dry ice or freezing at -70°. Assay requires minimum 1 mL - submit two 1 mL aliquots of Serum or BAL if possible to allow confirmatory repeats on frozen aliquot.	Source Units: CF: Index Serum or BAL Index: Non-Reactive: Index < 0.5 Reactive: Index > = 0.5 Units: CF: Comment Units: CF:
Galactose-1-Phos. Urid. Trans.: Quant	10D	1 mL Whole blood (Heparin). Store and send at 4°. 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 ICl Client CAre at (416) 422-3000 ext. 300 or info@hicl.on.ca.	Galactose-1-PUT: Quant Normal: 299 - 377 Heterozygote: 114 - 188 Homozygote: 0 - 40 Units: U/kg Hb CF: - - -
Galactose-1-Phos. Urid. Trans.: Screen	10D	1 mL Whole blood (Heparin). Avoid gel-separator tubes. Store and send at 4° - do not freeze. 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 ICL Client Care at (416) 422-3000 ext. 300 or info@hicl.on.ca.	Galactose-1-PUT: Screen Normal Units: Qual. test CF: - - -
Galectin-3	10D	1 mL Serum. Collect serum in a plain, red-top tube. Store and send frozen.	Galectin-3 < 18y: Not Established,>= 18y: <= 22.1 Elevated galectin-3 is associated with greater cardiovascular risk and poor

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			outcome in heart failure patients: (low risk): <= 17.8 ng/mL (intermediate risk): 17.9 - 25.9 ng/mL (high risk): >25.9 ng/mL Results should be interpreted in the context of the individual patient presentation. Units: ng/mL CF:
γ-Hydroxybutyrate	3D	5 mL Urine (random). Store and send cold.	γ-Hydroxybutyrate Not applicable Units: Qual. test CF: - - - Creatinine - Urine (random) Not available Units: mmol/L CF: - - -
Ganglioside GQ1B Antibodies	10D	1 mL Serum or Plasma. Draw in plain red-top vacutainer. Gel tubes are acceptable.	GQ1B IgG Antibody Less than 1:100 Interpretetive Guidelines: Less than 1:100 - Not Detected Greater than or equal 1:100 - Antibody Detected Units: Ratio CF: - - -
Gastrin	5D	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.	Gastrin Fasting: 13 - 115 Units: ng/L CF: pg/mL x 1.00
Gastrointestinal Virus PCR	3D	5-20 mL Faeces (Liquid or semi-solid). Collect specimen in a clean dry sterile container. Do not allow contact with urine or paper. Transport cold. Due to limited stability, sample must be received at ICL from Monday-Thursday within 24 hrs of collection. Unacceptable specimens: Rectal swab, Faeces in transport medium, formed stool. Additional information required: Indicate symptoms, if testing is part of an outbreak, and if virus additional to norovirus is requested.	Norovirus PCR NEGATIVE by PCR Units: CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Gentamicin: Peak	1D	1 mL Serum. Avoid gel-separator tubes. Submit peak specimen (i.e. collected 1 h after IM or 15 minutes after a 60 minute IV (or 30 minutes after a 30 minute IV) dosage). Collect with third dose if possible. Separate and freeze as soon as possible. Store and send frozen. Label Peak specimen and requisition clearly.	Gentamicin: Peak Once daily dosing (normal renal function): Half-hour post: 12 - 20 8 h post: 1.5 - 6.0 Conventional dosing: Half-hour post: 5 - 8 Units: mg/L CF: - - -
Gentamicin: Trough	1D	1 mL Serum. Avoid gel-separator tubes. Submit trough specimen (i.e. collected 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.	Gentamicin: Trough Once daily dosing: Less than 1.0 Conventional dosing: Less than 1.0 Units: mg/L CF: - - -
Gliadin (Deamidated) Antibodies	5D	1 mL Serum. This assay is also included in the Celiac Profile (see separate listing).	Gliadin (Deamidated) Ab.-IgA <20 Negative 20 - 30 Weakly Positive >30 Positive False negative results may occur in individuals who are IgA deficient. Units: CU CF: - - - Gliadin (Deamidated) Ab.-IgG <20 Negative 20 - 30 Weakly Positive >30 Positive Units: CU CF: - - -
Gliadin (f98), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Gliadin (f98), IgE < 0.35 Interpretive Comment: Contains Alpha, Beta, Gamma and Omega Gliadins. Risk marker for systemic reactions.

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Marker for wheat allergy peristence. Considered specific marker for wheat food allergy. Units: KU/L CF: - - -
Glomerular Base. Membrane Antibody	2D	1 mL Serum.	Anti GBM Antibodies < 1.0 Units: AI CF:
Glucagon	11D	3 mL Plasma (EDTA). Collect a fasting sample (overnight fast). Store and send frozen.	Glucagon Adult: < = 134 Pediatric: Cord Blood: < = 215 Day 1: < = 240 Day 2: < = 400 Day 3: < = 420 Day 4 - 3y: Not Established 4 - 14y: < = 148 Units: pg/mL CF:
Glucose-6-Phosphate Dehydrogenase	5D	5 mL Whole Blood (EDTA). Do not freeze.	Glucose-6-Phos. Dehydrogenase 6 - 11 Units: U/g Hb CF: - - -
Glucose	2D	1 mL Fluid. Indicate source of fluid. Saliva/sputum are not suitable fluids for Glucose analysis.	Glucose - Fluid Reference ranges not available for fluids. Units: mmol/L CF: mg/dL x 0.0555
Glutamic Acid Decarboxylase Antibodies	5D	1 mL CSF. Store and send frozen. This test should not be requested in patients who have recently received radioisotopes, therapeutically or diagnostically, because of potential assay interferences.	GAD65 Antibody <= 0.02 Units: nmol/L CF:
Glutamic Acid Decarboxylase Antibodies	7D	1 mL Serum. Store and send frozen.	Gad-65 Antibody < 5 Units: IU/mL CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Glycine	10D	1 mL CSF & Serum/plasma. Analysis requires CSF and concurrent serum or plasma collection. Fasting collection preferred. Specify date of birth and diagnosis. Store and send frozen. Report includes complete amino acids panel.	Glycine - CSF 4 - 8 Units: µmol/L CF: - - - Glycine Ratio Interpreted on report Units: CF: Amino Acids - S/P See Report Units: CF:
GM1 Ganglioside Antibody	20D	2 mL Serum. Avoid gel-separator tubes. Submit two 1 mL aliquots. Store and send frozen.	GM1 Ganglioside Antibody Negative: <30 Grey Zone: 30 - 50 Positive: >50 - 100 Strong Positive: >100 Units: Ratio (%) CF: - - -
Gold	15D	1 mL Serum or Plasma (EDTA). Collect in contaminant-free tube (e.g. BD 368380 for Serum or BD 368381 for Plasma). Transfer serum or plasma to polypropylene vial as soon as possible. Store and send cold.	Gold 0 - 0.50 Units: µmol/L CF: - - -
Growth Hormone	3D	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.	Growth Hormone M & F: Fasting <2 Response to stimulation: >=4 Units: µg/L CF: ng/mL x 1.00
Haloperidol	7D	4 mL Serum & Plasma (Heparin). Avoid gel-separator tubes. Submit trough specimen (i.e. collected within 1 hour prior to next dose.) Separate immediately. Store and send frozen.	Haloperidol 11 - 53 Range may not apply to chronic treatment refractory patients who may require higher range than stated. Units: nmol/L CF: ng/mL x 2.66
Hantavirus Antibodies	7D	1 mL Serum. Collect in a plain red-top tube. Gel separator tube is acceptable. Due to limited stability, store and send frozen. If Hantavirus	Hantavirus IgG < 2.00

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
		IgG is >= 2.00 and Hantavirus IgM is >= 2.00 Sin Nombre Virus IgG Confirmation will be performed at an additional charge. If Hantavirus IgM is >= 2.00 Sin Nombre Virus IgM Confirmation will be performed at an additional charge.	Interpretive Criteria: < 2.00 Antibody not detected >= 2.00 Antibody detected Units: CF: Hantavirus IgM < 2.00 Interpretive Criteria: < 2.00 Antibody not detected >= 2.00 Antibody detected Units: CF: Interpretation Units: CF: Sin Nombre Virus IgG Negative Units: CF: Sin Nombre Virus IgM Negative Units: CF:
Haptoglobin Electrophoresis	5D	2 mL Serum or Plasma (EDTA). Store and send frozen. Analysis includes qualitative assessment of Free Hemoglobin, Haptoglobin, Hemopexin-Heme Complex and Methemalbumin.	Free hemoglobin Absent Units: Qual. Test CF: - - - Haptoglobin Normal Units: Qual. Test CF: - - - Hemopexin-heme complex Absent Units: Qual. Test CF: - - - Methemalbumin Absent Units: Qual. Test CF: - - -
Haptoglobin	5D	1 mL Serum. Avoid hemolysis.	Haptoglobin

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			0.30 - 2.00 Units: g/L CF: mg/dL x 0.0100
Hazel (t4), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Hazel (t4), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -
Hazelnut nCor a 9 (f440), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	nCor a 9 Hazelnut (f440), IgE < 0.35 Interpretive Comment: Storage protein (11S globulin) Heat and digestion stable. Highly abundant in hazelnut. Associated with systemic reactions. Units: KU/L CF: - - -
Hazelnut rCor a 1 PR-10 (f428), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	rCor a 1 PR-10 Hazelnut, IgE < 0.35 Interpretive Comment: PR-10 protein Heat and digestion labile. Primarily associated with local reactions. Roasted hazelnuts may be tolerated. Units: KU/L CF: - - -
Hazelnut rCor a 14 (f439), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be	rCor a 14 Hazelnut (f439), IgE < 0.35 Interpretive Comment:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
		used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Storage protein (2S albumin) Heat and digestion stable. Highly abundant in hazelnut. Associated with systemic reactions. Units: KU/L CF: - - -
Hazelnut rCor a 8 LTP (f425), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	rCor a 8 LTP Hazelnut, IgE < 0.35 Interpretive Comment: Lipid Transfer Protein (LTP) Heat and digestion stable. Associated with local as well as systemic reactions. Units: KU/L CF: - - -
Heart Muscle Antibodies	10D	1 mL Serum.	Heart Muscle Antibodies Not Detected Units: Qual. Test CF:
Helicobacter pylori Antigen	5D	0.5 g Faeces. Collect specimen in sterile leak-proof container. Do not place stool in preservative, transport media or swab. Store and send frozen. Watery, diarrheal stool is not acceptable. Refer to Patient Preparation document prior to collection.	H. pylori Antigen - Faeces Not Detected Units: Qual. Test CF: - - -
Hemoglobin A1c	4D	1 mL Whole blood (EDTA). Sample must be received at ICL Mon-Thu within 5 days of collection. Testing should only be performed every 60 days unless otherwise indicated. See separate listing for analysis by TINIA.	Hemoglobin A1c (NGSP) 0.040 - 0.060 Units: Fraction CF: Hemoglobin A1c (NGSP) 4.0 - 6.0 Units: % CF: Hemoglobin A1c (IFCC) 20 - 42 Units: mmol/mol CF:
Hemoglobin A1c	2D	1 mL Whole blood (EDTA). See separate listing for analysis by Capillary Electrophoresis.	Hemoglobin A1c 0.048 - 0.059

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Units: CF: - - -
Hemoglobin Fractionation	10D	3 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. {Use HBELEC if fractionation and Hb H are specified. Use HBH if only Hb H ordered. New TAT (old 3d) Nov 2010.	Hemoglobin A2 12m - Adult: 0.02 - 0.035 Units: Fraction CF: % x 0.0100 Hemoglobin F Up to 1d: 0.715 - 0.918 2 - 28d: 0.546 - 0.963 29 - 60d: 0.190 - 0.882 61d - 4m: 0.001 - 0.644 4 - 6m: 0.001 - 0.141 6 - 12m: 0.001 - 0.041 12m to Adult: Less than 0.030 Units: Fraction CF: % x 0.0100 Hemoglobin A Up to 1d: 0.082 - 0.285 2 - 28d: 0.037 - 0.454 29 - 60d: 0.118 - 0.810 61d - 4m: 0.356 - 0.999 4 - 6m: 0.859 - 0.999 6 - 12m: 0.959 - 0.999 12m to Adult: 0.965 - 0.999 Units: Fraction CF: % x 0.0100 Interpretation Refer to report Units: CF:
Hemoglobin	5D	1 mL Plasma (Heparin). Serum is not acceptable. Centrifuge specimen well and separate from cells as soon as possible. Avoid hemolysis. Store and send frozen.	Hemoglobin - Plasma 0 - 29 Units: mg/L CF: mg/dL x 10.0
Hemosiderin	5D	10 mL Urine (Random). Send a first morning urine collection.	Hemosiderin Not detected Units: Qual. test CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Heparin Co-Factor: Functional	25D	0.5 mL Plasma (Citrate). Separate as soon as possible. Store and send frozen.	Heparin Co-Factor 16 y and up: 0.65 - 1.30 Units: U/mL CF:
Heparin: Fondaparinux	2D	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: Fondaparinux A therapeutic range for Fondaparinux has not been established. Average peak, steady-state levels (2-3 h post-dose) of approx. 1.02-1.07 IU anti-Xa activity/mL have been reported for patients given therapeutic doses of Fondaparinux for symptomatic DVT/PE. Units: U/mL CF: - - -
Heparin: Low Molecular Weight	1D	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: Low Molecular Weight Suggested LMWH anti-Xa therapeutic range for patient samples drawn 4 hours post SC injection only: 0.6 - 1.1 anti-Xa: twice a day injection 1.0 - 2.0 anti-Xa: once a day injection Units: U/mL CF: - - -
Heparin: Orgaran Heparinoid	1D	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: Orgaran 0.50 - 0.80 Units: U/mL CF:
Heparin: PF4 Antibodies	1D	1 mL Plasma. Freeze specimen as soon as possible. If the specimen thaws, it is unsuitable for analysis.	Heparin:PF4 Ab (HIT) 0 - 0.60 < 1.0 is Negative for HIT >=1.0 is Positive for HIT Units: U/mL CF:
Heparin: Standard	1D	1 mL Plasma (Citrate). Separate immediately into 2 plastic vials and freeze. Store and send frozen. If the specimen thaws, it is unsuitable for	Heparin - Standard 0.36 - 0.74 Units: U/mL CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
		analysis. Request must specify "Standard" or "Unfractionated" or specify heparin preparation (brand name) administered.	
Hepatitis A Antibodies (IgG)	2D	1 mL Serum. Plasma (Heparin) is acceptable only for dialysis patients. Store and send cold. This test is used to investigate immunity status. Hepatitis A is a Reportable Communicable Disease in Ontario.	Hepatitis A Antibodies (IgG) Non-Reactive Units: Qual. Test CF:
Hepatitis A Antibodies (IgM)	2D	1 mL Serum. Plasma (Heparin) is acceptable only for dialysis patients. Store and send cold. This test is used to investigate current acute or recent infection. Hepatitis A is a Reportable Communicable Disease in Ontario.	Hepatitis A Antibodies (IgM) Non-Reactive Units: Qual. Test CF:
Hepatitis B Core Antibodies (IgG-IgM)	2D	1 mL Serum. Plasma (Heparin) is acceptable only for dialysis patients. Store and send cold. This test is used to investigate Hepatitis B infection. The presence of Hepatitis B Core Antibodies indicates previous or ongoing infection in an undefined time frame. Hepatitis B is a Reportable Communicable Disease in Ontario.	Hepatitis B Core Ab - IgG/M Non-Reactive Units: Qual. Test CF:
Hepatitis B Core Antibodies (IgM)	2D	1 mL Serum. Plasma (Heparin) is acceptable only for dialysis patients. Store and send cold. This test is used to investigate Hepatitis B infection. Positivity indicates recent infection (<6 mos). Its presence indicates acute infection. Hepatitis B is a Reportable Communicable Disease in Ontario.	Hepatitis B Core Ab-IgM Non-Reactive Units: Qual. Test CF:
Hepatitis B Surface Antibodies (IgG)	2D	1 mL Serum. Plasma (Heparin) is acceptable only for dialysis patients. Store and send cold. This test is used to investigate infection or immunity status. Hepatitis B is a Reportable Communicable Disease in Ontario.	Hepatitis B Surface Ab - IgG Non-Reactive Units: Qual. Test CF:
Hepatitis B Surface Antigen	2D	1 mL Serum. Plasma (Heparin) is acceptable only for dialysis patients. Store and send cold. Confirmatory testing will be performed and billed for reactive specimens. Hepatitis B Core Antibodies (IgM) will be reported and billed for new reactive specimens. Hepatitis B is a Reportable Communicable Disease in Ontario.	Hepatitis B Surface Antigen Non-Reactive Units: Qual. Test CF:
Hepatitis Screen - Acute	2D	1 mL Serum. Plasma (Heparin) is acceptable only for dialysis patients. Analysis includes Hepatitis A Antibodies (IgM) and Hepatitis B Surface Antigen. Hepatitis B Core Antibody (IgM) will also be reported and billed when Hepatitis B Surface Antigen is positive. Store and send cold. This	Hepatitis A Antibodies (IgM) Non-Reactive Units: Qual. Test CF: Hepatitis B Surface Antigen

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
		test is used to investigate acute infection. Hepatitis A and Hepatitis B are Reportable Communicable Diseases in Ontario.	Non-Reactive Units: Qual. Test CF:
Hepatitis Screen - Chronic	2D	1 mL Serum. Plasma (Heparin) is acceptable only for dialysis patients. Store and send cold. Analysis includes Hepatitis B Surface Antigen and Hepatitis C Antibody. Hepatitis B Core Antibody will also be reported and billed when Hepatitis B Surface Antigen is positive. Positive Hepatitis C Antibody specimens are referred to Ontario Agency for Health Protection and Promotion, Toronto for confirmation. This test is used to investigate chronic infection. Hepatitis B and Hepatitis C are Reportable Communicable Diseases in Ontario.	Hepatitis B Surface Antigen Non-Reactive Units: Qual. Test CF: Hepatitis C Antibodies Non-Reactive Units: Qual. Test CF:
Herpes Virus PCR, Blood	2D	1 mL Separated plasma (EDTA). Collect specimen, separate plasma and ship on dry ice.	Herpes Simplex 1 DNA NEGATIVE Units: CF: Herpes Simplex 2 DNA NEGATIVE Units: CF: Varicella Zoster DNA NEGATIVE Units: CF:
Herpes Virus PCR, Lesion	4D	Lesion swab. For vesicle lesion: Remove the lesion with a sterile scalpel. Collect the epithelial cells by gently blotting/rubbing with a plastic shafted cotton swab. Place into Viral Transport Medium and ship on dry ice. For non-vesicle lesion: Collect cells from base of lesion by using a swab pre-moistened with sterile saline. Place into Viral Transport Medium and hold at 4 °. Transport specimen within 24 hours or ship on dry ice if longer. Indicate source of lesion/vesicle.	Herpes Simplex 1 DNA NEGATIVE Units: CF: Herpes Simplex 2 DNA NEGATIVE Units: CF: Varicella Zoster DNA NEGATIVE Units: CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Herpes Virus PCR, Spinal fluid	2D	1 mL CSF. Collect spinal fluid in a sterile screw cap tube from the Lumbar Puncture Tray. Send tube #2, 3, or 4. Freeze and ship on dry ice. Indicate source of fluid.	Herpes Simplex 1 DNA NEGATIVE Units: CF: Herpes Simplex 2 DNA NEGATIVE Units: CF: Varicella Zoster DNA NEGATIVE Units: CF:
High Molecular Weight Kininogen	20D	1 mL Plasma (Na Citrate). Prepare platelet-poor plasma specimen and freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.	High Mol. Wt. Kininogen 0-<3 m: 0.10 - 1.00 3 m and up: 0.50 - 1.50 Units: U/mL CF: - - -
Histamine	5D	4 mL Urine (24h). Collect 24-hr urine with 10 mL 6N HCl or with no preservative. Store and send cold or frozen. Restrict histamine-rich foods (cheese, wine, red meats, spinach and tomatoes), allergy causing drugs, antihistamines, oral corticosteroids, and substances which block H2 receptors for at least 24 hours prior to collection and during collection.	Histamine - Urine 24h 0.006 - 0.131 Units: mg/d CF: - - - Creatinine - Urine 24h 3-8y: 0.11-0.68 9-12y: 0.17-1.41 13-17y: 0.29-1.87 Adult: 0.63-2.50 Units: g/d CF: - - -
Histamine	10D	1 mL Plasma (EDTA). Collect specimen, separate and freeze immediately. Store and send frozen. If the specimen thawsit is unsuitable for analysis. Specimen must be received at ICL Mon-Wed within 3 days of collection. Patient must avoid histamine-rich foods for 5 hours prior to specimen collection e.g. cheese, wine, red meats, spinach, tomatoes. Avoid taking allergy causing drugs, antihistamines, oral corticosteroids and substances which block H2 receptors 24 hrs prior to collection.	Histamine - Plasma 0.1 - 1.8 Units: ng/mL CF: - - -
Histone Antibodies	10D	1 mL Serum. Store and send frozen.	Anti-Histone Antibodies Negative: <=0.9

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Positive: >0.9 Units: Ratio CF: - - -
Homocysteine	3D	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.	Homocysteine 4 - 15 Plasma Total Homocysteine graded risk for cardiovascular disease Less than 11 µmol/L: Desirable 11 - 14 µmol/L: Intermediate 15 - 29 µmol/L: High Greater than 29 µmol/L: Very High Units: µmol/L CF: - - -
Homogentisic Acid	30D	10 mL Urine (Random). Collect sample in orange top sterile container. Early morning specimen is preferred. Pediatric sample volume: 2 mL. Store and send frozen.	Homogentisic Acid Not detected Units: Qual. test CF: - - -
HPV: Detection & Genotype	10D	Cervical Cells. Refer to [HPV Collection Instructions]. Collection supplies (with instructions and requisitions) may be obtained by contacting ICL Client Care at (416) 422-3000 ext. 300 or info@hicl.on.ca. Provide source of fluid clearly on requisition. This assay specifically identifies HPV 16 and HPV 18 while concurrently detecting the rest of the high risk types (31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66 and 68) at clinically relevant infection levels.	HPV Negative Units: CF: - - -
Human Leukocyte Antigen B27	10D	5 mL Whole Blood (ACD or EDTA). Store and send cold. Specimens should ideally be shipped to ICL the same day collected, Monday to Thursday. Specimens older than 5 days may be unsuitable for analysis.Specimens must be received at ICL Monday to Friday within 4 days of collection.	Human Leukocyte Antigen B27 None Units: Qual. Test CF: - - -
Human T Lymphocyte Virus I/II Antibody	4D	1 mL Separated serum (Red-top). Collect specimen, separate serum and transport cold. For bone marrow patients indicate whether sample is from patient or potential donor. All repeated reactive samples are referred to the	HTLV I/II Antibody NON-REACTIVE Units: CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
		Ontario Agency for Health Protection and Promotion, Toronto (TPHL) for confirmation. For dialysis patients, 1 mL plasma (Heparin) is acceptable.	
Hydroxychloroquine	6D	1 mL Serum or Plasma (EDTA). Indicate specimen collected (plasma or serum) on requisition and specimen. Avoid gel-separator tube. Anticoagulant other than EDTA is not acceptable.	Hydroxychloroquine Peak plasma concentrations of 410 +/- 130 ng/mL were achieved 2.4 hours after a single oral dose of 400 mg hydroxychloroquine (n=6). Two cases of hydroxychloroquine overdose (20 g each) were successfully treated throughout cardiovascular collapse and had serum concentrations of 14,000 and 26,000 ng/mL. Units: ng/mL CF:
IA-2 Antibody	9D	1 mL Serum. Store and send cold.	IA-2 Antibody < 0.8 Units: U/mL CF:
Ibuprofen	7D	1 mL Serum or Plasma. Plasma (Na Heparin) and Plasma (EDTA) are acceptable. Avoid gel-separator tubes. Store and send frozen.	Ibuprofen 10.0 - 50.0 Units: µg/mL CF: µmol/L x 0.206 Ibuprofen 48.5 - 242.5 Units: µmol/L CF: µg/mL x 4.85
IGF Binding Protein 3	15D	2 mL Serum or Plasma (Hep). Gel separator tubes acceptable. Separate within 2 hours. Store and send frozen.	IGF Binding Protein 3 2m-5y: 0.7 - 5.2 6-8y: 1.3 - 6.5 9-11y: 1.8 - 8.4 12-13y: 2.7 - 9.5 14-16y: 3.3 - 10.0 17-19y: 2.9 - 8.7 20-39y: 2.9 - 7.8

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			40-49y: 3.3 - 6.7 50-70y: 3.0 - 6.9 > 70y: 2.2 - 5.7 Units: mg/L CF: - - -
Imipramine	2D	10 mL Urine (Random). Assay includes Desipramine.	Imipramine - Urine Not detected Units: µmol/L CF: mg/L x 3.57 Desipramine Not detected Units: µmol/L CF: mg/L x 3.75
Imipramine	7D	3 mL Serum or Plasma (EDTA). Avoid gel-separator tube and separate as soon as possible. Submit trough specimen (i.e. collected within 1 hour prior to next dose or at least 12 hours after last dose.) Assay includes Desipramine.	Imipramine (I) No therapeutic range for Imipramine alone Units: µmol/L CF: mg/L x 3.57 Desipramine (D) No therapeutic range for Desipramine alone Units: µmol/L CF: mg/L x 3.75 Combined (I + D) Therapeutic: 0.64 - 1.08 Toxic: > 1.80 Units: µmol/L CF: - - -
Immune Complexes	20D	1 mL Serum or Plasma (EDTA). Fasting sample preferred. Separate within 1 hour of collection. Submission of duplicate aliquots is recommended in case repeat analysis is required, avoiding multiple freeze/thaw. Samples should not be heat inactivated. Heat inactivation results in false positive results. Rheumatoid Factor may interfere with analysis. Indicate if the patient is positive for RF.	Immune Complexes Negative: <= 19 Units: RU/mL CF:
Immunoglobulin A	5D	1 mL Serum. Store and send frozen. Indicate date of birth.	IgA - Serum Adult 0.8 - 5.0 See [Immunoglobulins Data] table

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			for HSC pediatric ranges. Units: g/L CF: mg/dL x 0.0100
Immunoglobulin D (By IFE)	10D	1 mL Serum. Store and send frozen. Indicate date of birth. This test must be ordered with Protein Analysis: Immunofixation (billed separately).	Immunoglobulin D (by IFE) Absent Units: Qual. Test CF: - - -
Immunoglobulin D	15D	I mL Serum. Store and send frozen. Indicate date of birth. Submit separate aliquots if ordering other immunoglobulins as well.	IgD 8 - 132 IgD rises gradually to adult level by age 16 y. Units: mg/L CF: mg/dL x 10.0
Immunoglobulin E (By IFE)	10D	1 mL Serum. Store and send frozen. Indicate date of birth. This test must be ordered with Protein Analysis: Immunofixation (billed separately).	Immunoglobulin E (by IFE) Absent Units: Qual. Test CF: - - -
Immunoglobulin E	5D	1 mL Serum. Store and send frozen. Indicate date of birth. Submit separate aliquots if ordering other immunoglobulins as well.	IgE 3 - 397 {Age/sex related ranges not yet established} Units: µg/L CF: - - -
Immunoglobulin G Subclasses	5D	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.	IgG 1, 2, 3 and 4 Subclasses See [Immunoglobulins Data] table Units: g/L CF: mg/L x 0.0100
Immunoglobulin G1 Subclass	5D	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.	IgG1 Subclass See [Immunoglobulins Data] table Units: g/L CF: mg/L x 0.0100
Immunoglobulin G2 Subclass	5D	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.	IgG2 Subclass See [Immunoglobulins Data] table Units: g/L CF: mg/L x 0.0100

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Immunoglobulin G3 Subclass	5D	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.	IgG3 Subclass See [Immunoglobulins Data] table Units: g/L CF: mg/L x 0.0100
Immunoglobulin G4 Subclass	5D	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. Sep06. New TS (old-SJL) -same method Jan08} {Contact: Petra x 6072} {Fasting not necessary (Feb09)} {Min vol: 0.5 mL}	IgG4 Subclass See [Immunoglobulins Data] table Units: g/L CF: mg/L x 0.0100
Immunoglobulin G	5D	1 mL Serum. Store and send frozen. Indicate date of birth.	IgG - Serum Adult 6.1 - 16.2 See [Immunoglobulins Data] table for HSC pediatric ranges. Units: g/L CF: mg/dL x 0.0100
Immunoglobulin M	5D	1 mL Serum. Store and send frozen. Indicate date of birth.	IgM - Serum Adult 0.4 - 2.4 See [Immunoglobulin Data] table for HSC pediatric ranges. Units: g/L CF: mg/dL x 0.0100
Immunoglobulins: A, G and M	5D	1 mL Serum. Store and send frozen. Indicate date of birth. Immunoglobulins A, G and M may be ordered individually.	IgG Adult 6.1 - 16.2 See [Immunoglobulins Data] table for HSC pediatric ranges. Units: g/L CF: mg/dL x 0.0100 IgA Adult 0.8 - 5.0 See [Immunoglobulins Data] table for HSC pediatric ranges. Units: g/L CF: mg/dL x 0.0100 IgM Adult 0.4 - 2.4 See [Immunoglobulins Data] table for HSC pediatric ranges.

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Units: g/L CF: mg/dL x 0.0100
Immunoglobulins: Bence Jones Protein	5D	50 mL Urine (Random). Submit first morning voided specimen or aliquot of preservative-free 24h collection. Store and send frozen.	Free Kappa Chains (BJ) Absent Units: Qual. Test CF: - - - Free Lambda Chains (BJ) Absent Units: Qual. Test CF: - - - Interpretation Results interpreted on report. Units: Qual. Test CF: - - -
Immunoglobulins: Free Light Chains	5D	3.0 mL Serum. Store and send frozen. Hemolyzed specimens are unacceptable. Microbial contamination, lipemia and particulate matter in the specimen may interfere with analysis.	Free Kappa Chains 3.3 - 19.4 Units: mg/L CF: --- Free Lambda Chains 5.7 - 26.3 Units: mg/L CF: --- Kappa:Lambda Ratio 0.26 - 1.65 Units: Ratio CF: ---
Indinavir	10D	3 mL Plasma (Heparin). Avoid gel-separator tubes. Separate within 2h of collection and transfer to clean transfer vial. Store and send frozen. Preferred collection time is trough collected within 30 min prior to the next dose or 6-14h post dose (twice daily dosing), 12-26h post dose (once daily dosing). Peak collection time: 2-4h post dose. Indicate collection time on specimen and requisition. The 2 mL specimen is sufficient for analysis of multiple antiretroviral drugs with a reduced fee for multiple drugs on the same specimen. Minimum volume is 200 µL.	Indinavir 0.10 - 0.75 Units: mg/L CF:
Infliximab	14D	1 mL Serum or Plasma (EDTA). Gel-separator tubes are acceptable. Maintain at 4° up to 6 hours prior to separation. Submit two specimens (minimum 0.5 mL each). Store and send frozen. Infliximab Antibodies will be tested (and billed) when Infliximab is subtherapeutic (< 3 µg/mL).	Infliximab Trough 3.0 - 7.0 µg/mL is therapeutic. Units: µg/mL CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Anti-Infliximab < 2 Units: µg/mL CF: - - -
Inhaled Allergens	10D	1 mL Serum.	Inhaled Allergen Negative Units: Qual. Test CF: - - -
Inhibin A	6D	1 mL Serum. Gel-separator tube is acceptable. This Inhibin A service is offered as a tumour marker and is not offered for maternal screening. Store and send frozen.	Inhibin A Males: < 2.0 Females: <11y: < 4.7 11-17y: < 97.5 Premenopausal: < 97.5 Postmenopausal: < 2.1 Units: pg/mL CF:
Insulin Antibodies	15D	1 mL Serum.	Insulin Antibodies Less than 0.4 Units: kU/L CF: - - -
Insulin-Like Growth Factor 1	7D	1 mL Serum. Separate into 2 aliquots and freeze. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. Gel tubes are acceptable.	Insulin-Like Growth Factor 1 See [IgF1 Reference Ranges] table. Units: µg/L CF: ng/mL x 1.00
Insulin	2D	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 Fasting: 21.0 - 118.0 Units: pmol/L CF: µU/mL x 7.18
Interleukin 10	30D	1 mL Plasma (EDTA). Avoid gel-separator tubes. Separate as soon as possible. Store and send frozen. If the specimen thaws it is unsuitable for analysis. Analysis is also available on serum - see separate listing. Indicate clearly specimen type submitted. This test is for "Research Use Only".	Interleukin 10 - Plasma < 4.6 Units: pg/mL CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Interleukin 10	30D	1 mL Serum. Avoid gel-separator tube. Separate as soon as possible. Store and send frozen. If the specimen thaws it is unsuitable for analysis. Analysis is also available on plasma - see separate listing. Indicate clearly specimen type submitted. This test is for "Research Use Only".	Interleukin 10 - Serum 0 - 11.3 Units: pg/mL CF:
Interleukin 6	30D	1 mL Plasma (EDTA). Separate as soon as possible. Store and send frozen. If the specimen thaws it is unsuitable for analysis. Analysis is also available on serum - see separate listing. Specimen type must be indicated on requisition. This test uses a kit/reagent designated by the manufacturer as "for research use, not for clinical use."	Interleukin 6 - Plasma < 3.9 Units: pg/mL CF:
Interleukin 6	30D	1 mL Serum. Separate as soon as possible. Store and send frozen. If the specimen thaws it is unsuitable for analysis. Analysis is also available on plasma - see separate listing. Specimen type must be indicated on requisition. This test uses kit/reagent designated by the manufacturer as "for research use, not for clinical use."	Interleukin 6 - Serum 0 - 4.21 Units: pg/mL CF:
Interleukin-2 Receptor	20D	1 mL Serum or Plasma. Store and send frozen. Plasma EDTA, Na-Heparin, Li-Heparin, 3.2% Na Citrate are acceptable. Note: Cytokine levels may demonstrate diurnal variation. Recommend cytokine levels be determined at the same time of day for improved longitudinal comparison.	Interleukin-2 Receptor 406 - 1100 Units: U/mL CF: pg/mL x 0.113
Intralipid	3D	0.5 mL Serum or Plasma (sodium heparin).	Intralipid 0 - 0.90 Units: g/L CF: - - -
Intrinsic Factor Antibodies	30D	3 mL Serum. No Vitamin B12 injections within the last 24 hours. Store and send frozen. This assay measures Type 1 (Blocking) and Type 2 (Binding) Intrinsic Factor Antibodies.	Intrinsic Factor Antibodies Negative Units: Qual. test CF: - - -
Iodine	10D	13 mL Urine (Random). Collect and transfer in metal-free container. Provide date of birth and gender. Indicate "Random".	Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mmol/L CF: - - - Creatinine-U

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Age and gender related See [Trace Metals Ref. Values] table Units: mg/L CF: - - - Iodine-U 42 - 350 Units: µg/L CF: - - - Iodine-U 0.33 - 2.76 Units: µmol/L CF: - - - Iodine-U Age and gender related See [Trace Metals Ref. Values] table Units: µmol/mol cr CF: - - - Iodine-U Age and gender related See [Trace Metals Ref. Values] table Units: µg/g cr CF: - - -
Iodine	10D	13 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date, 24 hour volume and gender.	Creatinine-U24h Male: 3.5 - 25.0 Female: 2.6 - 20.0 Units: mmol/L CF: - - - Creatinine-U24h Male: 8.6 - 19.4 Female: 6.3 - 13.4 Units: mmol/d CF: - - - Iodine-U 42 - 350 Units: µg/L CF: - - - Iodine-U 0.33 - 2.76 Units: µmol/L CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Iodine-U24h 100 - 460 Units: µg/d CF: - - - Iodine-U24h 0.79 - 3.62 Units: µmol/d CF: - - -
Iodine	10D	3 mL Plasma (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Separate as soon as possible and transfer plasma to polypropylene vial.	Iodine - P 30.0 - 80.0 Units: µg/L CF: Iodine - P 0.24 - 0.63 Units: µmol/L CF:
Iodine	15D	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck - for long hair only use the first inch or so closest to the scalp. If unable to weigh the hair, submit 1 heaping teaspoon (10-20 mL). Submit in a plastic bag. The test should not be ordered if hair has been bleached, permed or dyed in the last two months. This metal is included in the Essential (Hair) Panel.	Iodine - H 0.10 - 1.20 Units: µg/g CF: Iodine - H 0.8 - 9.5 Units: nmol/g CF:
Iodine	10D	15 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date and 24-h volume. Avoid mineral supplements for 5 days.	Iodine - U 0.33 - 2.76 Units: µmol/L CF: µg/dL x 0.0788 Iodine - U24h 0.79 - 3.62 Units: µmol/d CF: µg/d x 0.0079
Iodine	10D	15 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Avoid mineral supplements for 5 days.	Iodine - U 0.33 - 2.76 Units: µmol/L CF: µg/dL x 0.0788
Iodine	10D	2 mL Plasma (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Avoid gel-separator tube. Separate as soon as possible and transfer plasma to polypropylene vial. Store and send cold.	Iodine - P 0.24 - 0.63 Units: µmol/L CF: µg/dL x 0.0788

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Iron	2D	1 mL Serum or Plasma (Heparin). Separate within 2 hours of collection.	Iron - Total Female: 7 - 30 Male: 9 - 32 Units: µmol/L CF: TIBC 42 - 72 Units: µmol/L CF: Saturation 0.20 - 0.50 Units: CF:
Iron	10D	13 mL Urine (Random). Collect and transfer in metal-free container. Provide date of birth and gender. Indicate "Random". Avoid mineral supplements for 5 days.	Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mmol/L CF: - - - Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mg/L CF: - - - Iron-U 1.0 - 13.3 Units: µg/L CF: - - - Iron-U 0.02 - 0.24 Units: µmol/L CF: - - - Iron-U Age and gender related See [Trace Metals Ref. Values] table Units: µmol/mol cr CF: - - - Iron-U Age and gender related See [Trace Metals Ref. Values] table

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Units: µg/g cr CF: - - -
Iron	10D	13 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date, 24 hour volume and gender. Avoid mineral supplements for 5 days.	Creatinine-U24h Male: 3.5 - 25.0 Female: 2.6 - 20.0 Units: mmol/L CF: - - - Creatinine-U24h Male: 8.6 - 19.4 Female: 6.3 - 13.4 Units: mmol/d CF: - - - Iron-U 1.0 - 13.3 Units: µg/L CF: - - - Iron-U 0.02 - 0.24 Units: µmol/L CF: - - - Iron-U24h 2.8 - 20.1 Units: µg/d CF: - - - Iron-U24h 0.05 - 0.36 Units: µmol/d CF: - - -
Iron	15D	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck - for long hair only use the first inch or so closest to the scalp. If unable to weigh the hair, submit 1 heaping teaspoon (10-20 mL). Submit in a plastic bag. The test should not be ordered if hair has been bleached, permed or dyed in the last two months. This metal is included in the Essential (Hair) Panel.	Iron - H 4.5 - 15.0 Units: µg/g CF: Iron - H 0.08 - 0.27 Units: µmol/g CF:
Iron	15D	0.001 g Tissue. Samples for analysis may include paraffin blocks or frozen tissue in saline or formalin. Needle biopsies are also acceptable in formalin. If fixed in formalin, please send an extra tube of formalin. Store and send frozen.	Source Units: CF: Iron - Tissue

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Not Available Units: µg/g CF: Iron - Tissue Not Available Units: µmol/g CF:
Iron	15D	0.001 g Liver. Samples for analysis may include paraffin blocks or frozen tissue in saline or formalin. Needle biopsies are also acceptable in formalin. If fixed in formalin, please send an extra tube of formalin. Store and send frozen.	Iron - Liver 200.0 - 2000.0 Units: µg/g CF: Iron - Liver 3.6 - 35.8 Units: µmol/g CF:
Iron	10D	15 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date and 24-h volume. Avoid mineral supplements for 5 days.	Iron - U 0.02 - 0.24 Units: µmol/L CF: µg/dL x 0.179 Iron - U24h 0.05 - 0.36 Units: µmol/d CF: µg/d x 0.0179
Iron	10D	15 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Avoid mineral supplements for 5 days.	Iron - U 0.02 - 0.24 Units: µmol/L CF: µg/dL x 0.179
Islet Cell Antibody	7D	2 mL Serum. Store and send cold. If screen is Positive, a Titer will be performed.	Islet Cell Antibody Screen Negative Units: CF: Islet Cell Antibody Titer < 1.25 Units: JDF Units CF:
Itraconazole	6D	1 mL Serum. Collect immediately before next scheduled dose. Gel-separator tube is not acceptable. Store and send frozen.	Itraconazole (Trough) > 0.5 (localized infection) > 1.0 (systemic infection) Units: µg/mL CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Hydroxyitraconazole No therapeutic range established. Activity and Serum concentrations are similar to parent drug. Units: µg/mL CF:
JC/BK Virus PCR	9D	1 mL CSF. Collect specimen, freeze and ship on dry ice. Indicate on requisition if patient is immunocompromised.	JC/BK Virus DNA NEGATIVE Units: CF:
Johnson Grass (g10), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Johnson Grass (g10), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -
Ketones	2D	2 mL Serum or Plasma (Fluoride).	Ketones - Serum/Plasma Negative Units: mmol/L CF: mg/L x 0.0172
Ketones	2D	1 mL Fluid. Indicate source of fluid.	Ketones - Fluid Not Available Units: mmol/L CF: - - -
Kochia scoparia (w17), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Kochia scoparia (w17), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -
L-Lactic Acid	1D	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 - Plasma 0.5 - 2.0 Units: mmol/L CF: mg/dL x 0.111
L-Lactic Acid	1D	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 a clean transfer vial and freeze immediately. Store and send frozen.	L-Lactic Acid - Fluid Not available for fluid. Units: mmol/L CF: mg/dL x 0.111
Lacosamide	6D	1 mL Serum. Collect immediately before next scheduled dose or at least 12 hours after last dose. Collection in gel-separator tube is acceptable. Store and send frozen.	Lacosamide 1.0 - 10.0 Toxic ranges not established Units: µg/mL CF:
Lactate Dehydrogenase (LD)	2D	1 mL Fluid. Store and send cold. Indicate fluid source.	Lactate Dehydrogenase - Fluid Not Available Units: U/L CF:
Lactate Dehydrogenase (LDH)	2D	1 mL CSF. Store and send cold. Indicate fluid source.	Lactate Dehydrogenase - CSF 100 - 225 Units: U/L CF:
Lamb's quarters (w10), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Lamb's quarters (w10), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Lamotrigine	3D	2 mL Serum or Plasma (Hep or Cit). Collect trough level prior to next dose administration.	Lamotrigine 4 - 39 Units: µmol/L CF: mg/mL x 3900
LDH Isoenzymes	7D	2 mL Serum. Gel-separator tube preferred. Hemolyzed specimens are unacceptable due to high concentration of LD in erythrocytes. Prepare two 1 mL aliquots in transfer vials. Date of birth must be provided. Store and send at controlled ambient temperature. Freezing or prolonged storage at 4°C (>12 hours) causes LD-V to be lost.	Lactate Dehydrogenase 1 - 30 days: 135 - 750 31 days - 11 months: 180 - 435 1 - 3y: 160 - 370 4 - 6y: 145 - 345 7 - 9y: 143 - 290 10 - 12y: 120 - 293 13 - 15y: 110 - 283 16 - 17y: 105 - 233 > = 18y: 122 - 222 Units: U/L CF: LD Iso - I (Heart) 17.5 - 28.3 Units: % CF: LD Iso - II 30.4 - 36.4 Units: % CF: LD Iso - III 19.2 - 24.8 Units: % CF: LD Iso - IV 9.6 - 15.6 Units: % CF: LD Iso - V (Liver) 5.5 - 12.7 Units: % CF:
LDL Particle Concentration	7D	1 mL Plasma (EDTA). Other types of plasma are not acceptable. Avoid gel-separator tubes. Ship refrigerated.	LDL Particle Concentration < 1300

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Units: nmol/L CF:
Lead	10D	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. MSU containers may be contaminated and are not recommended.	Lead - Nail 0.00 - 4.75 Units: µg/g CF: Lead - Nail 0.0 - 22.9 Units: nmol/g CF:
Lead	10D	1 mL Fluid. Indicate source. Collect and transfer in metal-free vial.	Lead - Fluid Not available for fluid. Units: µg/L CF: - - - Lead - Fluid Not available for fluid. Units: µmol/L CF:
Lead	10D	13 mL Urine (Random). Collect and transfer in metal-free container. Provide date of birth and gender. Indicate "Random".	Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mmol/L CF: - - - Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mg/L CF: - - - Lead-U 0.0 - 3.0 Units: µg/L CF: - - - Lead-U 0.0 - 14.5 Units: nmol/L CF: - - - Lead-U Age and gender related See [Trace Metals Ref. Values] table Units: µmol/mol cr CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Lead-U Age and gender related See [Trace Metals Ref. Values] table Units: µg/g cr CF: - - -
Lead	10D	13 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date, 24 hour volume and gender.	Creatinine-U24h Male: 3.5 - 25.0 Female: 2.6 - 20.0 Units: mmol/L CF: - - - Creatinine-U24h Male: 8.6 - 19.4 Female: 6.3 - 13.4 Units: mmol/d CF: - - - Lead-U 0.0 - 3.0 Units: µg/L CF: - - - Lead-U 0.0 - 14.5 Units: nmol/L CF: - - - Lead-U24h 0.0 - 4.0 Units: µg/d CF: - - - Lead-U24h 0.0 - 19.3 Units: nmol/d CF: - - -
Lead	10D	3 mL Erythrocyte. Collect K2-EDTA blood in contaminant-free tube. Separate and transfer erythrocytes to a polypropylene transfer vial. Store and send frozen - See Collection instructions link above.	Lead - E 0.0 - 36.8 Units: µg/L CF: Lead - E 0.00 - 0.18 Units: µmol/L CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Lead	10D	6 mL Whole Blood (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Store and send cold.	Lead - WB All Ages: 0.0 - 20.0 Alert Value: 0 - 16y : > 25.0 Action Value: 0 - 16y: > 100.0 >= 17y: > 207.0 Units: µg/L CF: Lead - WB All Ages: 0.00 - 0.10 Alert Value: 0 - 16y : > 0.12 Action Value: 0 - 16y: > 0.48 >= 17y: > 1.00 Units: µmol/L CF:
Lead	15D	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck - for long hair only use the first inch or so closest to the scalp. If unable to weigh the hair, submit 1 heaping teaspoon (10-20 mL). Submit in a plastic bag. The test should not be ordered if hair has been bleached, permed or dyed in the last two months. This metal is included in the Toxic (Hair) Panel.	Lead - H 0.000 - 1.500 Units: µg/g CF: Lead - H 0.00 - 7.24 Units: nmol/g CF:
Lead	15D	0.001 g Tissue. Samples for analysis may include paraffin blocks or frozen tissue in saline or formalin. Needle biopsies are also acceptable in formalin. If fixed in formalin, please send an extra tube of formalin. Store and send frozen.	Source Units: CF: Lead - Tissue Not Available Units: µg/g CF: Lead - Tissue Not Available Units: nmol/g CF:
Lead	15D	0.001 g Liver. Samples for analysis may include paraffin blocks or frozen tissue in saline or formalin. Needle biopsies are also acceptable in	Lead - Liver 0.05 - 0.35 Units: µg/g CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
		formalin. If fixed in formalin, please send an extra tube of formalin. Store and send frozen.	Lead - Liver 0.24 - 1.69 Units: nmol/g CF:
Leflunomide Metabolite	10D	1 mL Serum. Collect serum in a plain red-top tube. Avoid gel-separator tube. Na-Heparin or Lithium-Heparin plasma also acceptable.	Leflunomide Metabolite See Report Units: ng/mL CF:
Lepidoglyphus Destructor (d71), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Lepidoglyphus Dest. (d71), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -
Leptin	10D	1 mL Serum.	Leptin Adult Lean Subjects (18-71y) with BMI range of 18 - 25: Males: 0.3 - 13.4, Females: 4.7 - 23.7 Adult Subjects (19-60y) with BMI range of 25 - 30: Males: 1.8 - 19.9, Females: 8.0 - 38.9 Pediatric Reference Ranges: 5-9.9y: 0.6 - 16.8 10-13.9y: 1.4 - 16.5 14-17.9y: 0.6 - 24.9 Units: ng/mL CF:
Levetiracetam	21D	1 mL Serum or Plasma. Collect trough specimen prior to next dose. Avoid gel separator tubes. Plasma (EDTA or heparin) or serum is acceptable.	Levetiracetam Trough, Pre-Dose: 10.0 - 45.0 Units: µg/mL CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Linden (t208), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Linden (t208), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -
Lipase	2D	1 mL Fluid. Indicate source of fluid clearly on requisition. Test not validated for body fluids. Interpret results with caution.	Lipase - Fluid Not available for fluid. Units: U/L CF: - - -
Lipase	2D	1 mL Plasma (Heparin). Avoid collection tubes with glycerol-lubricated stoppers.	Lipase - Plasma 0 - 18y: 4 - 39 19y and Over: < 79 Units: U/L CF: - - -
Lipoprotein a	20D	1 mL Serum or plasma (EDTA). Samples must be separated within 4 h of collection. Store and send frozen.	Lipoprotein a < 30 >= 30 associated with 1.7 fold risk of cardiovascular disease Units: mg/dL CF: - - -
Lipoprotein Fract.: Ultracentrif.	10D	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	Lipoprotein Fractionation See [Lipid Data Table] for interpretation guidelines. Results are interpreted on each patient report. Units: See report CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
		ultracentrifugal supernatant and infranatant and interpreted Lipoprotein Phenotype.	
Lithium	10D	15 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date and 24-h volume. Avoid mineral supplements for 5 days.	Lithium - U Not Available Units: mmol/L CF: mg/L x 0.1441 Lithium - U24h Not Available Units: mmol/d CF: mg/d x 0.1441
Lithium	10D	15 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Avoid mineral supplements for 5 days.	Lithium - U Not Available Units: mmol/L CF: mg/L x 0.1441
Lithium	10D	4 mL Whole Blood (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Do not open tube or separate. Store and send cold.	Lithium - WB Not Available Units: mmol/L CF:
Lithium	1D	1 mL Serum. Collect at least 12 h after last dose was administered.	Lithium Therapeutic: 0.50 - 1.50 Toxic: Greater than 2.00 Units: mmol/L CF: mEq/L x 1.00
Liver Kidney Microsomal Antibodies	10D	2 mL Serum. Grossly hemolyzed, lipemic or microbially contaminated specimens may interfere with analysis.	Liver Kidney Micros. Antibody Negative Units: Titre CF: - - -
Lopinavir	10D	3 mL Plasma (Heparin). Avoid gel-separator tubes. Separate within 2h of collection and transfer to clean transfer vial. Store and send frozen. Sample must be received at HICL Mon-Wed. Preferred collection time is trough collected within 30 min prior to the next dose or >= 10h post dose. Peak collection time: 4 - 6 hours post dose. Indicate collection time on specimen and requisition. The 2 mL specimen is sufficient for analysis of multiple antiretroviral drugs with a reduced fee for multiple drugs on the same specimen. Minimum volume (for children) is 1 mL plasma. If ordering Kaletra, both Ritonavir & Lopinavir will be tested & billed separately.	Lopinavir 1.0 - 5.0 Units: mg/L CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Lupin (Weed) (w207), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Lupin (Weed) (w207), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -
Luteinizing Hormone	2D	1 mL Serum or Plasma (Hep. or EDTA).	Luteinizing Hormone Male: 1 - 8 Female: Follicular: 1 - 12 Mid-cycle: 17 - 77 Luteal: 0 - 15 Post menopausal: 11 - 40 Oral Contraceptives: 0 - 8 Units: IU/L CF: - - -
Lysozyme Egg nGal d4(k208), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Lysozyme Egg nGal d4(k208),IgE < 0.35 Interpretive Comment: Risk for clinical reaction to raw or slightly heated egg. Lysozyme is used as an additive in certain pharmaceutical products and foods. Units: KU/L CF: - - -
Macroamylase	7D	2 mL Serum. Store and send frozen.	Macroamylase Not Detected Units: - - - CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Macroprolactin	7D	2 mL Serum. Separate into two aliquots. Store and send frozen. Assay includes Prolactin.	Prolactin Female: < 25 Male: < 18 Units: ug/L CF: - - - Macroprolactin Normal: < 0.200 Borderline: 0.200 - 0.400 Abnormal: > 0.400 Units: Fraction CF: - - -
Magnesium	2D	50 mL Urine (Random).	Magnesium Not Available Units: mmol/L CF:
Magnesium	2D	50 mL Urine (24h). Provide collection date and volume (in litres).	Magnesium - Urine 3.0 - 5.0 Units: mmol/d CF: mEq/d x 0.500
Magnesium	10D	13 mL Urine (Random). Collect and transfer in metal-free container. Provide date of birth and gender. Indicate "Random". Avoid mineral supplements for 5 days.	Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mmol/L CF: - - - Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mg/L CF: - - - Magnesium-U 15.0 - 120.0 Units: mg/L CF: - - - Magnesium-U 0.8 - 4.3 Units: mmol/L CF: - - - Magnesium-U Age and gender related

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			See [Trace Metals Ref. Values] table Units: mmol/mol cr CF: - - - Magnesium-U Age and gender related See [Trace Metals Ref. Values] table Units: mg/g cr CF: - - -
Magnesium	10D	13 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date, 24 hour volume and gender. Avoid mineral supplements for 5 days.	Creatinine-U24h Male: 3.5 - 25.0 Female: 2.6 - 20.0 Units: mmol/L CF: - - - Creatinine-U24h Male: 8.6 - 19.4 Female: 6.3 - 13.4 Units: mmol/d CF: - - - Magnesium-U 15.0 - 120.0 Units: mg/L CF: - - - Magnesium-U 0.8 - 4.3 Units: mmol/L CF: - - - Magnesium-U24h 24.3 - 170.2 Units: mg/d CF: - - - Magnesium-U24h 1.0 - 7.0 Units: mmol/d CF: - - -
Magnesium	10D	3 mL Erythrocyte. Collect K2-EDTA blood in contaminant-free tube. Separate and transfer erythrocytes to a polypropylene transfer vial. Store and send frozen - See Collection instructions link above.	Magnesium - E 40.1 - 61.2 Units: mg/L CF: Magnesium - E 1.65 - 2.52

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Units: mmol/L CF:
Magnesium	15D	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck - for long hair only use the first inch or so closest to the scalp. If unable to weigh the hair, submit 1 heaping teaspoon (10-20 mL). Submit in a plastic bag. The test should not be ordered if hair has been bleached, permed or dyed in the last two months. This metal is included in the Essential (Hair) Panel.	Magnesium - H 20.0 - 100.0 Units: µg/g CF: Magnesium - H 0.82 - 4.11 Units: µmol/g CF:
Magnesium	15D	0.001 g Tissue. Samples for analysis may include paraffin blocks or frozen tissue in saline or formalin. Needle biopsies are also acceptable in formalin. If fixed in formalin, please send an extra tube of formalin. Store and send frozen.	Source Units: CF: Magnesium - Tissue Not Available Units: µg/g CF: Magnesium - Tissue Not Available Units: µmol/g CF:
Magnesium	15D	0.001 g Liver. Samples for analysis may include paraffin blocks or frozen tissue in saline or formalin. Needle biopsies are also acceptable in formalin. If fixed in formalin, please send an extra tube of formalin. Store and send frozen.	Magnesium - Liver 236.00 - 735.00 Units: µg/g CF: Magnesium - Liver 9.7 - 30.2 Units: µmol/g CF:
Magnesium	10D	15 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date and 24-h volume. Avoid mineral supplements for 5 days.	Magnesium - U 0.6 - 4.3 Units: mmol/L CF: mg/L x 0.0411 Magnesium - U24h 1.0 - 7.0 Units: mmol/d CF: mg/d x 0.0411
Magnesium	10D	15 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Avoid mineral supplements for 5 days.	Magnesium - U 0.6 - 4.3 Units: mmol/L CF: mg/L x 0.0411

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Magnesium	10D	2 mL Erythrocyte. Collect K2-EDTA blood in contaminant-free tube. Separate and transfer erythrocytes to a polypropylene transfer vial. Store and send frozen - See Collection Instructions link above.	Magnesium - E 1.65 - 2.52 Units: mmol/L CF: mg/L x 0.0411
Manganese	10D	13 mL Urine (Random). Collect and transfer in metal-free container. Provide date of birth and gender. Indicate "Random". Avoid mineral supplements for 5 days.	Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mmol/L CF: - - - Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mg/L CF: - - - Manganese-U 0.070 - 0.500 Units: µg/L CF: - - - Manganese-U 1.3 - 9.1 Units: nmol/L CF: - - - Manganese-U Age and gender related See [Trace Metals Ref. Values] table Units: µmol/mol cr CF: - - - Manganese-U Age and gender related See [Trace Metals Ref. Values] table Units: µg/g cr CF: - - -
Manganese	10D	13 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date, 24 hour volume and gender. Avoid mineral supplements for 5 days.	Creatinine-U24h Male: 3.5 - 25.0 Female: 2.6 - 20.0 Units: mmol/L CF: - - - Creatinine-U24h

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Male: 8.6 - 19.4 Female: 6.3 - 13.4 Units: mmol/d CF: - - - Manganese-U 0.070 - 0.500 Units: µg/L CF: - - - Manganese-U 1.3 - 9.1 Units: nmol/L CF: - - - Manganese-U24h 0.099 - 0.802 Units: µg/d CF: - - - Manganese-U24h 1.8 - 14.6 Units: nmol/d CF: - - -
Manganese	10D	3 mL Plasma (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Separate as soon as possible and transfer plasma to polypropylene vial. Results may be falsely elevated if the specimen is not separated within 30 minutes and/or hemolysis is present.	Manganese - P 0 - 12m: 0.40 - 2.76 1 - 5y: 0.82 - 3.68 6 - 9y: 0.29 - 2.24 10 - 13y: 0.42 - 2.00 >= 14y: 0.44 - 1.14 Units: µg/L CF: Manganese - P 0 - 12m: 7.3 - 50.2 1 - 5y: 14.9 - 67.0 6 - 9y: 5.3 - 40.8 10 - 13y: 7.6 - 36.4 >= 14y: 8.0 - 20.7 Units: nmol/L CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Manganese	10D	3 mL Erythrocyte. Collect K2-EDTA blood in contaminant-free tube. Separate and transfer erythrocytes to a polypropylene transfer vial. Store and send frozen - See Collection instructions link above.	Manganese - E 9.4 - 38.3 Units: µg/L CF: Manganese - E 171 - 697 Units: nmol/L CF:
Manganese	10D	6 mL Whole Blood (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Store and send cold.	Manganese - WB 5.4 - 19.5 Units: µg/L CF: Manganese - WB 98 - 355 Units: nmol/L CF:
Manganese	15D	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck - for long hair only use the first inch or so closest to the scalp. If unable to weigh the hair, submit 1 heaping teaspoon (10-20 mL). Submit in a plastic bag. The test should not be ordered if hair has been bleached, permed or dyed in the last two months. This metal is included in the Essential (Hair) Panel.	Manganese - H 0.080 - 0.500 Units: µg/g CF: Manganese - H 1.46 - 9.10 Units: nmol/g CF:
Manganese	10D	15 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date and 24-h volume. Avoid mineral supplements for 5 days.	Manganese - U 1.3 - 9.1 Units: nmol/L CF: µg/L x 18.2 Manganese - U24h 1.8 - 14.6 Units: nmol/d CF: µg/d x 18.2
Manganese	10D	15 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Avoid mineral supplements for 5 days.	Manganese - U 1.3 - 9.1 Units: nmol/L CF: µg/L x 18.2
Manganese	10D	2 mL Plasma (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Avoid gel-separator tube. Separate as soon as possible and transfer plasma to polypropylene vial. Store and send cold.	Manganese - P 0-12m: 7.3 - 50.2 1-5y: 14.9 - 67.0

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			6-9y: 5.3 - 40.8 10-13y: 7.6 - 36.4 >=14y: 8.0 - 20.7 Units: nmol/L CF: µg/L x 18.2
Manganese	10D	2 mL Erythrocyte. Collect K2-EDTA blood in contaminant-free tube. Separate and transfer erythrocytes to a polypropylene transfer vial. Store and send frozen - See Collection Instructions link above.	Manganese - E 171 - 697 Units: nmol/L CF:
Manganese	10D	4 mL Whole Blood (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Do not open tube or separate. Store and send cold.	Manganese - WB 98 - 355 Units: nmol/L CF: µg/L x 18.2
Maple (t11), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Maple (t11), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -
Maprotiline	2D	10 mL Urine (Random).	Maprotiline - Urine Not detected Units: µmol/L CF: mg/L x 3.60
Maprotiline	5D	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.	Maprotiline - Serum/Plasma Therapeutic: 0.18 - 0.72 Toxic: Greater than 2.90 Units: µmol/L CF: mg/L x 3.60
Maraviroc	10D	3 mL Plasma (Heparin). Avoid gel-separator tubes. Separate within 2h of collection and transfer to clean transfer vial. Store and send frozen. Preferred collection time is trough collected within 30 min prior to the next dose or 6-14h post dose (twice daily dosing), 12-26h post dose (once daily	Maraviroc >0.50 Units: mg/L CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
		dosing). Indicate collection time on specimen and requisition. The 2 mL specimen is sufficient for analysis of multiple antiretroviral drugs with a reduced fee for multiple drugs on the same specimen. Minimum volume is 200 µL.	
Maternal Serum Screen		1.0 mL Serum. Specimen must be accompanied by required clinical information - contact Client Care at (416) 422-3000 ext. 300 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.	Maternal serum screen Results interpreted on report. Units: See Report CF: - - -
Meadow Fescue (g4), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Meadow Fescue (g4), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -
Meadow Grass (g8), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Meadow Grass (g8), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Meat Mix (fx23), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to an allergen mix f26 Pork, f27 Beef, f83 Chicken meat, f284 Turkey meat). This assay provides a single qualitative result only. It does not provide information on the amount of IgE specific for any of the component allergens within the mix panel. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Meat Mix (fx23), IgE Negative Units: KU/L CF: - - -
Melatonin	25D	1.5 mL Plasma (EDTA). Separate plasma within 30 minutes of collection. Freeze immediately and protect specimen from light. Specimen must be labelled inside and outside light-protecting wrap. Store and send frozen.	Melatonin <10y: Not Established 10-20y = 31.3 - 175.4 21-65y = 11.0 - 135.4 >= 66y = 11.0 - 34.4 Units: pg/mL CF:
Mercury	10D	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 - Nail 0.0 - 0.9 Units: µg/g CF: Mercury - Nail 0.00 - 4.49 Units: nmol/g CF:
Mercury	10D	13 mL Urine (Random). Collect and transfer in metal-free container. Provide date of birth and gender. Indicate "Random". Avoid seafood consumption for five days prior to collection.	Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mmol/L CF: - - - Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mg/L CF: - - - Mercury-U 0.0 - 3.00 Units: µg/L CF: - - - Mercury-U

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			0.0 - 15.0 Units: nmol/L CF: - - - Mercury-U Age and gender related See [Trace Metals Ref. Values] table Units: µmol/mol cr CF: - - - Mercury-U Age and gender related See [Trace Metals Ref. Values] table Units: µg/g cr CF: - - -
Mercury	10D	13 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date, 24 hour volume and gender. Avoid seafood consumption for five days prior to collection.	Creatinine-U24h Male: 3.5 - 25.0 Female: 2.6 - 20.0 Units: mmol/L CF: - - - Creatinine-U24h Male: 8.6 - 19.4 Female: 6.3 - 13.4 Units: mmol/d CF: - - - Mercury-U 0.0 - 3.00 Units: µg/L CF: - - - Mercury-U 0.0 - 15.0 Units: nmol/L CF: - - - Mercury-U24h 0.0 - 4.0 Units: µg/d CF: - - - Mercury-U24h 0.0 - 20.0 Units: nmol/d CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Mercury	10D	3 mL Erythrocyte. Collect K2-EDTA blood in contaminant-free tube. Separate and transfer erythrocytes to a polypropylene transfer vial. Store and send frozen - See Collection instructions link above.	Mercury - E 0.00 - 6.25 Units: µg/L CF: Mercury - E 0.0 - 31.2 Units: nmol/L CF:
Mercury	10D	6 mL Whole Blood (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Store and send cold.	Mercury - WB 0 - 16y: 0.00 - 1.72 >= 17y: 0.00 - 3.70 Alert Value: All age ranges: > 10 Action Value: All age ranges: > 40 Units: µg/L CF: Mercury - WB 0 - 16y: 0.0 - 8.6 >= 17y: 0.0 - 18.4 Alert Value: All age ranges: > 50 Action Value: All age ranges: > 200 Units: nmol/L CF:
Mercury	15D	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck - for long hair only use the first inch or so closest to the scalp. If unable to weigh the hair, submit 1 heaping teaspoon (10-20 mL). Submit in a plastic bag. The test should not be ordered if hair has been bleached, permed or dyed in the last two months. This metal is included in the Toxic (Hair) Panel.	Mercury - H 0.000 - 1.000 Units: µg/g CF: Mercury - H 0.00 - 4.98 Units: nmol/g CF:
Mercury	10D	15 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date and 24-h volume. Avoid mineral supplements for 5 days.	Mercury - U 0.0 - 15.0 Units: nmol/L CF: µg/L x 4.99 Mercury - U24h 0.0 - 20.0 Units: nmol/d CF: µg/d x 4.99

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Mercury	10D	15 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Avoid mineral supplements for 5 days.	Mercury - U 0.0 - 15.0 Units: nmol/L CF: µg/L x 4.99
Mercury	10D	2 mL Erythrocyte. Collect K2-EDTA blood in contaminant-free tube. Separate and transfer erythrocytes to a polypropylene transfer vial. Store and send frozen - See Collection Instructions link above.	Mercury - E 0.0 - 31.2 Units: nmol/L CF: µg/L x 4.99
Mercury	10D	4 mL Whole Blood (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Do not open tube or separate. Store and send cold.	Mercury - WB 0 - 10 Alert Value: >50 Action Value: >200 Units: nmol/L CF: µg/L x 4.99
Metanephrines	10D	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.	Normetanephrine < = 0.89 Units: nmol/L CF: - - - Metanephrine < = 0.49 Units: nmol/L CF: - - -
Metanephrines	10D	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.	Metanephrines - Total Adult: < 5.5 Units: µmol/d CF: mg/d x 5.07 Total Metanephrine/Crea. Ratio Adult: < 0.60 Units: µmol/mmol Cr CF: µg/mg x 0.574 Normetanephrine 0.40 - 4.10 Units: µmol/d CF: - - - Normetanephrine/Cr. Ratio 0.05 - 0.45 Units: µmol/mmol Cr. CF: - - - Metanephrine

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			0.15 - 1.50 Units: µmol/d CF: - - - Metanephrine/Cr. Ratio 0.01 - 0.13 Units: µmol/mmol Cr. CF: - - -
Methadone	10D	1 mL Fluid. Store and send frozen. Indicate fluid source or composition.	Methadone - Fluid Not available Units: mg/L CF: - - - Methadone - Fluid Not available Units: mg/volume CF: - - -
Methemoglobin	1D	5 mL Whole Blood (Heparin). EDTA specimen not acceptable. Specimen must be received at ICL within 48 hrs of collection. Do not freeze.	Methemoglobin Less than 0.020 Units: Frac Tot Hb CF: % x 0.0100
Methotrexate	1D	2 mL Serum. Avoid gel-separator tubes. 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.	Methotrexate At high dose - Toxic over 5.0 after 24 h Toxic over 0.5 after 48 h Toxic over 0.05 after 72 h At low dose - Toxic over 0.02 after 1 w Units: µmol/L CF: ng/mL x 0.00220
Methylhippuric Acid	25D	20 mL Urine (Random). Collect at end of shift.	Creatinine 6.0 - 14 Units: mmol/L CF: Methylhippuric acid 0 - 20 Units: mmol/mol cr. CF: Methylhippuric acid 0 - 260

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Units: µmol/L CF:
Methylmalonic Acid	40D	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. {Fee corrected to $95 Nov 2010 Update)	Methylmalonic Acid Normal Units: Qual. test CF: - - -
Methylmalonic Acid	15D	3 mL Plasma (EDTA). Separate plasma within 6 hours of collection. Store and send frozen.	Methylmalonic Acid 0.10 - 0.40 Values up to 2.0 µmol/L are not uncommon in patients with renal failure or systemic disease without evidence of Vitamin B12 deficiency. Units: µmol/L CF: mg/dL x 59.2
Mitotane	20D	1 mL Serum or Plasma. Avoid gel-separator tubes. Plasma (EDTA or Heparin) is acceptable. Store and send frozen.	Mitotane 14 - 20 Toxic: > 20 Units: µg/mL CF:
Mix (ex2), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to an allergen mix (e1 Cat Dander, e5 Dog Dander, e6 Guinea pig epithelium, e87 Rat, e88 Mouse). This assay provides a single qualitative result only. It does not provide information on the amount of IgE specific for any of the component allergens within the mix panel. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Mix (ex2), IgE Negative Units: KU/L CF: - - -
Molybdenum	10D	13 mL Urine (Random). Collect and transfer in metal-free container. Provide date of birth and gender. Indicate "Random". Avoid mineral supplements for 5 days.	Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mmol/L CF: - - - Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mg/L CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Molybdenum-U 13.0 - 120.0 Units: µg/L CF: - - - Molybdenum-U 0.14 - 1.25 Units: µmol/L CF: - - - Molybdenum-U Age and gender related See [Trace Metals Ref. Values] table Units: µmol/mol cr CF: - - - Molybdenum-U Age and gender related See [Trace Metals Ref. Values] table Units: µg/g cr CF: - - -
Molybdenum	10D	13 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date, 24 hour volume and gender. Avoid mineral supplements for 5 days.	Creatinine-U24h Male: 3.5 - 25.0 Female: 2.6 - 20.0 Units: mmol/L CF: - - - Creatinine-U24h Male: 8.6 - 19.4 Female: 6.3 - 13.4 Units: mmol/d CF: - - - Molybdenum-U 13.0 - 120.0 Units: µg/L CF: - - - Molybdenum-U 0.14 - 1.25 Units: µmol/L CF: - - - Molybdenum-U24h 19.2 - 182.3 Units: µg/d CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Molybdenum-U24h 0.20 - 1.90 Units: µmol/d CF: - - -
Molybdenum	10D	3 mL Plasma (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Separate as soon as possible and transfer plasma to polypropylene vial.	Molybdenum - P 0.5 - 2.1 Units: µg/L CF: Molybdenum - P 5.2 - 21.9 Units: nmol/L CF:
Molybdenum	10D	3 mL Erythrocyte. Collect K2-EDTA blood in contaminant-free tube. Separate and transfer erythrocytes to a polypropylene transfer vial. Store and send frozen - See Collection instructions link above.	Molybdenum - E 0.2 - 1.0 Units: µg/L CF: Molybdenum - E 2.1 - 10.4 Units: nmol/L CF:
Molybdenum	10D	6 mL Whole Blood (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Store and send cold.	Molybdenum - WB 0.4 - 1.6 Units: µg/L CF: Molybdenum - WB 4.2 - 16.7 Units: nmol/L CF:
Molybdenum	15D	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck - for long hair only use the first inch or so closest to the scalp. If unable to weigh the hair, submit 1 heaping teaspoon (10-20 mL). Submit in a plastic bag. The test should not be ordered if hair has been bleached, permed or dyed in the last two months. This metal is included in the Essential (Hair) Panel.	Molybdenum - H 0.025 - 0.100 Units: µg/g CF: Molybdenum - H 0.26 - 1.04 Units: nmol/g CF:
Molybdenum	10D	15 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date and 24-h volume. Avoid mineral supplements for 5 days.	Molybdenum - U 0.20 - 1.80 Units: µmol/L CF: µg/L x 0.0104

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Molybdenum -U24h 0.20 - 1.80 Units: µmol/d CF: µg/d x 0.0104
Molybdenum	10D	15 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Avoid mineral supplements for 5 days.	Molybdenum - U 0.20 - 1.80 Units: µmol/L CF: µg/L x 0.0104
Molybdenum	10D	2 mL Plasma (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Avoid gel-separator tube. Separate as soon as possible and transfer plasma to polypropylene vial. Store and send cold.	Molybdenum - P 5.2 - 21.9 Units: nmol/L CF: ng/L x 0.0104
Molybdenum	10D	2 mL Erythrocyte. Collect K2-EDTA blood in contaminant-free tube. Separate and transfer erythrocytes to a polypropylene transfer vial. Store and send frozen - See Collection Instructions link above.	Molybdenum - E 2.1 - 10.4 Units: nmol/L CF: ng/L x 0.0104
Molybdenum	10D	4 mL Whole Blood (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Do not open tube or separate. Store and send cold.	Molybdenum - WB 4.2 - 16.7 Units: nmol/L CF: ng/L x 0.0104
MONO Spot	2D	1 mL Separated serum (Red-top). Collect specimen, separate serum and transport cold.	MONO Spot NEGATIVE Units: CF:
Mould Mix (Mx2), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to an allergen mix (Penicillium Chrysogenum,Cladosporium Herbarum, Aspergillus Fumigatus, Candida Albicans, Alternaria Alternata, Setomelanomma Rostrata) This assay provides a single qualitative result only. It does not provide information on the amount of IgE specific for any of the component allergens within the mix. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Mould Mix (Mx2), IgE Negative Units: KU/L CF: - - -
Mouse Urine Protein (e72), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Mouse Urine Protein (e72), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -
Mucopolysaccharides: Identification	21D	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: TLC Interpreted on Report Units: CF:
Mucopolysaccharides: Screen	10D	1 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.	Mucopolysaccharides: Screen Negative Units: Qual. Test CF: ---
Muscle-Specific Kinase Autoantibody	12D	2 mL Serum. Gel-separator tubes are acceptable. Store and send cold or frozen	MuSK Autoantibody, serum 0.00 - 0.02 Units: nmol/L CF:
Mycophenolic Acid	5D	1.5 mL Plasma (EDTA). Provide ordering physician's name and transplant site. Specimens should be maintained at 4° or store and send frozen.	Mycophenolic acid 1.00 - 3.50 Units: mg/L CF: - - -
Myelin-Associated Glycoprotein IgM	10D	1 mL Serum. Store and send frozen.	Myelin-Assoc. Glycoprotein IgM Normal: < 1:1600 Moderately Elevated: 1:1600 - 1:3200 Highly Elevated: > 1:6400 Units: Titer CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Myoglobin	2D	2 mL Serum or Plasma (LiHep). Please indicate specimen type submitted (Serum or Plasma). Stated Turnaround Time applicable to specimens received at HICL from Monday to Wednesday.	Myoglobin - Plasma < 50 Units: µg/L CF: - - -
Myoglobin	2D	10 mL Urine (Random). Adjust the pH to 8 - 9 and freeze immediately after collection. If the specimen thaws, it is unsuitable for analysis.	Myoglobin - Random Urine Negative Units: Qual. test CF: - - -
Nelfinavir	10D	3 mL Plasma (Heparin). Avoid gel-separator tubes. Separate within 2h of collection and transfer to clean transfer vial. Store and send frozen. Preferred collection time is trough collected within 30 min prior to the next dose or 6-14h post dose (twice daily dosing), 12-26h post dose (once daily dosing). Peak collection time: 2-4h post dose. Indicate collection time on specimen and requisition. The 2 mL specimen is sufficient for analysis of multiple antiretroviral drugs with a reduced fee for multiple drugs on the same specimen. Minimum volume is 200 µL.	Nelfinavir Target level: Approximately 0.80 Units: mg/L CF:
Neuromyelitis Optica Antibody (IgG)	20D	1 mL Serum. Separate as soon as possible. Store and send frozen. Hemolyzed and lipemic specimens are not suitable.	Neuromyelitis Optica Ab. (IgG) Negative: < 3.0 Positive: >=3.0 Units: kU/L CF: - - -
Neutrophil Cytoplasmic Antibody (C only)	5D	1 mL Serum. Both P- and C-ANCA will be performed (and billed) unless C-ANCA alone is specified.	C-ANCA 3 m - Adult: Less than 1.0 Units: AI CF: - - -
Neutrophil Cytoplasmic Antibody (P only)	5D	1 mL Serum. Both P- and C-ANCA will be performed (and billed) unless P-ANCA alone is specified.	P-ANCA 3 m - Adult: Less than 1.0 Units: AI CF: - - -
Neutrophil Cytoplasmic Antibody	5D	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.	C-ANCA (PR3) 3 m - Adult: Less than 1.0 Units: AI CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			P-ANCA (MPO) 3 m - Adult: Less than 1.0 Units: AI CF: - - -
Nevirapine	10D	3 mL Plasma (Heparin). Avoid gel-separator tubes. Separate within 2h of collection and transfer to clean transfer vial. Store and send frozen. Preferred collection time is trough collected within 30 min prior to the next dose or 6-14h post dose (twice daily dosing), 12-26h post dose (once daily dosing). Peak collection time: 2-4h post dose. Indicate collection time on specimen and requisition. The 2 mL specimen is sufficient for analysis of multiple antiretroviral drugs with a reduced fee for multiple drugs on the same specimen. Minimum volume is 200 µL.	Nevirapine 3.0 - 8.0 Units: mg/L CF:
Niacin	10D	4 mL Plasma (EDTA). Protect specimen from light. Specimen must be labelled inside and outside the light-protecting wrap. Store and send frozen.	Niacin >= 10y: 0.50 - 8.45 <10y: 0.50 - 8.91 Units: µg/mL CF:
Nickel	10D	13 mL Urine (Random). Collect and transfer in metal-free container. Provide date of birth and gender. Indicate "Random".	Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mmol/L CF: - - - Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mg/L CF: - - - Nickel-U 0.00 - 3.50 Units: µg/L CF: - - - Nickel-U 0.0 - 59.6 Units: nmol/L CF: - - - Nickel-U

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Age and gender related See [Trace Metals Ref. Values] table Units: µmol/mol cr CF: - - - Nickel-U Age and gender related See [Trace Metals Ref. Values] table Units: µg/g cr CF: - - -
Nickel	10D	13 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date, 24 hour volume and gender.	Creatinine-U24h Male: 3.5 - 25.0 Female: 2.6 - 20.0 Units: mmol/L CF: - - - Creatinine-U24h Male: 8.6 - 19.4 Female: 6.3 - 13.4 Units: mmol/d CF: - - - Nickel-U 0.00 - 3.50 Units: µg/L CF: - - - Nickel-U 0.0 - 59.6 Units: nmol/L CF: - - - Nickel-U24h 0.0 - 5.0 Units: µg/d CF: - - - Nickel-U24h 0.0 - 85.1 Units: nmol/d CF: - - -
Nickel	10D	3 mL Plasma (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Separate as soon as possible and transfer plasma to polypropylene vial.	Nickel - P 0.0 - 1.3 Units: µg/L CF: Nickel - P

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			0.0 - 22.2 Units: nmol/L CF:
Nickel	10D	3 mL Erythrocyte. Collect K2-EDTA blood in contaminant-free tube. Separate and transfer erythrocytes to a polypropylene transfer vial. Store and send frozen - See Collection instructions link above.	Nickel - E 0.0 - 2.8 Units: µg/L CF: Nickel - E 0.0 - 47.7 Units: nmol/L CF:
Nickel	10D	6 mL Whole Blood (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Store and send cold.	Nickel - WB 0.0 - 1.3 Units: µg/L CF: Nickel - WB 0.0 - 22.2 Units: nmol/L CF:
Nickel	15D	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck - for long hair only use the first inch or so closest to the scalp. If unable to weigh the hair, submit 1 heaping teaspoon (10-20 mL). Submit in a plastic bag. The test should not be ordered if hair has been bleached, permed or dyed in the last two months. This metal is included in the Toxic (Hair) Panel.	Nickel - H 0.00 - 0.35 Units: µg/g CF: Nickel - H 0.0 - 6.0 Units: nmol/g CF:
Nickel	15D	0.001 g Tissue. Samples for analysis may include paraffin blocks or frozen tissue in saline or formalin. Needle biopsies are also acceptable in formalin. If fixed in formalin, please send an extra tube of formalin. Store and send frozen.	Source Units: CF: Nickel - Tissue Not Available Units: µg/g CF: Nickel - Tissue Not Available Units: nmol/g CF:
Nickel	10D	15 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date and 24-h volume. Avoid mineral supplements for 5 days.	Nickel - U 0 - 102

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Units: nmol/L CF: µg/L x 17.04 Nickel - U24h 0 - 102 Units: nmol/d CF: µg/d x 17.04
Nickel	10D	15 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Avoid mineral supplements for 5 days.	Nickel - U 0 - 102 Units: nmol/L CF: µg/L x 17.04
Nickel	10D	2 mL Plasma (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Avoid gel-separator tube. Separate as soon as possible and transfer plasma to polypropylene vial. Store and send cold.	Nickel - P 0 - 17 Units: nmol/L CF: µg/L x 17.04
Nickel	10D	2 mL Erythrocyte. Collect K2-EDTA blood in contaminant-free tube. Separate and transfer erythrocytes to a polypropylene transfer vial. Store and send frozen - See Collection Instructions link above.	Nickel - E 0.0 - 47.7 Units: nmol/L CF: µg/L x 17.04
Nickel	10D	4 mL Whole Blood (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Do not open tube or separate. Store and send cold.	Nickel - WB 0.0 - 22.2 Units: nmol/L CF:
Nicotine	2D	10 mL Urine (Random). Collect and transfer cold. Results are not for medicolegal purposes.	Creatinine, urine Not Available Units: mmol/L CF: Nicotine, urine Not Detected Units: Qual. Test CF: Cotinine, urine Not Detected Units: Qual. Test CF:
Nitrazepam	7D	3 mL Serum. To monitor therapy, draw trough specimen prior to next dose. Store and send frozen.	Nitrazepam - Serum 100 - 800 Units: nmol/L CF: ng/mL x 3.56
Nitrazepam	7D	10 mL Urine (Random).	Nitrazepam - Urine Not detected

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Units: Qual. test CF: - - -
NMDA Receptor Antibodies IgG	6D	1 mL Serum. Store and send frozen. This test is for research/ investigational purposes only. Results to be interpreted in the context of the clinical history, signs and symptoms of the patient.	NMDA Receptor Ab IgG-S Units: Qual. Test CF: - - -
NMDA Receptor Antibodies IgG	6D	1 mL CSF. Store and send frozen. This test is for research/investigational purposes only. Results to be interpreted in the context of the clinical history, signs and symptoms of the patient.	NMDA Receptor Ab IgG-CSF Units: Qual. Test CF: - - -
Non-Spec. Coagulation Inhib.	5D	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.	Non-Specific Coag. Inhibitor Not detected Units: Qual. test CF: - - -
Norovirus PCR	3D	5-20 mL Faeces (Liquid or semi-solid). Collect specimen within 48 hrs of symptom onset in a clean dry sterile container. Do not allow contact with urine or paper. Transport cold. Due to limited stability, sample must be received at ICL from Monday-Thursday within 24 hrs of collection. Unacceptable specimens: Rectal swab, Faeces in transport medium, formed stool. Additional information required: Request must specify 'Norovirus' and/or signs of illness (vomiting and diarrhea).	Norovirus PCR NEGATIVE by PCR Units: CF:
Nortriptyline	1D	10 mL Urine (Random).	Nortriptyline - Urine Not detected Units: µmol/L CF: mg/L x 3.80
Nortriptyline	5D	3 mL Serum or Plasma (EDTA). Avoid gel-separator tubes and separate within 2 hours. Submit trough specimen (i.e. collected within 1 h prior to next dose or at least 12 hours post-dose.)	Nortriptyline 0.20 - 0.60 Toxic: > 1.80 Units: µmol/L CF: mg/L x 3.80
Nuclear Antibodies	5D	1 mL Serum. Store and send frozen. Reports may be delayed for confirmation of positive results. Plasma is not suitable for this assay.	Nuclear Antibodies Not detected: Less than 1:40 Refer to report for distribution patterns of detected antibodies and significance.

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Units: Titre CF: - - -
Nut Mix (Fx1), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to an allergen mix (Peanut,Hazelnut,Almond,Coconut,Brazil Nut). This assay provides a single qualitative result only. It does not provide information on the amount of IgE specific for any of the component allergens within the mix. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Nut Mix (Fx1), IgE Negative Units: KU/L CF: - - -
Olanzapine	10D	2 mL Serum or Plasma (heparin). Avoid gel-separator tubes. Submit trough specimen collected just prior to next dose or post-dose at a time >75% of the dosing interval. Store and send frozen.	Olanzapine Trough: 32 - 256 (based on 5-20 mg/d dose) Units: nmol/L CF: - - -
Oligosaccharides	10D	1 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).	Oligosaccharides - TLC Normal Units: Qual. test CF: - - -
Olive Tree (t9), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Olive Tree (t9), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -
Orange Roughy (f412), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Orange Roughy (f412), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -
Organic Acids	21D	10 mL Urine (Random). State age and clinical diagnosis. Store and send frozen. Early morning sample is preferred.	Creatinine - Urine Not available Units: µmol/L CF: Organic Acids Result interpreted on report Units: See report CF: - - -
Orotic Acid	20D	10 mL Urine (Random). Freeze if stored overnight. Acidified specimens (6 mol/L HCl) are acceptable but not required. Please provide age, gender and clinical history to facilitate interpretation of analytical findings and recommendation of further testing or consultation.	Creatinine - Urine Reference Ranges are not available Units: µmol/L CF: - - - Orotic Acid Age dependant Over 10 y - Adult: 0.4 - 1.2 Less than 2 wks: 1.4 - 5.3 2 wks - 1 y: 1.0 - 3.2 1 y - 10 y: 0.5 - 3.3 Units: mmol/mol cr CF: mg/g Cr x 1.37
Osmolality	1D	5 mL Urine (Random or 24h).	Osmolality - Urine Less than 1201 Units: mmol/kg CF: mOsm/kg x 1.00
Osmolality	2D	5 mL Fluid / Faeces. Indicate source of fluid clearly on requisition. Faeces: Submit 5 mL naturally fluid faeces. Formed faeces is not acceptable.	Osmolality - Fluid Not Available. Units: mmol/kg CF: mOsm/kg x 1.00
Osmolality	1D	3 mL Serum.	Osmolality - Serum 275 - 295 Units: mmol/kg CF: mOsm/kg x 1.00
Osteocalcin	12D	1 mL Serum. Serum is preferred. Gel-separator tubes acceptable. Avoid hemolysis as erythrocytes contain proteases that will degrade	Osteocalcin,N-MID M & F, >= 18y: 11 - 50

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
		Osteocalcin. Spin and separate immediately and split into 2 aliquots. Freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. This assay detects intact Osteocalcin (amino acids 1-49) as well as the N-MID fragment (amino acids 1-43).	Units: µg/L CF: - - -
Ovalbumin Egg nGal d2 (f232), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Ovalbumin Egg nGal d2, IgE < 0.35 Interpretive Comment: Most abundant egg white protein. Risk for clinical reaction to raw or slightly heated egg and certain vaccines. Units: KU/L CF: - - -
Oxalate	5D	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 - Urine (random) Not available for random urine. Units: µmol/L CF: - - -
Oxalate	5D	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.	Creatinine - Urine (24h) 8.8 - 22.0 Female: 4.5 - 16.0 Units: mmol/d CF: - - - Oxalate - Urine (24h) Male: 92 - 564 Female: 46 - 368 Children 0-16 y: 161 - 483 Units: µmol/d CF: mg/d x 11.4
Oxalate	10D	5 mL Plasma (Na-Heparin). Patient should avoid Vitamin C supplements for 24 h. Collect fasting (> 12-hours). Place specimen on ice immediately and centrifuge within 1 hour in refrigerated unit (if available). Adjust pH to 1-3.5 (ideal range 2.3-2.7) with approximately 10 µL 12N HCl per 1 mL plasma. Refer to separate instructions for referral of non-acidified specimen. Specimen must be received Mon-Wed within 5 days of collection.	Oxalate - P < 1.8 Units: µmol/L CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Oxazepam	10D	2 mL Serum or Plasma (Hep). Avoid gel-separator tubes.	Oxazepam 200 - 500 Units: ng/mL CF: nmol/L x 0.287 Oxazepam 698 - 1745 Units: nmol/L CF: ng/mL x 3.49
Oxcarbazepine Metabolite (MHC)	5D	0.5 mL Serum. Submit trough specimen (i.e. collected within 1 hour prior to next dose.) Spin and separate within 2 hours of collection. Gel separator tubes are acceptable. Therapeutic range is based on trough specimen. However some individuals may respond well outside this range, or may display toxicity within this range. Toxic ranges have not been well established. Thus, interpretation should include clinical status.	Oxcarbazepine Metabolite 3 - 35 Toxic range has not been established. Units: µg/mL CF:
Oxygen Dissociation P50	6D	5 mL Whole Blood (Na-Heparin). Collect and submit a Control specimen with the patient specimen. Draw a control specimen from a normal (healthy), unrelated non-smoking person at the same time as the patient - label tube as CONTROL. Send in original tubes - do not aliquot. Rubber band patient specimen and control vial together. Refrigerate specimens immediately. Specimens must be received at ICL Monday to Wednesday by 3 p.m. on the collection day or the following day. Patient age and gender are mandatory.	Oxygen Dissociation P50, RBC >= 12m: 24 - 30 < 12m: Not Available Units: mm Hg CF: P50 Interpretation Normal: p50=24 to 30 mm Hg (with sigmoidal oxygen dissociation curve) Units: CF:
Paliperidone	10D	2 mL Serum or Plasma (Heparin). Avoid gel-separator tubes. Submit trough specimen collected just prior to next dose or post-dose at a time >75% of the dosing interval. Store and send frozen. Paliperidone (also known as 9-Hydroxyrisperidone) is an active metabolite of Risperidone and is also included in that analysis - refer to separate listing. Please note that the therapeutic range for Paliperidone/ 9-Hydroxyrisperidone varies by whether patient is administered Paliperidone or Risperidone.	Paliperidone 41 - 123 Units: nmol/L CF: - - -
Palladium	15D	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck - for long hair only use the first inch or so closest to the scalp. If unable to weigh the hair, submit 1 heaping teaspoon (10-20 mL). Submit in a plastic bag. The test should not be ordered if hair has been bleached,	Palladium - H 0.0000 - 0.2000 Units: µg/g CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
		permed or dyed in the last two months. This metal is included in the Toxic (Hair) Panel.	Palladium - H 0.000 - 1.880 Units: nmol/g CF:
Paraneoplastic Autoantibody Panel	15D	1 mL Serum. Positive results are confirmed by Western blot.	Anti-Yo - Serum Negative: Less than 1:10 (Anti-Purkinje Cell Cytoplasmic Ab. Type 1) Units: CF: - - - Anti-Hu - Serum Negative: Less than 1:10 (Anti-Neuronal Antibody Type 1 (ANNA-1)) Units: CF: - - - Anti-Ri - Serum Negative: Less than 1:10 (Anti-Neuronal Antibody Type 2 (ANNA-2)) Units: CF: - - -
Paraneoplastic Autoantibody Panel	15D	1 mL CSF. Positive results are confirmed by Western blot.	Anti-YO - CSF Negative: Less than 1:2 (Anti-Purkinje Cell Cytoplasmic Ab. Type 1) Units: CF: - - - Anti-HU - CSF Negative: Less than 1:2 (Anti-Neuronal Antibody Type 1) Units: CF: - - - Anti-RI - CSF Negative: Less than 1:2 (Anti-Neuronal Antibody

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Type 2) Units: CF: - - -
Parathyroid Hormone (Intact)	2D	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 (Intact) 1.6 - 6.9 Units: pmol/L CF: - - -
Parathyroid Hormone-Related Protein	10D	0.5 mL Plasma (Na heparin). Separate plasma as soon as possible. Store and send frozen. Other specimen types of plasma or serum are not acceptable.	PTH-Related Protein (PTH-RP) 14 - 27 Units: pg/mL CF: - - -
Paroxetine	7D	0.5 mL Serum. Avoid gel-separator tubes. Separate within two hours. Store and send frozen.	Paroxetine 30 - 120 Units: ng/mL CF: nmol/L x 0.330 Paroxetine 91 - 364 Units: nmol/L CF: ng/mL x 3.03
Peach Pru p 1 (f419), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Peach Pru p 1 (f419), IgE < 0.35 Interpretive Comment: PR-10 protein. Heat labile. Suggests birch pollen-related peach allergy. Associated with local reactions. Cooked peach may be tolerated. Units: KU/L CF: - - -
Peach Pru p 3 (f420), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Peach Pru p 3 (f420), IgE < 0.35 Interpretive Comment: Lipid transfer protein (LTP). Heat and digestion stable. Associated with local as well as

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			systemic reactions. Units: KU/L CF: - - -
Peach Pru p 4 (f421), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Peach Pru p 4 (f421), IgE < 0.35 Interpretive Comment: Heat and digestion labile. Present and similar in all plant foods and pollen. Low risk marker for severe reactions. Units: KU/L CF: - - -
Pecan, Hickory (t22), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Pecan, Hickory (t22), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -
Phenytoin: Free	2D	1 mL Serum. Avoid gel-separator tubes. Assay includes Free and Total Phenytoin.	Phenytoin: Free Therapeutic: 4.0 - 8.0 Toxic: Greater than 8.0 Units: µmol/L CF: mg/L x 3.96 Phenytoin: Total Therapeutic: 40 - 80 Toxic: Greater than 80 Units: µmol/L CF: mg/L x 3.96
Phenytoin	1D	0.5 Serum or Plasma (Hep/Cit). Avoid gel-separator tubes. Plasma (Heparin) or Plasma (Citrate) is acceptable. Submit trough specimen (i.e. collected within 1 hour prior to next dose.	Phenytoin Therapeutic: 40 - 80 Toxic: Greater than 80 Units: µmol/L CF: mg/L x 3.96

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Phosphate	3D	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.	Phosphorus - Urine 13 - 42 Diet dependent Units: mmol/d CF: mg/d x 0.0323
Phosphorus	15D	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck - for long hair only use the first inch or so closest to the scalp. If unable to weigh the hair, submit 1 heaping teaspoon (10-20 mL). Submit in a plastic bag. The test should not be ordered if hair has been bleached, permed or dyed in the last two months. This metal is included in the Essential (Hair) Panel.	Phosphorus - H 125 - 240 Units: µg/g CF: Phosphorus - H 4.0 - 7.7 Units: µmol/g CF:
Phthalic Anhydride (k79), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Phthalic Anhydride (k79), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -
Phytanic Acid	30D	0.5 mL Serum or Plasma (Heparin). Fasting specimen preferred. Store and send frozen.	Phytanic Acid Less than 10.0 Units: µmol/L CF: - - -
Pigweed (Rough) (w14), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Pigweed (Rough) (w14), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			> 100 6: Extremely High Units: KU/L CF: - - -
Plasminogen	7D	0.5 mL Plasma (Citrate). Store and send frozen. If the specimen thaws, it is unsuitable for analysis.	Plasminogen 0.71 - 1.23 Units: U/mL CF: - - -
Platelet Antibody IgG	20D	4.5 mL Whole Blood (CTAD). Collect a full blue-top CTAD, or purple-top if CTAD not available. Do not freeze. Sample must be kept at room temperature at all times. Platelet count must be provided. Samples must reach ICL Mon-Thu by 12 noon within 40 hours after collection. Include diagnosis and treatment received in the past 3 months. A completed supplier requisition is mandatory. Contact ICL Client Care for a copy of the requisition.	Platelet Antibody IgG Negative Units: Qual. test CF:
Porphobilinogen Deaminase	10D	7 mL Whole blood (Heparin). Gel-separator tubes not acceptable. Do not freeze. Store and send cold. Provide hematocrit for calculation of result.	Porphobilinogen Deaminase 29 - 49 This reference interval has not been validated for persons <18y. Units: µmol/L Erc/h CF: - - -
Porphyrin Precursors (ALA & PBG)	10D	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 Porphyrin analysis. Analysis includes Porphobilinogen (PBG) and δ-Aminolevulinic Acid (ALA).	Creatinine - Urine (Random) Not available for random urine Units: mmol/L CF: - - - Porphobilinogen - Urine Adult (random): 0.1 - 0.8 Units: mmol/mol Cr CF: - - - δ-Aminolevulinic Acid - Urine Adult (random): 1 - 5 PBG/ALA reference values are not available for individuals 17y and younger. Units: mmol/mol Cr CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Porphyrin Precursors (ALA & PBG)	10D	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 Porphyrin analysis. Analysis includes Porphobilinogen (PBG) and δ-Aminolevulinic Acid (ALA).	Creatinine - Urine (24h) Male, >=18y: 7.1-17.7 Female, >=18y: 5.3-15.9 (Creatinine reference values are not available for individuals <=17y) Units: mmol/d CF: mg/d x 0.00884 Porphobilinogen - Urine (24h) Adult: Less than 9.0 (PBG/ALA reference values are not available for individuals <=17y) Units: µmol/d CF: µg/d x 0.00442 δ-Aminolevulinic Acid-U-(24h) Adult: Less than 50 (δ-ALA reference values are not available for individuals <=17y) Units: µmol/d CF: µg/d x 0.00763
Porphyrins: Quantitation	11D	2 mL Serum or Plasma (EDTA, NaHep). Avoid gel separator tubes, EDTA or Na Heparin Plasma are acceptable. Protect specimen from light at all times during collection and processing. Avoid hemolysis. Freeze immediately after separation. Specimen must be labelled inside and outside light-protecting wrap.	Uroporphyrin - P <= 0.2 Units: µg/L CF: Heptacarboxyporphyrin - P <= 0.2 Units: µg/L CF: Hexacarboxyporphyrin - P <= 0.3 Units: µg/L CF: Pentacarboxyporphyrin - P <= 0.4 Units: µg/L CF: Coproporphyrin - P <= 0.8 Units: µg/L CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Protoporphyrin - P 0.4 - 4.8 Units: µg/L CF: Total Porphyrins - P 1.0 - 5.6 Units: µg/L CF: Interpretation Units: CF:
Porphyrins: Quantitation	8D	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 Porphyrin screen is positive.	Coproporphyrin I - Faeces Adult: Less than 13 Units: nmol/g CF: µg/g x 1.53 Coproporphyrin III - Feces Adult: Less than 12 Units: nmol/g CF: µg/g x 1.53 Uroporphyrin I - Feces Adult: Less than 5 Units: nmol/g CF: µg/g x 1.20 Uroporphyrin III - Feces Adult: Less than 1 Units: nmol/g CF: µg/g x 1.20 Heptacarboxylic Acid - Feces Adult: Less than 1 Units: nmol/g CF: - - - Hexacarboxylic Acid - Feces Adult: Less than 1 Units: nmol/g CF: - - - Pentacarboxylic Acid - Feces Adult: Less than 1 Units: nmol/g CF: - - - Deuteroporphyrin - Feces

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Adult: Less than 14 Units: nmol/g CF: - - - Mesoporphyrin - Feces Adult: Less than 6 Units: nmol/g CF: - - - Protoporphyrin - Feces Adult: Less than 38 Porphyrin reference values are not available for individuals 17y and younger. Units: nmol/g CF: - - -
Porphyrins: Quantitation	8D	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.	Creatinine Not available for random urine Units: mmol/L CF: - - - Uroporphyrin I Adult: 0.4 - 3.9 Units: µmol/mol cr CF: - - - Uroporphyrin III Adult: Less than 2.0 Units: µmol/mol cr CF: - - - Heptacarboxylic Acid Adult: Less than 1.3 Units: µmol/mol cr CF: - - - Hexacarboxylic Acid Adult: Less than 0.7 Units: µmol/mol cr CF: - - - Pentacarboxylic Acid Adult: Less than 1.0 Units: µmol/mol cr CF: - - - Coproporphyrin I

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Adult: 0.3 - 8.5 Units: µmol/mol cr CF: - - - Coproporphyrin III Adult: 1.7 - 26.3 Units: µmol/mol cr CF: - - - Copro III/Copro I Ratio Adult: 2.6 - 5.3 Units: Ratio CF: - - - Interpretation Provided on report Porphyrin reference values are not available for individuals 17y and younger. Units: CF:
Porphyrins: Quantitation	8D	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.	Uroporphyrin I - U (24h) Adult: Less than 44 Units: nmol/d CF: µg/24h x 1.20 Uroporphyrin III - U (24h) Adult: Less than 20 Units: nmol/d CF: µg/24h x 1.20 Heptacarboxylic Acid - U (24h) Adult: 1 - 16 Units: nmol/d CF: - - - Hexacarboxylic Acid - U (24h) Adult: Less than 2 Units: nmol/d CF: - - - Pentacarboxylic - U (24h) Adult: Less than 2 Units: nmol/d CF: - - - Coproporphyrin I - U (24h) Adult: 5 - 90

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Units: nmol/d CF: µg/24h x 1.53 Coproporphyrin III - U (24h) Adult: 15 - 242 Units: nmol/d CF: µg/24h x 1.53 Copro III/Copro I - U (24h) Adult: 2.6 - 5.3 Porphyrin reference values are not available for individuals 17y and younger. Units: Ratio CF: - - -
Porphyrins: Screen	6D	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.	Porphyrin Screen - Urine (RU) Normal Units: Qual. test CF: - - - Creatinine - Urine (Random) Not available for random urine. Units: mmol/L CF: - - -
Porphyrins: Screen	7D	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.	Porphyrin Screen - Faeces Normal Units: Qual. test CF: - - -
Porphyrins: Screen	6D	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.	Creatinine - Urine (24h) Male, >=18y: 7.1-17.7 Female, >=18y: 5.3-15.9 (Creatinine reference values are not available for individuals <=17y) Units: mmol/d CF: - - - Porphyrin Screen - Urine (24h) Normal Units: Qual. test CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Post Heparin Lipolytic Activity	10D	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 Client Care at (416) 422-3000 Ext. 300 or info@hicl.on.ca.	Post-Hep. Lipoprotein Lip. Act 10 fold increase in lipolytic activity Units: 10*3 U/L CF: - - - Post-Hep. Hepatic Lipase Act. 5 fold increase in lipolytic activity Units: 10*3 U/L CF: - - -
Potassium	2D	1 mL Fluid / Faeces. Indicate source of fluid clearly on requisition. Faeces: Submit 5 mL naturally fluid faeces. Formed faeces is not acceptable.	Potassium - Fluid Not available. Units: mmol/L CF: mEq/L x 1.00
Potassium	3D	1 mL Urine (Random).	Potassium - Urine (random) Not available for random urine. Units: mmol/L CF: - - -
Potassium	10D	13 mL Urine (Random). Collect and transfer in metal-free container. Provide date of birth and gender. Indicate "Random". Avoid mineral supplements for 5 days.	Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mmol/L CF: - - - Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mg/L CF: - - - Potassium-U 1173 - 4691 Units: mg/L CF: - - - Potassium-U 30 - 120 Units: mmol/L CF: - - - Potassium-U Age and gender related See [Trace Metals Ref. Values] table

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Units: mol/mol cr CF: - - - Potassium-U Age and gender related See [Trace Metals Ref. Values] table Units: g/g cr CF: - - -
Potassium	10D	13 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date, 24 hour volume and gender. Avoid mineral supplements for 5 days.	Creatinine-U24h Male: 3.5 - 25.0 Female: 2.6 - 20.0 Units: mmol/L CF: - - - Creatinine-U24h Male: 8.6 - 19.4 Female: 6.3 - 13.4 Units: mmol/d CF: - - - Potassium-U 1173 - 4691 Units: mg/L CF: - - - Potassium-U 30 - 120 Units: mmol/L CF: - - - Potassium-U24h 1173 - 5082 Units: mg/d CF: - - - Potassium-U24h 30 - 130 Units: mmol/d CF: - - -
Potassium	10D	3 mL Erythrocyte. Collect whole blood in royal blue Na-heparin tube. Separate and transfer erythrocytes to a polypropylene transfer vial. Store and send frozen.	Potassium - E 3200 - 3760 Units: mg/L CF: Potassium - E 31.9 - 96.2 Units: mmol/L CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Potassium	15D	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck - for long hair only use the first inch or so closest to the scalp. If unable to weigh the hair, submit 1 heaping teaspoon (10-20 mL). Submit in a plastic bag. The test should not be ordered if hair has been bleached, permed or dyed in the last two months. This metal is included in the Essential (Hair) Panel.	Potassium - H 5.0 - 60.0 Units: µg/g CF: Potassium - H 0.13 - 1.53 Units: µmol/g CF:
Potassium	3D	1 mL Urine (24h). State collection date and total volume.	Potassium - Urine 25 - 125 Diet dependent Units: mmol/d CF: mEq/d x 1.00
Prealbumin	2D	1 mL Serum. Plasma is not acceptable. Separate serum within 2 hours.	Prealbumin 0.18 - 0.45 Units: g/L CF: - - -
Pregnenolone	12D	0.5 mL Serum. Avoid gel separator tubes. Store and send frozen.	Pregnenolone Males, 18-58y: 13-208 Premenopausal F, 18-51y: 7-188 Postmenopausal F, 59-81y: 13-111 Pediatric: 1-59d: 12-1331 60d-1y: <=170 2-6y: <=107 7-9y: <=114 10-12y: <=163 13-17y: <=325 Units: ng/dL CF: - - -
Prekallikrein	20D	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.	Prekallikrein Less than 3 m: 0.1 - 1.0 3 m and over: 0.50 - 1.50 Units: U/mL CF: % x 0.0100

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Primidone	1D	0.5 mL Serum. To monitor therapy draw trough specimens before the next dose is administered. Avoid gel-separator tube. The active metabolite Phenobarbital should be measured simultaneously.	Primidone - Serum Therapeutic: 23.0 - 55.0 Toxic: Greater than 70.0 Units: µmol/L CF: µg/mL x 4.58
Procainamide & Metab.	7D	0.5 mL Serum. Gel-tubes are acceptable. Specimen must be separated within 2 hours. Store and send frozen.	Procainamide 4.0 - 10.0 Units: µg/mL CF: µmol/L x 0.236 Procainamide 16.9 - 42.3 Units: µmol/L CF: µg/mL x 4.23 N-Acetylprocainamide 12.0 - 18.0 Units: µg/mL CF: µmol/L x 0.277 N-Acetylprocainamide 43.3 - 65.0 Units: µmol/L CF: µg/mL x 3.61 Procainamide + NAPA Not Available Units: µg/mL CF: - - -
Procalcitonin	5D	0.5 mL Serum. Avoid gel-separator tubes.	Procalcitonin At birth: < 2 18 - 30 hours age: <= 20 then falling to <= 0.15 by 72h 72 hours age - Adult: <= 0.15 Units: ng/mL CF:
Procollagen I Intact N-Terminal	8D	1 mL Serum. Collect serum in plain red-top tube. Gel-separator tube is acceptable. There is diurnal variation of PINP with the values being higher at night. When serial measurements of PINP are performed, specimens should be collected at the same time of the day.	Procollagen I Intact N-Term Males: <23y: Not established 23-60y: 30-110 >60y: Not established Females:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			<20y: Not established 20-45y: 22-104 46-60y: 20-108 >60y: Not established Units: µL/g CF: - - -
Progesterone	2D	1 mL Plasma (Li-Heparin). Serum and plasma (EDTA) are also acceptable.	Progesterone Female - Reproductive age: Follicular: Less than 1 - 5 Ovulation: 2 - 9 Luteal: 5 - 86 Post-menopausal: Less than 1 - 3 Male: Less than 1 - 5 Units: nmol/L CF: x 0.314 = ng/mL
Proinsulin	11D	1 mL Serum. Collect a fasting sample (overnight fast). Allow blood to fully clot and immediately separate serum. Separate in a refrigerated centrifuge or in chilled buckets if available. Store and send frozen. Plasma (EDTA) is acceptable but has reduced stability - refer to "Plasma Collection" link or contact Client Care.	Proinsulin <= 18.8 Units: pmol/L CF:
Prolactin	2D	1 mL Serum. This assay cross-reacts with macroprolactin. If result is elevated, recollection and submission for Macroprolactin (see separate listing) is recommended.	Prolactin M: 4 - 15 F: 5 - 23 Units: µg/L CF: ng/mL x 1.00
Proliferating Cell Nuclear Antigen Abs	15D	1 mL Serum. Collect serum in plain or gel-separator tube.	PCNA Antibody Negative Units: Qual. Test CF:
Propafenone	7D	3 mL Serum. Avoid gel-separator tubes. Sample should only be collected after patient has been receiving Propafenone for at least three days. Collect trough specimen just before next dose.	Propafenone 0.5 - 2.0 Toxic: > 2.0 Units: µg/mL CF: µmol/L x 0.341 Propafenone 1.5 - 5.9

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Units: µmol/L CF: µg/mL x 2.93
Prostaglandin D2	12D	3.0 mL Serum or Plasma (EDTA). Separate immediately. Gel separator tubes are acceptable. If the specimen thaws, it is unsuitable for analysis. Patient should not be on aspirin, indomethacin or other anti- inflammatory medications, if possible, for at least 48 hours prior to collection as this will drastically reduce circulating Prostaglandin D2.	Prostaglandin D2 35 - 115 Pediatric reference ranges not available. Units: pg/mL CF: - - -
Prostate Specific Antigen: Free	1D	2 mL Serum or Plasma (Li-Hep./EDTA). Recommend collecting prior to rectal exam or other action that may alter circulating PSA concentration.	PSA - Total Less than 4.0 May be increased by prostate manipulation(massage/biopsy) or cytoscopy. Hospitalization may decrease PSA levels. Units: µg/L CF: ng/mL x 1.00 PSA - Free See interpretation for Free/Total PSA Ratio. Units: µg/L CF: ng/mL x 1.00 Free PSA/Total PSA Ratio Total <4: Prostate cancer unlikely and Free is not informative. Total >10: Prostate cancer likely and Free is not informative. Total >=4 and <=10: If Free/Total ratio >0.27, chance of prostate cancer is about 10%. If ratio is <0.17, chance of prostate cancer is about 50%. Units: Ratio CF: - - -
Prostate Specific Antigen: Sensitive	3D	2 mL Serum. Do not add acid or other preservatives. Recommend collection prior to rectal exam or other action that may affect PSA levels.	PSA - Ultrasensitive Less than 4.0 Units: µg/L CF: ng/mL x 1.00

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Prostate Specific Antigen	3D	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.	PSA - Total 0.00 - 4.00 Units: µg/L CF: ng/mL x 1.00
Protein Analysis: Electrophoresis	10D	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.	Total Protein (Serum) 60 - 80 Units: g/L CF: - - - Prealbumin Not Detected Units: CF: - - - Albumin 32 - 44 Units: g/L CF: - - - Alpha-1 Globulins 1 - 4 Units: g/L CF: - - - Alpha-2 Globulins 6 - 11 Units: g/L CF: - - - Beta Globulins 7 - 12 Units: g/L CF: - - - Gamma Globulins 6 - 17 Units: g/L CF: - - - Interpretation Interpreted on Report Units: CF: - - -
Protein Analysis: Electrophoresis	10D	25 mL Urine (Random). Store and send frozen. Immunofixation analysis may be performed, reported and billed if indicated by the electrophoretic result.	Interpretation Results interpreted on report (Reference values not available

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			for random collections) Units: CF:
Protein Analysis: Electrophoresis	4D	5 mL CSF. Store and send frozen. If testing for Oligoclonal Banding or Multiple Sclerosis, refer to "Protein Analysis: Oligoclonal Banding".	Pre Albumin (CSF) 2 - 7 Units: % CF: - - - Albumin (CSF) 52 - 72 Units: % CF: - - - Alpha 1 (CSF) 1 - 7 Units: % CF: - - - Alpha 2 (CSF) 3 - 12 Units: % CF: - - - Beta (CSF) 7 - 23 Units: % CF: - - - Gamma (CSF) 3 - 13 Units: % CF: - - - M Spike (CSF) Not Detected Units: CF: - - - Interpretation (CSF) Results interpreted on report. Units: CF: - - -
Protein Analysis: Immunofixation	5D	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 A, G and M See [Immunoglobulins Data] table Units: g/L CF: mg/dL x 0.0100 Immunofixation - Serum Results interpreted on report

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
		Immunoglobulin E by IFE is available - refer to Immunoglobulin D (By IFE) or Immunoglobulin E (By IFE).	Units: Qual. test CF:
Protein Analysis: Oligoclonal Banding	10D	2 mL CSF and 1 mL Serum. Concurrent collection of CSF and serum specimens is recommended. However, specimens collected within 48 hours with no intervention are acceptable. Analysis and interpretation requires both specimens. Plasma is not suitable. Store and send frozen - specimen must be received at ICL within 5 days of collection.	IgG 0.005 - 0.060 Units: g/L CF: - - - Albumin 0.134 - 0.237 Units: g/L CF: - - - Albumin Index Pediatric ranges not available Adult: 18y-30y: 2.7 - 4.7 31y-40y: 2.9 - 5.1 41y-50y: 3.3 - 5.9 51y-60y: 3.8 - 7.2 61y-70y: 3.9 - 7.3 Units: CF: IgG Index 35 - 69 Units: CF: IgG/Albumin Ratio < 0.250 Units: CF: Comments Units: CF:
Protein C: Functional	7D	1 mL Plasma (Na Citrate). Patient should not be on anticoagulant therapy. Prepare platelet-poor specimen and freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. Please Note: Testing for protein C deficiency during an acute illness or anticoagulant therapy is not recommended.	Protein C: Functional 18 years and up: 0.70 - 1.80 Units: U/mL CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Protein C: Immunological	30D	1 mL Plasma (Na Citrate). Patient should not be on anticoagulant therapy. Prepare platelet-poor specimen and freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. Please Note: Testing for protein C deficiency during an acute illness or anticoagulant therapy is not recommended.	Protein C: Immunological 18 years and up: 0.65 - 1.25 Units: U/mL CF:
Protein S: Free & Total	10D	3 mL Plasma (Citrate). Patient should not be on anticoagulant therapy. Prepare 1 mL aliquots of platelet-poor plasma and freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. Please Note: Testing for protein S deficiency during an acute illness or anticoagulant therapy is not recommended.	Protein S: Total F, 18 y and over: 0.65 - 1.35 M, 18 y and over: 0.86 - 1.40 Units: U/mL CF: - - - Protein S: Free F, 18 y and over: 0.62 - 1.44 M, 18 y and over: 0.78 - 1.61 Units: U/mL CF: - - -
Protein S: Free	10D	1 mL Plasma (Citrate). Patient should not be on anticoagulant therapy. Prepare platelet-poor plasma and freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. Please Note: Testing for protein S deficiency during an acute illness or anticoagulant therapy is not recommended.	Protein S: Free F, 18y and over: 0.62 - 1.44 M, 18y and over: 0.78 - 1.61 Units: U/mL CF: - - -
Protein S: Total	10D	1 mL Plasma (Citrate). Patient should not be on anticoagulant therapy. Prepare platelet-poor plasma and freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis. The Protein S Total will not be interpreted without the Protein S Free results as the Protein S Free assay is considered the screen test for Protein S deficiency. Please Note: Testing for protein S deficiency during an acute illness or anticoagulant therapy is not recommended.	Protein S: Total F, 18 y and over: 0.65 - 1.35 M, 18 y and over: 0.86 - 1.40 Units: U/mL CF: - - -
Protein	3D	10 mL Urine (24h). Indicate collection date and volume.	Protein - Urine

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Less than 0.15 Units: g/L CF: - - - Protein - Urine Less than 0.15 Units: g/d CF:
Protein	2D	1 mL Fluid. Indicate source of fluid clearly on requisition.	Protein - Fluid Reference ranges not available for fluids. Units: g/L CF: g/dL X 10.0
Prothrombin Mutation	20D	4.0 mL Whole Blood (ACD). Store and send at controlled ambient temperature.	Prothrombin Mutation Interpreted on Report Units: - - - CF: - - -
Protoporphyrin: Erythrocyte	10D	2 mL Whole blood (EDTA). Protect specimen from light. Specimen must be labelled inside and outside light-protecting wrap. Hematocrit must be provided to allow calculation of result. Specimen may be frozen after measurement of hematocrit. Other anticoagulants and clotted specimens are unacceptable.	Free Protoporphyrin Adult: 0.40 - 1.00 Porphyrin reference values are not available for individuals 17y and younger. Units: µmol/L Erc. CF: µg/dL x 0.178
Pyruvate	5D	2 mL Supernatant. 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 - Supernatant 50 - 180 Units: µmol/L CF: mg/dL x 114
Pyruvate	5D	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 - CSF Interpretation guidelines not available for CSF. Units: µmol/L CF: mg/dL x 114
Quetiapine	8D	1.0 mL Serum. Avoid gel-separator tubes. Submit trough specimen collected just prior to next dose or post-dose at a time >75% of the dosing interval. Store and send frozen.	Quetiapine Serum Quetiapine therapeutic and toxic ranges have not been established.

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Expected range: 261-2610 nmol/L based on dosage of 225-750 mg/day. Units: nmol/L CF: ng/mL x 2.61
Quinidine	7D	0.5 mL Serum. Avoid gel-separator tubes. Separate within 2 hours.	Quinidine 2.0 - 5.0 Toxic: >= 6.0 Units: µg/mL CF: µmol/L x 0.325 Quinidine 6.2 - 15.4 Toxic: >= 18.5 Units: µmol/L CF: µg/mL x 3.08
Raltegravir	10D	3 mL Plasma (Heparin). Avoid gel-separator tubes. Separate within 2h of collection and transfer to clean transfer vial. Store and send frozen. Preferred collection time is trough collected within 30 min prior to the next dose or 6-14h post dose (twice daily dosing), 12-26h post dose (once daily dosing). Indicate collection time on specimen and requisition. The 2 mL specimen is sufficient for analysis of multiple antiretroviral drugs with a reduced fee for multiple drugs on the same specimen. Minimum volume is 200 µL.	Raltegravir >0.03 Therapeutic target is based on the trough concentration that exceeds the lower end of the range observed in patients with virological failure. Units: mg/L CF:
Rat Mix (e87), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Rat Mix (e87), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -
Red cedar (t57), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be	Red cedar (t57), IgE IgE Activity Allergy Index

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
		used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	< 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -
Renin Activity	7D	1 mL Plasma (EDTA). Store and send frozen. Specimen may be stored at room temperature up 24 hours. Do not refrigerate sample as this will cause cryoactivation and prorenin will convert to renin causing falsely high renin activity.	Renin Activity 0.25 - 5.82 Units: ng/mL/h CF: - - -
Renin	5D	2.5 mL Plasma (EDTA). Do not pre-chill blood collection tube. Centrifuge immediately at room temperature. Store and send frozen.	Renin Mass Normal salt diet (100 - 180 mmol/d): Recumbent >6h: 0.0 - 11.2 Upright >2h: 6.1 - 22.9 Low salt diet (10 mmol/d for 4 d): Recumbent >6h: 6.8 - 27.1 Upright >2h: 10.2 - 50.0 Upright 2h and diuretic: 13.7 - 93.4 Units: ng/L CF:
Reptilase Time	2D	1 mL Plasma (Citrate). Separate and freeze as soon as possible. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.	Reptilase 16 - 22 Units: Seconds CF: - - -
Respiratory Virus PCR	2D	Nasopharyngeal swab or BAL. Collect specimen and ship at 2-8 ° in viral (universal) transport medium. Nasal suction or aspirate samples are acceptable.	Respiratory Virus PCR NEGATIVE Units: CF:
Reticulin Antibodies	8D	3 mL Serum.	Reticulin Antibodies Negative Units: Qual. Test CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Reverse T3	7D	1 mL Serum. Collect serum in a plain red-top tube. Gel-separator tube is acceptable. Store and send frozen.	Reverse T3 10 - 24 Units: ng/dL CF:
Rheumatoid Factor	3D	1 mL Fluid. Specify fluid type on requisition.	Rheumatoid Factor - Fluid Interpretation guidelines not available for fluid Units: IU X 10*3/L CF: - - -
Rheumatoid Factor	3D	1 mL Serum. Plasma (Li or Sodium heparin) is also acceptable.	Rheumatoid Factor - Serum Less than 20 Units: IU x 10*3/L CF: - - -
Risperidone	10D	2 mL Serum or Plasma (Heparin). Avoid gel-separator tubes. Submit trough specimen collected just prior to next dose or post-dose at a time >75% of the dosing interval. Store and send frozen. Analysis includes the active metabolite 9-Hydroxyrisperidone, also known as Paliperidone, which is individually orderable - refer to separate listing. Please note that the therapeutic range for Paliperidone/ 9-Hydroxyrisperidone varies by whether patient is administered Paliperidone or Risperidone.	Risperidone 19.0 - 49.0 Units: nmol/L CF: ng/mL x 2.44 9-Hydroxyrisperidone 19.0 - 211.0 Units: nmol/L CF: ng/mL x 2.34 Combined (R + 9-OH-R) 19.0 - 260.0 Risperidone therapeutic ranges are valid for trough specimen collected just prior to next scheduled dose or post-dose at time >75% of the dosing interval Units: nmol/L CF: - - -
Ritonavir	10D	3 mL Plasma (Heparin). Avoid gel-separator tubes. Separate within 2h of collection and transfer to clean transfer vial. Store and send frozen. Preferred collection time is trough collected within 30 min prior to the next dose or 6-14h post dose (twice daily dosing), 12-26h post dose (once daily dosing). Indicate collection time on specimen & requisition. The 2 mL specimen is sufficient for analysis of multiple antiretroviral drugs with a reduced fee for multiple drugs on the same specimen. Min. Vol. is 200	Ritonavir >2.1 Therapeutic target is based on the suggested minimum effective concentration when used only as a protease inhibitor. Currenty, Ritonavir is used in low doses as a

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
		µL. If ordering Kaletra, both Ritonavir & Lopinavir will be tested & billed separately.	pharmacokinetic booster in combination with other protease inhibitors. Units: mg/L CF:
Rivaroxaban	8D	1 mL Plasma (Citrated). Collect samples 2-4 hours post dose (peak). Other anti-Xa anticoagulants including unfractionated heparin, low molecular weight heparin (enoxaparin, tinzaparin, dalteparin), and fondaparinux may interfere with the results. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.	Rivaroxaban (20mg daily dose): Peak: 182-408, Trough: 3-153 (15mg daily dose): Peak: 180-408, Trough: 2-161 (10mg daily dose): Peak: 91-196, Trough: 1-38 The lower limit of detection for this assay is 30 µg/L. Units: µg/L CF:
Rotavirus/Adenovirus Multiplex PCR	3D	5-20 mL Faeces (Liquid or semi-solid).	Rotavirus RNA NEGATIVE by PCR Units: CF: Adenovirus DNA NEGATIVE by PCR Units: CF:
rTria a 14 LTP Wheat (f433), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	rTria a 14 LTP Wheat, IgE < 0.35 Interpretive Comment: A lipid transfer protein (LTP). Associated with risk for clinical reactions. Units: KU/L CF: - - -
rTria a 19 Omega-5 (f416), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	rTria a 19 Omega-5 (f416), IgE < 0.35 Interpretive Comment: Omega-5-Gliadin Risk marker for systemic reactions. Marker for wheat allergy persistence.

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Considered specific marker for wheat food allergy. Units: KU/L CF: - - -
Russian thistle (w11), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Russian thistle (w11), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -
Rye Grass (g5), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Rye Grass (g5), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -
S-Sulfocysteine	60D	5 mL Urine (Random). Store and send frozen.	Creatinine Not available for random urine Units: µmol/L CF: - - - S-Sulfocysteine 1 - 15 Units: mmol/mol cr CF: - - -
Saccharomyces cer. Antibodies	21D	1 mL Serum. Assay includes both the IgA and IgG Antibodies. Avoid grossly hemolyzed, lipemic or microbial contaminated specimens.	Anti-Saccharomyces cer. IgA Negative: <20 Borderline: 20 - 25

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Positive: >25 Units: KEU/L CF: - - - Anti-Saccharomyces cer. IgG Negative: <20 Borderline: 20 - 25 Positive: >25 Units: KEU/L CF: - - -
Saquinavir	10D	3 mL Plasma (Heparin). Avoid gel-separator tubes. Separate within 2h of collection and transfer to clean transfer vial. Store and send frozen. Preferred collection time is trough collected within 30 min prior to the next dose or 6-14h post dose (twice daily dosing), 12-26h post dose (once daily dosing). Indicate collection time on specimen and requisition. The 2 mL specimen is sufficient for analysis of multiple antiretroviral drugs with a reduced fee for multiple drugs on the same specimen. Minimum volume is 200 µL.	Saquinavir Target level: Approximately 0.10 Units: mg/L CF:
Seafood Mix (Fx2), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to an allergen mix (Cod,Tuna,Shrimp,Blue Mussel,Salmon). This assay provides a single qualitative result only. It does not provide information on the amount of IgE specific for any of the component allergens within the mix. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Seafood Mix (Fx2), IgE Negative Units: KU/L CF: - - -
Selenium	10D	13 mL Urine (Random). Collect and transfer in metal-free container. Provide date of birth and gender. Indicate "Random". Avoid mineral supplements for 5 days.	Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mmol/L CF: - - - Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mg/L CF: - - - Selenium-U 20.0 - 90.0

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Units: µg/L CF: - - - Selenium-U 0.25 - 1.14 Units: µmol/L CF: - - - Selenium-U Age and gender related See [Trace Metals Ref. Values] table Units: µmol/mol cr CF: - - - Selenium-U Age and gender related See [Trace Metals Ref. Values] table Units: µg/g cr CF: - - -
Selenium	10D	13 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date, 24 hour volume and gender. Avoid mineral supplements for 5 days.	Creatinine-U24h Male: 3.5 - 25.0 Female: 2.6 - 20.0 Units: mmol/L CF: - - - Creatinine-U24h Male: 8.6 - 19.4 Female: 6.3 - 13.4 Units: mmol/d CF: - - - Selenium-U 20.0 - 90.0 Units: µg/L CF: - - - Selenium-U 0.25 - 1.14 Units: µmol/L CF: - - - Selenium-U24h 30.3 - 130.3 Units: µg/d CF: - - - Selenium-U24h 0.38 - 1.65

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Units: µmol/d CF: - - -
Selenium	10D	3 mL Plasma (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Separate as soon as possible and transfer plasma to polypropylene vial. Results may be falsely elevated if the specimen is not separated within 30 minutes and/or hemolysis is present.	Selenium - P 0 - 12m: 56.9 - 95.6 1 - 5y: 96.4 - 143.8 6 - 9y: 100.8 - 161.4 >= 10y: 105.3 - 160.4 Units: µg/L CF: Selenium - P 0 - 12m: 0.72 - 1.21 1 - 5y: 1.22 - 1.82 6 - 9y: 1.28 - 2.04 >= 10y: 1.33 - 2.03 Units: µmol/L CF:
Selenium	10D	3 mL Erythrocyte. Collect K2-EDTA blood in contaminant-free tube. Separate and transfer erythrocytes to a polypropylene transfer vial. Store and send frozen - See Collection instructions link above.	Selenium - E 227 - 365 Units: µg/L CF: Selenium - E 2.9 - 4.6 Units: µmol/L CF:
Selenium	10D	6 mL Whole Blood (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Store and send cold.	Selenium - WB 160 - 261 Units: µg/L CF: Selenium - WB 2.0 - 3.3 Units: µmol/L CF:
Selenium	15D	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck - for long hair only use the first inch or so closest to the scalp. If unable to weigh the hair, submit 1 heaping teaspoon (10-20 mL). Submit in a plastic bag. The test should not be ordered if hair has been bleached, permed or dyed in the last two months. This metal is included in the Essential (Hair) Panel.	Selenium - H 0.50 - 1.80 Units: µg/g CF: Selenium - H 6.3 - 22.8 Units: nmol/g CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Selenium	15D	0.001 g Tissue. Samples for analysis may include paraffin blocks or frozen tissue in saline or formalin. Needle biopsies are also acceptable in formalin. If fixed in formalin, please send an extra tube of formalin. Store and send frozen.	Source Units: CF: Selenium - Tissue Not Available Units: µg/g CF: Selenium - Tissue Not Available Units: nmol/g CF:
Selenium	15D	0.001 g Liver. Samples for analysis may include paraffin blocks or frozen tissue in saline or formalin. Needle biopsies are also acceptable in formalin. If fixed in formalin, please send an extra tube of formalin. Store and send frozen.	Selenium - Liver 0.110 - 0.845 Units: µg/g CF: Selenium - Liver 1.39 - 10.70 Units: nmol/g CF:
Selenium	10D	15 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date and 24-h volume. Avoid mineral supplements for 5 days.	Selenium - U 0.25 - 1.14 Units: µmol/L CF: µg/L x 0.0127 Selenium - U24h 0.38 - 1.65 Units: µmol/d CF: µg/d x 0.0127
Selenium	10D	15 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Avoid mineral supplements for 5 days.	Selenium - U 0.25 - 1.14 Units: µmol/L CF: µg/L x 0.0127
Selenium	10D	2 mL Plasma (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Avoid gel-separator tube. Separate as soon as possible and transfer plasma to polypropylene vial. Store and send cold.	Selenium - P 0-12m: 0.72 - 1.21 1-5y: 1.22 - 1.82 6-9y: 1.28 - 2.04 >=10y: 1.33 - 2.03 Units: µmol/L CF: µg/L x 0.0127

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Selenium	10D	2 mL Erythrocyte. Collect K2-EDTA blood in contaminant-free tube. Separate and transfer erythrocytes to a polypropylene transfer vial. Store and send frozen - See Collection Instructions link above.	Selenium - E 2.9 - 4.6 Units: µmol/L CF: µg/L x 0.0127
Selenium	10D	4 mL Whole Blood (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Do not open tube or separate. Store and send cold.	Selenium - WB 2.0 - 3.3 Units: µmol/L CF: µg/L x 0.0127
Serology Rubella Antibody (IgG)-Immunity	3D	1 mL Separated serum (Red-top). Collect specimen, separate serum and transport cold. State immunity (whether patient received vaccination or not).	Rubella Antibody (IgG) NON-REACTIVE Units: CF:
Serology Varicella Zoster Antibody (IgG)	6D	1 mL Separated serum (Red-top). Collect specimen, separate serum and transport cold. For dialysis patients, 1 mL plasma (Heparin) is acceptable. For bone marrow patients indicate whether sample is from patient or potential donor.	Varicella Zoster Antibody(IgG) NON-REACTIVE Units: CF:
Serotonin	20D	1 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. Submit two 1 mL aliquots if possible. A low tryptophan diet is recommended for 48h 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.	Serotonin-U24h <=1133 Units: nmol/d CF: ng/24h x 5.68 Creatinine-U24h Male: 3.5 - 25.0 Female: 2.6 - 20.0 Units: mmol/L CF: Creatinine-U24h Male: 8.6 - 19.4 Female: 6.3 - 13.4 Units: mmol/d CF:
Serotonin	20D	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	Serotonin - Serum Male & Female: 170 - 1134 Units: nmol/L CF: ng/mL x 5.68

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
		as aspirin, cortocotropins, MAO inhibitors, phenacetin, catecholamines, reserpine and nicotine.	
Sertraline	5D	1 mL Serum or Plasma (Heparin). Avoid gel-separator tubes. Collect trough specimen prior to morning dose. Patient should be on the drug for at least a week prior to specimen collection.	Sertraline Therapeutic: Unknown No toxicity <980 Units: nmol/L CF: - - -
Setomelanomma rostrata (m8), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Setomelanomma rostrata(m8),IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -
Sex Hormone Binding Globulin	9D	2 mL Serum.	Sex Hormone Binding Globulin M: 10 - 57 F: 18 - 144 (non-pregnant) Units: nmol/L CF: µg/dL x 34.7
Sheep sorrel (w18), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Sheep sorrel (w18), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Sickle Cell Test	3D	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.	Sickling Test Negative Units: Qual. test CF: - - -
Silver	10D	13 mL Urine (Random). Collect and transfer in metal-free container. Provide date of birth and gender. Indicate "Random".	Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mmol/L CF: - - - Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mg/L CF: - - - Silver-U 0.000 - 0.050 Units: µg/L CF: - - - Silver-U 0.00 - 0.46 Units: nmol/L CF: - - - Silver-U Age and gender related See [Trace Metals Ref. Values] table Units: nmol/mol cr CF: - - - Silver-U Age and gender related See [Trace Metals Ref. Values] table Units: ng/g cr CF: - - -
Silver	10D	13 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date, 24 hour volume and gender.	Creatinine-U24h Male: 3.5 - 25.0 Female: 2.6 - 20.0 Units: mmol/L CF: - - - Creatinine-U24h

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Male: 8.6 - 19.4 Female: 6.3 - 13.4 Units: mmol/d CF: - - - Silver-U 0.000 - 0.050 Units: µg/L CF: - - - Silver-U 0.00 - 0.46 Units: nmol/L CF: - - - Silver-U24h 0.000 - 0.066 Units: µg/d CF: - - - Silver-U24h 0.00 - 0.61 Units: nmol/d CF: - - -
Silver	10D	3 mL Erythrocyte. Collect K2-EDTA blood in contaminant-free tube. Separate and transfer erythrocytes to a polypropylene transfer vial. Store and send frozen - See Collection instructions link above.	Silver - E 0.00 - 0.15 Units: µg/L CF: Silver - E 0.0 - 1.4 Units: nmol/L CF:
Silver	10D	6 mL Whole Blood (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Store and send cold.	Silver - WB 0.00 - 0.34 Units: µg/L CF: Silver - WB 0.0 - 3.2 Units: nmol/L CF:
Silver	15D	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck - for long hair only use the first inch or so closest to the scalp. If unable to weigh the hair, submit 1 heaping teaspoon (10-20 mL). Submit in a plastic bag. The test should not be ordered if hair has been bleached,	Silver - H 0.0000 - 0.2500 Units: µg/g CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
		permed or dyed in the last two months. This metal is included in the Toxic (Hair) Panel.	Silver - H 0.00 - 2.32 Units: nmol/g CF:
Silver	10D	15 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date and 24-h volume. Avoid mineral supplements for 5 days.	Silver - U 0.0 - 27.9 Units: nmol/L CF: Silver - U24h 0.0 - 27.9 Units: nmol/d CF:
Silver	10D	15 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Avoid mineral supplements for 5 days.	Silver - U 0.0 - 27.9 Units: nmol/L CF: µg/L x 9.27
Silver	10D	2 mL Plasma (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Avoid gel-separator tube. Separate as soon as possible and transfer plasma to polypropylene vial. Store and send cold.	Silver - P 0.00 - 1.86 Units: nmol/L CF: ng/L x 0.00927
Silver	10D	2 mL Erythrocyte. Collect K2-EDTA blood in contaminant-free tube. Separate and transfer erythrocytes to a polypropylene transfer vial. Store and send frozen - See Collection Instructions link above.	Silver - E 0.0 - 1.4 Units: nmol/L CF: ng/L x 0.00927
Silver	10D	4 mL Whole Blood (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Do not open tube or separate. Store and send cold.	Silver - WB 0.0 - 3.2 Units: nmol/L CF: ng/L x 0.00927
Skeletal Muscle Antibodies	10D	1 mL Serum.	Skeletal Muscle Antibodies Not detected Units: Titre CF: - - -
Skin Antibodies	7D	3 mL Serum. Antibodies will be titred if positive.	Basement Membrane Zone Ab Negative Titred if positive. Units: Qual. Test CF: Basement Membrane Zn Ab Titre Negative

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Units: Titre CF: Pemphigus Antibody Negative Titred if positive. Units: Qual. Test CF: Pemphigus Antibody Titre Negative Units: Titre CF:
Sodium	2D	1 mL Fluid / Faeces. Indicate source of fluid clearly on requisition. Faeces: Submit 5 mL naturally fluid faeces. Formed faeces is not acceptable.	Sodium - Fluid Not available. Units: mmol/L CF: mEq/L x 1.00
Sodium	3D	10 mL Urine (Random). Indicate collection date and "Random".	Sodium - Urine (24h) Not available for random urine. Units: mmol/L CF: - - -
Sodium	10D	13 mL Urine (Random). Collect and transfer in metal-free container. Provide date of birth and gender. Indicate "Random". Avoid mineral supplements for 5 days.	Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mmol/L CF: - - - Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mg/L CF: - - - Sodium-U 920 - 4598 Units: mg/L CF: - - - Sodium-U 40 - 200 Units: mmol/L CF: - - - Sodium-U Age and gender related See [Trace Metals Ref. Values] table

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Units: mol/mol cr CF: - - - Sodium-U Age and gender related See [Trace Metals Ref. Values] table Units: g/g cr CF: - - -
Sodium	10D	13 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date, 24 hour volume and gender. Avoid mineral supplements for 5 days.	Creatinine-U24h Male: 3.5 - 25.0 Female: 2.6 - 20.0 Units: mmol/L CF: - - - Creatinine-U24h Male: 8.6 - 19.4 Female: 6.3 - 13.4 Units: mmol/d CF: - - - Sodium-U 920 - 4598 Units: mg/L CF: - - - Sodium-U 40 - 200 Units: mmol/L CF: - - - Sodium-U24h 920 - 4989 Units: mg/d CF: - - - Sodium-U24h 40 - 217 Units: mmol/d CF: - - -
Sodium	15D	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck - for long hair only use the first inch or so closest to the scalp. If unable to weigh the hair, submit 1 heaping teaspoon (10-20 mL). Submit in a plastic bag. The test should not be ordered if hair has been bleached, permed or dyed in the last two months. This metal is included in the Essential (Hair) Panel.	Sodium - H 5.0 - 65.0 Units: µg/g CF: Sodium - H 0.22 - 2.83 Units: µmol/g CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Sodium	3D	10 mL Urine (24h). Indicate 24 h urine volume and date of collection.	Sodium - Urine (24h) 40 - 220 Units: mmol/d CF: mEq/24h x 1.00
Somatostatin	12D	2 mL Plasma. Collect specimen in a pre-chilled EDTA tube. Separate and freeze immediately. Do not thaw. Store and send frozen.	Somatostatin Adult: < = 30 Units: pg/mL CF:
Soy rGly m 4 PR-10 (f353), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Soy rGly m 4 PR-10 (f353), IgE < 0.35 Interpretive Comment: PR-10 protein. Associated with both systemic reactions and local reactions. Labile to heat and digestion. Associated with allergy to birch and birch-related tree pollens. Units: KU/L CF: - - -
Soy rGly m 5 (f431), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Soy rGly m 5 (f431), IgE < 0.35 Interpretive Comment: Storage protein. Associated with severe reaction. Stable to heat and digestion. Units: KU/L CF: - - -
Soy rGly m 6 (f432), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Soy rGly m 6 (f432), IgE < 0.35 Interpretive Comment: Storage protein. Associated with severe reaction. Stable to heat and digestion. Units: KU/L CF: - - -
Sperm Antibody	12D	1 mL Serum.	Sperm Antibody (IgG)

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			< 20 Units: % Binding CF: Binding Location (IgG) Not Applicable Units: CF: Sperm Antibody (IgA) < 20 Units: % Binding CF: Binding Location (IgA) Not Applicable Units: CF:
Strontium	10D	13 mL Urine (Random). Collect and transfer in metal-free container. Provide date of birth and gender. Indicate "Random". Avoid mineral supplements for 5 days.	Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mmol/L CF: - - - Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mg/L CF: - - - Strontium-U 30.0 - 160.0 Units: µg/L CF: - - - Strontium-U 0.34 - 1.82 Units: µmol/L CF: - - - Strontium-U Age and gender related See [Trace Metals Ref. Values] table Units: µmol/mol cr CF: - - - Strontium-U Age and gender related

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			See [Trace Metals Ref. Values] table Units: µg/g cr CF: - - -
Strontium	10D	13 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date, 24 hour volume and gender. Avoid mineral supplements for 5 days.	Creatinine-U24h Male: 3.5 - 25.0 Female: 2.6 - 20.0 Units: mmol/L CF: - - - Creatinine-U24h Male: 8.6 - 19.4 Female: 6.3 - 13.4 Units: mmol/d CF: - - - Strontium-U 30.0 - 160.0 Units: µg/L CF: - - - Strontium-U 0.34 - 1.82 Units: µmol/L CF: - - - Strontium-U24h 40 - 230 Units: µg/d CF: - - - Strontium-U24h 0.46 - 2.62 Units: µmol/d CF: - - -
Strontium	15D	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck - for long hair only use the first inch or so closest to the scalp. If unable to weigh the hair, submit 1 heaping teaspoon (10-20 mL). Submit in a plastic bag. The test should not be ordered if hair has been bleached, permed or dyed in the last two months. This metal is included in the Essential (Hair) Panel.	Strontium - H 0.30 - 5.38 Units: µg/g CF: Strontium - H 3.4 - 61.3 Units: nmol/g CF:
Strontium	10D	15 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date and 24-h volume. Avoid mineral supplements for 5 days.	Strontium - U 0.34 - 1.82 Units: µmol/L CF: µg/L x 0.0114

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Strontium - U24h 0.46 - 2.62 Units: µmol/d CF: µg/d x 0.0114
Strontium	10D	15 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Avoid mineral supplements for 5 days.	Strontium - U 0.34 - 1.82 Units: µmol/L CF: µg/L x 0.0114
Strychnine: Screen	2D	10 mL Urine (Random).	Strychnine Screen Not detected Units: Qual. test CF: - - -
Succinylcholine (c202), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Succinylcholine (c202), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -
Sugar Beet (Weed) (w210), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Sugar Beet (Weed) (w210), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -
Sugar Chromatography	15D	1 mL Urine (Random). Store and send frozen.	Sugar Chromatography Descriptive Report

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Units: None CF:
Sugar-Beet Seed (f227), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Sugar-Beet Seed (f227), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -
Sulfamethoxazole	7D	1 mL Serum. Collect serum in a plain red-top tube. Gel-separator tube is not acceptable. Serum for a peak level should be drawn 60 minutes after dose. Separate within 2 hours of draw. Grossly lipemic, grossly hemolyzed and grossly icteric specimens are unsuitable.	Sulfamethoxazole > 50 Units: µg/mL CF:
Sulfatide Antibodies	10D	2 mL Serum. Draw blood in plain red-top tube and send cold. Serum gel tube acceptable.	Sulfatide ELISA IgG Titer Negative <1:2000 Positive >= 1:2000 Samples in the borderline range have an elevated level of anti-sulfatide antibodies on the screen assay, but the level of antibodies is below the positive cut off value. Units: CF: Sulfatide ELISA IgM Titer Negative <1:2000 Positive >= 1:2000 Samples in the borderline range have an elevated level of anti-sulfatide antibodies on the screen assay, but the level of antibodies is below the positive cut off value.

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Units: CF:
Sulfatides	20D	5 mL Urine (Random). Include the sediment. Store and send frozen.	Sulfatide 0 - 170 Units: µg/L CF: - - -
Sulfur	10D	13 mL Urine (Random). Collect and transfer in metal-free container. Provide date of birth and gender. Indicate "Random". Avoid mineral supplements for 5 days.	Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mmol/L CF: - - - Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mg/L CF: - - - Sulfur-U 140.0 - 600.0 Units: mg/L CF: - - - Sulfur-U 4.4 - 18.7 Units: mmol/L CF: - - - Sulfur-U Age and gender related See [Trace Metals Ref. Values] table Units: mmol/mol cr CF: - - - Sulfur-U Age and gender related See [Trace Metals Ref. Values] table Units: mg/g cr CF: - - -
Sulfur	10D	13 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date, 24 hour volume and gender. Avoid mineral supplements for 5 days.	Creatinine-U24h Male: 3.5 - 25.0 Female: 2.6 - 20.0 Units: mmol/L CF: - - - Creatinine-U24h

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Male: 8.6 - 19.4 Female: 6.3 - 13.4 Units: mmol/d CF: - - - Sulfur-U 140.0 - 600.0 Units: mg/L CF: - - - Sulfur-U 4.4 - 18.7 Units: mmol/L CF: - - - Sulfur-U24h 250 - 802 Units: mg/d CF: - - - Sulfur-U24h 7.8 - 25.0 Units: mmol/d CF: - - -
Sulfur	15D	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck - for long hair only use the first inch or so closest to the scalp. If unable to weigh the hair, submit 1 heaping teaspoon (10-20 mL). Submit in a plastic bag. The test should not be ordered if hair has been bleached, permed or dyed in the last two months. This metal is included in the Essential (Hair) Panel.	Sulfur - H 45.0 - 55.0 Units: mg/g CF: Sulfur - H 1.40 - 1.72 Units: mmol/g CF:
Sulfur	10D	15 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date and 24-h volume. Avoid mineral supplements for 5 days.	Sulfur - U Not Available Units: mmol/L CF: mg/L x 0.0312 Sulfur - U24h 7.8 - 25.0 Units: mmol/d CF: mg/d x 0.0312
Sulfur	10D	15 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Avoid mineral supplements for 5 days.	Sulfur - U Not Available Units: mmol/L CF: mg/L x 0.0312

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Sweet Vernal Grass (g1), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Sweet Vernal Grass (g1), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -
Synovial Fluid Examination	5D	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. Specimens must be delivered to HICL within 2 days of collection, Monday to Thursday or may not be acceptable.	Synovial Fluid Examination See interpreted results on report. Units: Qual. test CF: - - -
Tacrolimus (FK506)	2D	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.	Tacrolimus Interpret results using clinical information and treatment protocols. Units: µg/L CF: - - -
Telopeptide-N	10D	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.	Creatinine (Random Urine) Not Available Units: mmol/L CF: - - - N-Telopeptide (Random Urine) 5.0 - 65.0 Units: nmol/mmol cr. CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Telopeptide-N	10D	10 mL Urine (24h). 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.	Collection date Units: CF: Creatinine (24h) Not Available Units: mmol/L CF: - - - N-Telopeptide - Urine (24h) 5.0 - 65.0 Units: nmol/mmol cr. CF: - - -
Testosterone: Bioavailable	10D	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 - Total Male: 10 - 35 Female: 0.00 - 2.00 Units: nmol/L CF: ng/dL x 0.0347 Testosterone - Bioavailable Male: 2.0 - 8.6 Female: 0.00 - 0.20 Units: nmol/L CF: ng/dL x 0.0347
Testosterone: Total	3D	2 mL Serum or Plasma (Heparin). Indicate date of birth and sex for interpretation of result.	Testosterone - Total Male (>= 18y): 8.0 - 32.0 Female (>= 18y): 0.4 - 2.0 Units: nmol/L CF: ng/dL x 0.0347
Tetanus Toxoid (Rc208), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Tetanus Toxoid (Rc208), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Thallium	10D	13 mL Urine (Random). Collect and transfer in metal-free container. Provide date of birth and gender. Indicate "Random".	Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mmol/L CF: - - - Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mg/L CF: - - - Thallium-U 0.000 - 0.400 Units: µg/L CF: - - - Thallium-U 0.00 - 1.96 Units: nmol/L CF: - - - Thallium-U Age and gender related See [Trace Metals Ref. Values] table Units: nmol/mol cr CF: - - - Thallium-U Age and gender related See [Trace Metals Ref. Values] table Units: ng/g cr CF: - - -
Thallium	10D	13 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date, 24 hour volume and gender.	Creatinine-U24h Male: 3.5 - 25.0 Female: 2.6 - 20.0 Units: mmol/L CF: - - - Creatinine-U24h Male: 8.6 - 19.4 Female: 6.3 - 13.4 Units: mmol/d CF: - - - Thallium-U

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			0.000 - 0.400 Units: µg/L CF: - - - Thallium-U 0.00 - 1.96 Units: nmol/L CF: - - - Thallium-U24h 0.000 - 0.600 Units: µg/d CF: - - - Thallium-U24h 0.00 - 2.93 Units: nmol/d CF: - - -
Thallium	10D	3 mL Erythrocyte. Collect K2-EDTA blood in contaminant-free tube. Separate and transfer erythrocytes to a polypropylene transfer vial. Store and send frozen - See Collection instructions link above.	Thallium - E 0.000 - 0.026 Units: µg/L CF: Thallium - E 0.00 - 0.13 Units: nmol/L CF:
Thallium	10D	6 mL Whole Blood (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Store and send cold.	Thallium - WB 0.000 - 0.039 Units: µg/L CF: Thallium - WB 0.00 - 0.19 Units: nmol/L CF:
Thallium	15D	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck - for long hair only use the first inch or so closest to the scalp. If unable to weigh the hair, submit 1 heaping teaspoon (10-20 mL). Submit in a plastic bag. The test should not be ordered if hair has been bleached, permed or dyed in the last two months. This metal is included in the Toxic (Hair) Panel.	Thallium - H 0.0000 - 0.0020 Units: µg/g CF: Thallium - H 0.0 - 9.8 Units: pmol/g CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Thallium	10D	15 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date and 24-h volume. Avoid mineral supplements for 5 days.	Thallium - U 0.0 - 24.5 Units: nmol/L CF: µg/dL x 48.9 Thallium - U24h 0.0 - 24.5 Units: nmol/d CF: µg/d x 4.89
Thallium	10D	15 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Avoid mineral supplements for 5 days.	Thallium - U 0.0 - 24.5 Units: nmol/L CF: µg/dL x 48.9
Thallium	10D	2 mL Erythrocyte. Collect K2-EDTA blood in contaminant-free tube. Separate and transfer erythrocytes to a polypropylene transfer vial. Store and send frozen - See Collection Instructions link above.	Thallium - E 0.00 - 0.13 Units: nmol/L CF: µg/dL x 48.9
Thallium	10D	4 mL Whole Blood (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Do not open tube or separate. Store and send cold.	Thallium - WB 0.00 - 9.78 Units: nmol/L CF: µg/dL x 48.9
Theophylline	1D	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.	Theophylline Bronchodilation: 55 - 110 Premature Apnea: 33 - 70 Toxic: Greater than 110 Units: µmol/L CF: mg/L x 5.55
Thiopurine Methyltransferase: Genotype	21D	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. If your test order does not specify Genotyping (or use the correct test mnemonic) TPMT Activity will be analyzed.	TPMT Genotype Results interpreted on report. Units: - - - CF: - - -
Thiopurine Methyltransferase	5D	4 mL Whole Blood (EDTA). Avoid gel-separator tubes. Falsely low TPMT activity is observed in patients being treated with aminosalicylates. Red blood cell transfusion pre-test may produce false indication of patient's TPMT status. Patients should be tested prior to Azathioprine or 6-MP treatment. Do not freeze - store and send cold. Specimen must be	TPMT Activity Low Activity: < 10 Intermediate: 10 - 40 Normal Activity: > 40 Units: nmol/g Hb/h CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
		received at ICL Mon-Thu within 4 days of collection. State collection date. TPMT Genotyping is also available - see separate listing.	
Thioridazine	2D	3 mL Serum. Avoid gel-separator tubes.	Thioridazine - Serum Therapeutic: 2.7 - 4.0 Toxic: Greater than 27 Units: µmol/L CF: mg/L x 2.70
Thrombin Time	1D	3 mL Plasma (Citrate). Separate and freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.	Thrombin Time 12.5 - 16.0 Units: seconds CF: - - -
Thyroglobulin Antibodies	2D	1 mL Serum or Plasma (Na-Heparin). Lithium Heparin and sodium citrate Plasma are not suitable. Store and send frozen.	Thyroglobulin Antibodies Hashimoto's autoimmune thyroiditis Negative: <= 115 kIU/L Positive: > 115 kIU/L Interference in Thyroglobulin assay Does not interfere: <= 22 kIU/L Does interfere: > 22 kIU/L Units: kIU/L CF: - - -
Thyroglobulin	5D	2 mL Serum.	Thyroglobulin < 50.0 Post Ablation: < 1.0 Circulating Thyroglobulin Antibodies may interfere with measurement of Thyroglobulin Units: µg/L CF: pmol/L x 0.67
Thyroid Antibodies	2D	1 mL Serum or Plasma (Na-Heparin). Analysis includes Thyroglobulin Antibodies and Thyroid Peroxidase antibodies. Store and send frozen.	Thyroid Peroxidase Antibody Negative: <40 Positive: >40 Units: kIU/L CF: - - - Thyroglobulin Antibody Negative: <115 Positive: >115

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Units: kIU/L CF: - - -
Thyroid Peroxidase Antibodies	2D	1 mL Serum or Plasma (Na-Heparin). Store and send frozen.	Thyroid Peroxidase Ab. Negative: <40 Positive: >40 Units: kIU/L CF: - - -
Thyroid Receptor Antibody	15D	1 mL Serum. Indicate thyroid status of patient including presence of exophthalmos. Lipaemic or hemolyzed specimens are not acceptable.	Thyroid Receptor Ab. Normal: < 1.0 Borderline: 1.0 - 2.0 Elevated: > 2.0 Units: IU/L CF: - - -
Thyroid Stimulating Immunoglobulin (TSI)	5D	1 mL Serum. Separate serum and send refrigerated or frozen.	TSI < 140 Units: % Baseline CF:
Thyrotrophin Stimulating Hormone	1D	1 mL Serum or Plasma (Hep. or EDTA).	Thyrotropin (TSH) 0.40 - 3.80 Units: mIU/L CF: µIU/mL x 1.00
Thyrotropin Binding Inhibitory Ig	7D	1 mL Serum. Store and send cold.	TBII < = 16 Units: % Inhibition CF:
Thyroxine Binding Globulin	15D	1 mL Serum. Plasma is not suitable for analysis.	Thyroxine Binding Globulin 1 - 11 m: 315 - 685 1 - 9 y: 278 - 500 10 y and over: 260 - 575 Units: nmol/L CF: µg/dL x 12.9
Thyroxine: Free	2D	1 mL Serum or Plasma (Hep. or EDTA).	Thyroxine - Free Male & Female (non-pregnant): 12 - 21 Female (pregnant): First trimester: 11 - 19 Second trimester: 10 - 17 Third trimester: 8 - 15 Units: pmol/L CF: ng/dL x 12.9

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Timothy Grass (g6), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Timothy Grass (g6), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -
Tin	10D	13 mL Urine (Random). Collect and transfer in metal-free container. Provide date of birth and gender. Indicate "Random". Avoid mineral supplements for 5 days.	Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mmol/L CF: - - - Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mg/L CF: - - - Tin-U 0.5 - 5.0 Units: µg/L CF: - - - Tin-U 4.2 - 42.2 Units: nmol/L CF: - - - Tin-U Age and gender related See [Trace Metals Ref. Values] table Units: µmol/mol cr CF: - - - Tin-U Age and gender related See [Trace Metals Ref. Values] table

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Units: µg/g cr CF: - - -
Tin	10D	13 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date, 24 hour volume and gender. Avoid mineral supplements for 5 days.	Creatinine-U24h Male: 3.5 - 25.0 Female: 2.6 - 20.0 Units: mmol/L CF: - - - Creatinine-U24h Male: 8.6 - 19.4 Female: 6.3 - 13.4 Units: mmol/d CF: - - - Tin-U 0.5 - 5.0 Units: µg/L CF: - - - Tin-U 4.2 - 42.2 Units: nmol/L CF: - - - Tin-U24h 1.0 - 7.0 Units: µg/d CF: - - - Tin-U24h 8.4 - 59.0 Units: nmol/d CF: - - -
Tin	15D	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck - for long hair only use the first inch or so closest to the scalp. If unable to weigh the hair, submit 1 heaping teaspoon (10-20 mL). Submit in a plastic bag. The test should not be ordered if hair has been bleached, permed or dyed in the last two months. This metal is included in the Essential (Hair) Panel.	Tin - H 0.05 - 0.40 Units: µg/g CF: Tin - H 0.42 - 3.37 Units: nmol/g CF:
Tin	10D	15 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date and 24-h volume. Avoid mineral supplements for 5 days.	Tin - U 4.8 - 77.9 Units: nmol/L CF: ng/L x 0.00842

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Tin - U24h 4.8 - 77.9 Units: nmol/d CF: ng/d x 0.00842
Tin	10D	15 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Avoid mineral supplements for 5 days.	Tin - U 4.8 - 77.9 Units: nmol/L CF: ng/L x 0.00842
Tin	10D	4 mL Whole Blood (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Do not open tube or separate. Store and send cold.	Tin - WB 0 - 42 Units: nmol/L CF: ng/L x 0.00842
Tipranavir	10D	3 mL Plasma (Heparin). Avoid gel-separator tubes. Separate within 2h of collection and transfer to clean transfer vial. Store and send frozen. Preferred collection time is trough collected within 30 min prior to the next dose or 6-14h post dose (twice daily dosing), 12-26h post dose (once daily dosing). Indicate collection time on specimen and requisition. The 2 mL specimen is sufficient for analysis of multiple antiretroviral drugs with a reduced fee for multiple drugs on the same specimen. Minimum volume is 200 µL.	Tipranavir 20.0 - 30.0 Units: mg/L CF:
Tissue Transglutaminase Abs (IgA & IgG)	5D	1 mL Serum. Individual Tissue Transglutaminase antibody IgA and IgG also available. (See separate listings.)	Tissue Transglut. Ab. IgA <20 Negative 20 - 30 Weakly Positive >30 Positive False negative results may occur in patients who are IgA deficient. Units: CU CF: - - - Tissue Transglut. Ab. IgG <20 Negative 20 - 30 Weakly Positive >30 Positive Units: CU CF: - - -
Tissue Transglutaminase Antibody (IgA)	5D	1 mL Serum. This assay is also included in the Celiac Profile and Tissue Transglutaminase (IgA & IgG) panel. (See separate listings.)	Tissue Transglut. Ab. IgA <20 Negative

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			20 - 30 Weakly Positive >30 Positive False negative results may occur in patients who are IgA deficient. Units: CU CF: - - -
Tissue Transglutaminase Antibody (IgG)	5D	1 mL Serum. This assay is also included in the Celiac Profile and Tissue Transglutaminase (IgA & IgG) panel. (See separate listings.)	Tissue Transglut. Ab IgG <20 Negative 20 - 30 Weakly Positive >30 Positive Units: CU CF:
Titanium	10D	3 mL Plasma (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Separate as soon as possible and transfer plasma to polypropylene vial.	Titanium - P 0.00 - 0.38 Units: µg/L CF: Titanium - P 0.0 - 7.9 Units: nmol/L CF:
Titanium	10D	3 mL Erythrocyte. Collect K2-EDTA blood in contaminant-free tube. Separate and transfer erythrocytes to a polypropylene transfer vial. Store and send frozen - See Collection instructions link above.	Titanium - E 0.0 - 1.1 Units: µg/L CF: Titanium - E 0.0 - 23.0 Units: nmol/L CF:
Titanium	10D	6 mL Whole Blood (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Store and send cold.	Titanium - WB 0.0 - 1.0 Units: µg/L CF: Titanium - WB 0.0 - 20.9 Units: nmol/L CF:
Titanium	15D	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck - for long hair only use the first inch or so closest to the scalp. If unable to weigh the hair, submit 1 heaping teaspoon (10-20 mL). Submit	Titanium - H 0.00 - 0.40 Units: µg/g CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
		in a plastic bag. The test should not be ordered if hair has been bleached, permed or dyed in the last two months. This metal is included in the Toxic (Hair) Panel.	Titanium - H 0.0 - 8.4 Units: nmol/g CF:
Titanium	10D	2 mL Plasma (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Avoid gel-separator tube. Separate as soon as possible and transfer plasma to polypropylene vial. Store and send cold.	Titanium - P 0.0 - 7.9 Units: nmol/L CF: ng/L x 0.0209
Titanium	10D	2 mL Erythrocyte. Collect K2-EDTA blood in contaminant-free tube. Separate and transfer erythrocytes to a polypropylene transfer vial. Store and send frozen - See Collection Instructions link above.	Titanium - E 0.0 - 23.0 Units: nmol/L CF: ng/L x 0.0209
Titanium	10D	4 mL Whole Blood (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Do not open tube or separate. Store and send cold.	Titanium - WB 0.0 - 20.9 Units: nmol/L CF: ng/L x 0.0209
Tobramycin: Peak	1D	1 mL Serum. Avoid gel-separator tubes. Submit peak specimen (i.e. collected 1 h after IM or 15 minutes after a 60 minute IV (or 30 minutes after a 30 minute IV) dosage). Collect with third dose if possible. Separate and freeze as soon as possible. Store and send frozen. Label Peak specimen and requisition clearly.	Tobramycin - Peak Once daily dosing (normal renal function): Half-hour post: 12 - 20 8 h post: 1.5 - 6.0 Conventional dosing: Half-hour post: 5 - 8 Units: mg/L CF: - - -
Tobramycin: Trough	1D	1 mL Serum. Avoid gel-separator tubes. Submit trough specimen (i.e. collected 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.	Tobramycin - Trough Once daily dosing: Less than 1.0 Conventional dosing: Less than 1.0 Units: mg/L CF: - - -
Topiramate	7D	1 mL Serum or Plasma (Hep. or EDTA). Avoid gel-separator tubes. Store and send frozen.	Topiramate Therapeutic: 15 - 60 Risk of toxicity increases above 75 µmol/L.

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Units: µmol/L CF: µg/mL x 2.95
Toxic Metals Panel - Combined	10D	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck - for long hair only use the first inch or so closest to the scalp. If unable to weigh the hair, submit 1 heaping teaspoon (10-20 mL). Submit in a plastic bag. The test should not be ordered if hair has been bleached, permed or dyed in the last two months. PANEL NOTE: This Panel contains 19 Essential Trace Metals and 14 Toxic Trace Metals - see [TM Panel Components].	Toxic Metals Panel - Combined See individual test listings Units: CF:
Toxic Metals Panel - Toxic	10D	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck - for long hair only use the first inch or so closest to the scalp. If unable to weigh the hair, submit 1 heaping teaspoon (10-20 mL). Submit in a plastic bag. The test should not be ordered if hair has been bleached, permed or dyed in the last two months. PANEL NOTE: This Panel contains 14 Toxic Trace Metals - see [TM Panel Components].	Toxic Metals Panel - Toxic See individual test listings Units: CF:
Trace Metals Panel - Combined	10D	13 mL Urine (Random). Collect and transfer in metal-free container. Provide collection date. Indicate date of birth and gender. Indicate "Random". Avoid mineral supplements for five days. PANEL NOTE: This Panel contains 17 Essential Trace Metals and 13 Toxic Trace Metals and urine Creatinine - see [TM Panel Components].	Trace Metals Panel - Combined See individual test listings Units: CF:
Trace Metals Panel - Combined	10D	13 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date, 24 hour volume and gender. Avoid mineral supplements for five days. PANEL NOTE: This Panel contains 17 Essential Trace Metals and 13 Toxic Trace Metals and urine Creatinine - see [TM Panel Components].	Trace Metals Panel - Combined See individual test listings Units: CF:
Trace Metals Panel - Combined	10D	3 mL Plasma (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube, Separate as soon as possible and transfer to metal-free polypropylene vial. Chromium, Manganese, Selenium, Vanadium and Zinc may be falsely elevated if the specimen is not separated within 30 minutes and/or hemolysis is present. PANEL NOTE: This Panel contains 8 Essential Trace Metals and 2 Toxic Trace Metals - see [TM Panel Components].	Trace Metals Panel - Combined See individual test listings Units: CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Trace Metals Panel - Combined	10D	6 mL Erythrocyte. Collect 2 K2-EDTA tubes in contaminant-free tubes. Separate and transfer erythrocytes to a polypropylene transfer vial. Store and send frozen - See Collection instructions link above. PANEL NOTE: This Panel contains 10 Essential Trace Metals and 6 Toxic Trace Metals - see [TM Panel Components].	Trace Metals Panel - Combined See individual test listings Units: CF:
Trace Metals Panel - Essential	10D	13 mL Urine (Random). Collect and transfer in metal-free container. Provide date of birth and gender. Indicate "Random". Avoid mineral supplements for 5 days. PANEL NOTE: This Panel contains 17 Essential Trace Metals and urine Creatinine - see [TM Panel Components].	Trace Metals Panel - Essential See individual test listings Units: CF:
Trace Metals Panel - Essential	10D	13 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date, 24 hour volume and gender. Avoid mineral supplements for five days. PANEL NOTE: This Panel contains 17 Essential Trace Metals and urine Creatinine - see [TM Panel Components].	Trace Metals Panel - Essential See individual test listings Units: CF:
Trace Metals Panel - Essential	10D	3 mL Erythrocyte. Collect K2-EDTA blood in contaminant-free tube. Separate and transfer erythrocytes to a polypropylene transfer vial. Store and send frozen - See Collection instructions link above. PANEL NOTE: This Panel contains 10 Essential Trace Metals - see [TM Panel Components].	Trace Metals Panel - Essential See individual test listings Units: CF:
Trace Metals Panel - Essential	10D	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck - for long hair only use the first inch or so closest to the scalp. If unable to weigh the hair, submit 1 heaping teaspoon (10-20 mL). Submit in a plastic bag. The test should not be ordered if hair has been bleached, permed or dyed in the last two months. PANEL NOTE: This Panel contains 19 Essential Trace Metals - see [TM Panel Components].	Trace Metals Panel - Essential See individual test listings Units: CF:
Trace Metals Panel - Toxic	10D	13 mL Urine (Random). Collect and transfer in metal-free container. Provide collection date. Indicate date of birth and gender. Indicate "Random". PANEL NOTE: This Panel contains 13 Toxic Trace Metals and urine Creatinine - see [TM Panel Components].	Trace Metals Panel - Toxic See individual test listings Units: CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Trace Metals Panel - Toxic	10D	13 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date, 24 hour volume and gender. PANEL NOTE: This Panel contains 13 Toxic Trace Metals and urine Creatinine - see [TM Panel Components].	Trace Metals Panel - Toxic See individual test listings Units: CF:
Trace Metals Panel - Toxic	10D	6 mL Whole Blood (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Store and send cold. PANEL NOTE: This Panel contains 6 Toxic Trace Metals - see [TM Panel Components].	Trace Metals Panel - Toxic See individual test listings Units: CF:
Trace Metals Panel - Toxic	10D	3 mL Erythrocyte. Collect K2-EDTA blood in contaminant-free tube. Separate and transfer erythrocytes to a polypropylene transfer vial. Store and send frozen - See Collection instructions link above. PANEL NOTE: This Panel contains 6 Toxic Trace Metals - see [TM Panel Components].	Trace Metals Panel - Toxic See individual test listings Units: CF:
Transferrin Receptor - Soluble	10D	0.5 mL Serum. Gel-separator tube preferred. Store and send frozen.	Soluble Transferrin Receptor 1.8 - 4.6 It is reported that African Americans may have slightly higher values. Units: mg/L CF:
Transferrin	3D	1 mL Serum or Plasma (Li Heparin). Separate as soon as possible. Store and send frozen.	Transferrin < or = 5 d: 1.3 - 4.0 6 d to 9 y: 1.8 - 3.3 10 to 19 y: 1.9 - 3.8 over 19 y: 2.0 - 3.6 Units: g/L CF: mg/dL x 0.0100
Trazodone	8D	1.5 mL Serum. Avoid gel-separator tubes. Collect trough specimen prior to next dose after steady state (2 days or more after commencement of therapy). Separate within 2 hours of collection.	Trazodone 800 - 1600 (Trough Collection) Units: ng/mL CF: nmol/L x 0.372 Trazodone 2152 - 4304 (Trough Collection) Units: nmol/L CF: ng/mL x 2.69

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Tree Mix (Tx1), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to an allergen mix Birch,Elm,Maple (box elder),Oak,Walnut This assay provides a single qualitative result only. It does not provide information on the amount of IgE specific for any of the component allergens within the mix. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Tree Mix (Tx1), IgE Negative Units: KU/L CF: - - -
Tree Mix (Tx2), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to an allergen mix Cottonwood,Elm,Maple (box elder),Pecan,Oak This assay provides a single qualitative result only. It does not provide information on the amount of IgE specific for any of the component allergens within the mix. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Tree Mix (Tx2), IgE Negative Units: KU/L CF: - - -
Tree Mix (Tx9), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to an allergen mix Alder,Birch,Hazel,Oak,Willow This assay provides a single qualitative result only. It does not provide information on the amount of IgE specific for any of the component allergens within the mix. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Tree Mix (Tx9), IgE Negative Units: KU/L CF: - - -
Trifluoperazine	2D	10 mL Urine (Random).	Trifluoperazine - Urine Not detected Units: µmol/L CF: mg/L x 2.45
Triglycerides	1D	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.	Triglycerides Less than 1.80 Units: mmol/L CF: mg/dL x 0.0113
Triiodothyronine: Free	2D	1 mL Serum or Plasma (Li-Hep./EDTA).	Triiodothyronine (T3) - Free 4.0 - 6.8 Units: pmol/L CF: ng/dL x 15.7
Triiodothyronine: Total	3D	1 mL Serum. Store and send cold.	Triiodothyronine: Total Male & Female: 0 - 5d: 0.7 - 5.4

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			6d - 12m: 1.4 - 4.6 1 - 11y: 1.4 - 4.1 12y - adult: 1.2 - 3.2 Units: nmol/L CF: - - -
Trimipramine	2D	10 mL Urine (Random).	Trimipramine - Urine Not detected Units: µmol/L CF: mg/L x 3.40
Trimipramine	5D	3 mL Serum or Plasma (EDTA). Avoid gel-separator tubes and separate as soon as possible. Submit trough specimen (i.e. collected within 1 hour prior to next dose or at least 12 hours after last dose.)	Trimipramine Therapeutic: 0.17 - 1.00 Toxic: > 1.70 Units: µmol/L CF: mg/L x 3.40
Troponin I	2D	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 I 0.00 - 0.07 Units: µg/L CF: - - -
Troponin T	2D	2 mL Plasma (Li Heparin). Do not use oxalate/fluoride tubes. Avoid hemolysis. Store and send frozen.	Troponin T < = 14 Units: ng/L CF: - - -
Trypsinogen	20D	1 mL Serum. Store and send frozen. Trypsinogen Assay measures Trypsin-Like Immunoreactivity.	Trypsin 10.0 - 57.0 Units: ng/mL CF: - - -
Tryptase	7D	1 mL Serum. Store and send frozen. Plasma is not suitable. To assess anaphylaxis collect specimen between 15 to 180 minutes after suspected anaphylactic event. To assess systemic mastocytosis or mast cell activation syndrome the specimen may be collected at any time. Separate as soon possible.	Tryptase 3.8 - 11.4 Units: µg/L CF: - - -
Tumor Necrosis Factor Alpha	30D	1 mL 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".	Tumor Necrosis Factor Alpha < 3.4 Units: pg/mL CF:
Tyrophagus Putrescentiae (d72), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be	Tyrophagus Putres. (d72), IgE IgE Activity Allergy Index

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
		used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	< 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -
Uranium-RU	10D	13 mL Urine (Random). Collect and transfer in metal-free container. Provide date of birth and gender. Indicate "Random".	Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mmol/L CF: - - - Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mg/L CF: - - - Uranium-U 0.000 - 0.010 Units: µg/L CF: - - - Uranium-U 0.000 - 0.042 Units: nmol/L CF: - - - Uranium-U Age and gender related See [Trace Metals Ref. Values] table Units: nmol/mol cr CF: - - - Uranium-U Age and gender related See [Trace Metals Ref. Values] table Units: ng/g cr CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Uranium	10D	13 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date, 24 hour volume and gender.	Creatinine-U24h Male: 3.5 - 25.0 Female: 2.6 - 20.0 Units: mmol/L CF: - - - Creatinine-U24h Male: 8.6 - 19.4 Female: 6.3 - 13.4 Units: mmol/d CF: - - - Uranium-U 0.000 - 0.010 Units: µg/L CF: - - - Uranium-U 0.000 - 0.042 Units: nmol/L CF: - - - Uranium-U24h 0.000 - 0.015 Units: µg/d CF: - - - Uranium-U24h 0.000 - 0.063 Units: nmol/d CF: - - -
Uranium	15D	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck - for long hair only use the first inch or so closest to the scalp. If unable to weigh the hair, submit 1 heaping teaspoon (10-20 mL). Submit in a plastic bag. The test should not be ordered if hair has been bleached, permed or dyed in the last two months. This metal is included in the Toxic (Hair) Panel.	Uranium - H 0.000 - 0.060 Units: µg/g CF: Uranium - H 0.00 - 0.25 Units: nmol/g CF:
Uranium	10D	15 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date and 24-h volume. Avoid mineral supplements for 5 days.	Uranium - U 0.000 - 0.042 Units: nmol/L CF: ng/L x 0.0042 Uranium - U24h

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			0.000 - 0.042 Units: nmol/d CF: ng/d x 0.0042
Uranium	10D	15 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Avoid mineral supplements for 5 days.	Uranium - U 0.000 - 0.042 Units: nmol/L CF: ng/L x 0.0042
Urea	2D	1 mL Fluid / Faeces. Indicate source of fluid clearly on requisition. Faeces: Submit 5 mL naturally fluid faeces. Formed faeces is not acceptable.	Urea - Fluid Not available. Units: mmol/L CF: mg/dL x 0.357
Urea	3D	5 mL Urine (24h). Keep cold during collection and transportation. Indicate 24 h volume and date of collection.	Urea - Urine 430 - 700 Units: mmol/d CF: mg/d x 0.00595
Uric Acid	2D	1.0 Serum or Plasma (Heparin). Separate serum or plasma from cells within 2 hours of collection. Avoid hemolysis. Gel-separator tubes are acceptable.	Uric Acid M: 260 - 450 F: 190 - 360 Units: µmol/L CF:
Uric Acid	3D	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 - Urine 1.5 - 4.4 Diet dependent Units: mmol/d CF: mg/d x 0.00595
Uric Acid	2D	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. rr} {Indicate source/sample type in NOTES}	Uric Acid - Fluid Not available. Units: µmol/L CF: mg/dL x 59.5
Valproic Acid: Free	3D	1 mL Serum or Plasma (Heparin). Avoid gel-separtator tubes.	Valproic Acid - Free 35 - 70 Units: µmol/L CF: mg/L x 6.93 Valproic Acid - Total 350 - 700 Toxic: Over 1400 Units: µmol/L CF: mg/L x 6.93

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Valproic Acid	1D	0.5 mL Serum. Avoid gel-separator tubes. Submit trough specimen (i.e. collected within 1 hour prior to next dose.)	Valproic Acid Therapeutic: 350 - 700 Toxic: Greater than 1400 Units: µmol/L CF: mg/L x 6.93
Vanadium	10D	13 mL Urine (Random). Collect and transfer in metal-free container. Provide date of birth and gender. Indicate "Random". Avoid mineral supplements for 5 days.	Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mmol/L CF: - - - Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mg/L CF: - - - Vanadium-U 0.013 - 0.120 Units: µg/L CF: - - - Vanadium-U 0.26 - 2.36 Units: nmol/L CF: - - - Vanadium-U Age and gender related See [Trace Metals Ref. Values] table Units: nmol/mol cr CF: - - - Vanadium-U Age and gender related See [Trace Metals Ref. Values] table Units: ng/g cr CF: - - -
Vanadium	10D	13 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date, 24 hour volume and gender. Avoid mineral supplements for 5 days.	Creatinine-U24h Male: 3.5 - 25.0 Female: 2.6 - 20.0 Units: mmol/L CF: - - - Creatinine-U24h

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Male: 8.6 - 19.4 Female: 6.3 - 13.4 Units: mmol/d CF: - - - Vanadium-U 0.013 - 0.120 Units: µg/L CF: - - - Vanadium-U 0.26 - 2.36 Units: nmol/L CF: - - - Vanadium-U24h 0.02 - 0.20 Units: µg/d CF: - - - Vanadium-U24h 0.40 - 3.90 Units: nmol/d CF: - - -
Vanadium	10D	3 mL Plasma (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Separate as soon as possible and transfer plasma to polypropylene vial. Results may be falsely elevated if the specimen is not separated within 30 minutes and/or hemolysis is present.	Vanadium - P 0.032 - 0.088 Units: µg/L CF: Vanadium - P 0.6 - 1.7 Units: nmol/L CF:
Vanadium	10D	3 mL Erythrocyte. Collect K2-EDTA blood in contaminant-free tube. Separate and transfer erythrocytes to a polypropylene transfer vial. Store and send frozen - See Collection instructions link above.	Vanadium - E 0.012 - 0.054 Units: µg/L CF: Vanadium - E 0.2 - 1.1 Units: nmol/L CF:
Vanadium	10D	6 mL Whole Blood (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Store and send cold.	Vanadium - WB 0.026 - 0.106 Units: µg/L CF:

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Vanadium - WB 0.5 - 2.1 Units: nmol/L CF:
Vanadium	15D	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck - for long hair only use the first inch or so closest to the scalp. If unable to weigh the hair, submit 1 heaping teaspoon (10-20 mL). Submit in a plastic bag. The test should not be ordered if hair has been bleached, permed or dyed in the last two months. This metal is included in the Essential (Hair) Panel.	Vanadium - H 0.002 - 0.030 Units: µg/g CF: Vanadium - H 0.04 - 0.59 Units: nmol/g CF:
Vanadium	10D	15 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date and 24-h volume. Avoid mineral supplements for 5 days.	Vanadium - U 0.0 - 10.0 Units: nmol/L CF: ng/L x 0.0196 Vanadium - U24h 0.0 - 10.0 Units: nmol/d CF: ng/d x 0.0196
Vanadium	10D	15 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Avoid mineral supplements for 5 days.	Vanadium - U 0.0 - 10.0 Units: nmol/L CF: ng/L x 0.0196
Vanadium	10D	2 mL Erythrocyte. Collect K2-EDTA blood in contaminant-free tube. Separate and transfer erythrocytes to a polypropylene transfer vial. Store and send frozen - See Collection Instructions link above.	Vanadium - E Not Available Units: nmol/L CF: ng/L x 0.0196
Vanadium	10D	4 mL Whole Blood (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Do not open tube or separate. Store and send cold.	Vanadium - WB 0.0 - 1.0 Units: nmol/L CF: ng/L x 0.0196
Vancomycin: Peak	1D	1 mL Serum. Avoid gel-separator tubes. Submit peak specimen (i.e. collected 1 h after IM or 15 minutes after a 60 minute IV (or 30 minutes after a 30 minute IV) dosage). Collect with third dose if possible. Separate and freeze as soon as possible. Store and send frozen. Label Peak specimen and requisition clearly.	Vancomycin - Peak Therapeutic Range Not Available Units: mg/L CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Vancomycin: Trough	1D	1 mL Serum. Avoid gel-separator tubes. Submit trough specimen (i.e. collected 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.	Vancomycin - Trough Therapeutic: 5 - 20 Units: mg/L CF: - - -
Vanillylmandelic Acid	10D	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.	Vanillylmandelic Acid - Total Adult: 10.0 - 35.0 Units: µmol/d CF: mg/24h x 5.05 VMA/Creatinine Ratio Adult: < 4.0 Units: µmol/mmol Cr. CF: µg/mg Cr x0.57
Varicella Zoster Virus PCR, Spinal fluid	2D	1 mL CSF. Collect spinal fluid in a sterile screw cap tube from the Lumbar Puncture Tray. Send tube #2, 3, or 4. Freeze and ship on dry ice. Indicate source of fluid.	Herpes Simplex 1 DNA NEGATIVE Units: CF: Herpes Simplex 2 DNA NEGATIVE Units: CF: Varicella Zoster DNA NEGATIVE Units: CF:
Vasoactive Intestinal Polypeptide	5D	1 mL Plasma (EDTA). Collect sample after an 8 hour fast. Separate and freeze immediately. If the specimen thaws, it is unsuitable for analysis. This test should not be requested on patients who have recently received radioactive material.	VIP <75 Units: pg/mL CF:
Venlafaxine	15D	1.0 mL Serum or Plasma (EDTA). Store and send frozen. If the specimen thaws, it is unsuitable for analysis. Gel separator is acceptable.	Norvenlafaxine See Below Units: µmol/L CF: - - - Venlafaxine See Below Units: µmol/L CF: - - - Venlafaxine + Norvenlafaxine

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			0.36 - 1.5 Units: µmol/L CF: - - -
Venom rApi m 1 (i208), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Venom rApi m 1 (i208), IgE < 0.35 Interpretive Comment: Phospholipase A2 Honey Bee. Associated with clinical reactions to honey bee. A specific marker for honey bee venom sensitization. Units: KU/L CF: - - -
Venom rPol d 5 (i210), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Venom rPol d 5 (i210), IgE < 0.35 Interpretive Comment: Antigen 5 Paper wasp. Associated with clinical reactions to wasps, particularly paper wasp. A specific marker for sensitization to venom of vespids, particularly paper wasp. There is a cross-reactivity between Antigen 5 from different wasps, hornets and paper wasps Units: KU/L CF: - - -
Venom rVes v 1 (i211), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Venom rVes v 1 (i211), IgE < 0.35 Interpretive Comment: Phospholipase A1 Common Wasp. Associated with clinical reactions to wasps. A specific marker for sensitizations to and hornets. There is a cross-reactivity between

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			phospholipase A1 from different wasps and hornets. Units: KU/L CF: - - -
Venom rVes v 5 (i209), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Venom rVes v 5 (i209), IgE < 0.35 Interpretive Comment: Antigen 5 Common wasp. Associated with clinical reactions to wasps. A specific marker for sensitizations to venom of vespids, particularly common wasp and hornets. There is a cross-reactivity between Antigen 5 from different wasps, hornets and paper wasps Units: KU/L CF: - - -
Viscosity	5D	6 mL Serum. Collect and separate at 37°. Separate as soon as possible and refrigerate serum. Send cold. Plasma is not suitable for analysis.	Viscosity 1.4 - 1.8 (relative to water) Units: No units CF: - - -
Vitamin A	12D	1 mL Serum or Plasma (EDTA/LiHep). 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 A 1.2 - 2.8 Units: µmol/L CF: µg/dL x 0.035
Vitamin B12	2D	3 mL Serum. Store and send frozen.	Vitamin B12 145 - 569 Units: pmol/L CF: pg/mL x 0.738
Vitamin B1	7D	3 mL Whole Blood (EDTA). Collect fasting specimen. Protect from light within 1 hour of collection and during storage and transport. Store and send frozen. If the specimen thaws it is unsuitable for analysis. This assay measures the primary active form of Vitamin B1 (Thiamine diphosphate). Thiamine and thiamine monophosphate are not measured. Plasma analysis is also available - see separate listing.	Vitamin B1 - Whole Blood 70 - 180 Units: nmol/L CF: µg/dL x 29.6

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Vitamin B1	10D	2 mL Plasma (EDTA or Heparin). Avoid gel-separator tubes. 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. To assess body stores (thiamin deficiency) submit whole blood instead of plasma - refer to separate listing.	Vitamin B1 7 - 44 Units: nmol/L CF: µg/dL x 29.6
Vitamin B2	12D	2 mL Plasma (EDTA). Protect specimen from light. Specimen must be labeled inside and outside light-protecting wrap. Store and send frozen. Samples received frozen but not protected from light are acceptable.	Vitamin B2 6.2 - 39.0 Units: nmol/L CF:
Vitamin B6	10D	2 mL Plasma (EDTA or LiHeparin). 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 B6 20 -96 Units: nmol/L CF: ng/mL x 4.05
Vitamin C	10D	2 mL Serum or Plasma (LiHeparin). 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.	Ascorbic Acid/Vitamin C Greater than or equal to 25 Units: µmol/L CF: mg/dL x 56.8
Vitamin D (25-Hydroxy)	5D	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.	25-Hydroxy-Vitamin D >75: Desirable optimal for fracture prevention. <25: Deficient(diagnostic of nutrition deficiency, rickets or osteomalacia). <40: Insufficient (expect elevated PTH) <225: Physiologic range from exposure to UV light (aim for 75-225). >600: Potential hypercalcemia due to excess Vitamin D intake. Units: nmol/L CF: ng/mL x 2.50

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Vitamin E	7D	1 mL (Paediatric: 500 uL) Serum. Avoid hemolysis. Protect specimen from light. Specimen must be labelled inside and outside light-protecting wrap. Store and send frozen.	Vitamin E Newborn: 2.3 - 8.1 2 - 6 m: 5 - 14 7 - 24 m: 8 - 19 2 - 12 y: 12 - 21 Adult: 12 - 46 Units: µmol/L CF: mg/dL x 23.2
Vitamin K1	7D	2 mL Serum. Collect fasting sample (overnight 12-14 hours). For infants, draw prior to next feeding. Protect specimen from light. Specimen must be labelled inside and outside light-protecting wrap. Testing of nonfasting specimens or the use of vitamin K1 supplementation can result in elevated serum vitamin K1 concentrations. Store and send frozen.	Vitamin K1 > = 18y: 0.10 - 2.20 < 18y: Not Established Units: ng/mL CF:
Volatiles Screen	1D	1 mL Urine (Random). Collect specimen and seal to reduce evaporative loss of volatiles. Transport cold. Results are not for medicolegal purposes.	Ethanol, urine Not Detected Units: mmol/L CF: Methanol, urine Not Detected Units: mmol/L CF: Isopropanol, urine Not Detected Units: mmol/L CF: Acetone, urine Not Detected Units: mmol/L CF:
Von Willebrand Factor Activity	10D	1 mL Plasma (Citrate). Separate and freeze immediately. Store and send frozen. If the specimen thaws, it is unsuitable for analysis.	Von Willebrand Factor Activity Blood Group O: 0.48 - 1.24 Other Blood Groups: 0.67 - 1.70 Limitations: 1. The presence of rheumatoid factor may produce an over-estimation of the test result.

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			2. Some cases of type 2 Von Willebrand disease may give normal results with this activity assay. Units: U/mL CF: - - -
Von Willebrand Factor Antigen	5D	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).	VW Factor Antigen Blood Group O: 0.45 - 1.45 Other blood Groups: 0.50 - 2.00 Units: U/mL CF: % x 0.0100
Von Willebrand Ristocetin Co-Factor	5D	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).	VWF Ristocetin Co-Factor 0.50 - 2.00 Units: U/mL CF: % x 0.0100
Voriconazole	2D	0.5 mL Plasma (Heparin). Store and send frozen. Collect trough specimen immediately prior to next dose or at least 12 hours post-dose.	Voriconazole Therapeutic: 1.0 - 5.0 Toxic: > 6.0 (Trough) Units: mg/L CF:
Walnut (t10), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Walnut (t10), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -
Walnut Jug r 1 (f441), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Walnut Jug r 1 (f441), IgE < 0.35 Interpretive Comment: Storage protein (2S albumin). Heat and digestion stable.

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Highly abundant in walnut. Associated with systemic reactions. Units: KU/L CF: - - -
Walnut Jug r 3 (f442), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Walnut Jug r 3 (f442), IgE < 0.35 Interpretive Comment: Lipid transfer protein (LTP). Heat and digestion stable. Associated with local as well as systemic reactions. Units: KU/L CF: - - -
Warfarin	10D	1 mL Plasma (Heparin). Avoid gel-separator tubes.	Warfarin 3.3 - 9.8 Toxic: Over 9.8 Units: µmol/L CF: mg/L x 3.24
Weed Mix (Wx1), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to an allergen mix Common Ragweed,Mugwort,Lamb's Quarters,Plantain,Russian Thistle This assay provides a single qualitative result only. It does not provide information on the amount of IgE specific for any of the component allergens within the mix. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Weed Mix (Wx1), IgE Negative Units: KU/L CF: - - -
Western Ragweed (w2), IgE	10D	1 mL Serum. Store and send frozen. This assay detects IgE antibodies to specified target allergen. Refer to the [List of Allergens] that may also be used as a requisition. Submit sufficient specimen for number of IgE tests ordered. Each test requires 50 µL and 2 mL is sufficient for 10-12 tests.	Western Ragweed (w2), IgE IgE Activity Allergy Index < 0.35 0: No sensitivity 0.35 - 0.69 1: Low 0.70 - 3.49 2: Moderate 3.50 - 17.49 3: High 17.50 - 49.99 4: Very High 50 - 100 5: Very High > 100 6: Extremely High Units: KU/L CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Xylose Absorption Test (1h)	30D	2 mL Serum. Test may be conducted with either a 5g or 25g Xylose dose. Refer to separate listing for 2-hour test protocol. Collect baseline serum specimen (>8h fast), separate and label 2 mL aliquot. Administer Xylose dissolved in 250 mL water followed by another 250 mL water. Collect post-dose serum at 1h, separate and label 2 mL aliquot. Store and send specimens frozen. Specimens must be clearly labelled to distinguish baseline and timed (1 Hour) specimen.	Xylose - 1 Hour Interpretation Guide: 1h Post-Dose: 25g Xylose: >1.40 5g Xylose: >1.33 Units: mmol/L CF: - - -
Xylose Absorption Test (2h)	30D	2 mL Serum. Test may be conducted with either a 5g or 25g Xylose dose. Refer to separate listing for 1-hour test protocol. Collect baseline serum specimen (>8h fast), separate and label 2 mL aliquot. Administer Xylose dissolved in 250 mL water followed by another 250 mL water. Collect post-dose serum at 2h, separate and label 2 mL aliquot. Store and send specimens frozen. Specimens must be clearly labelled to distinguish baseline and timed (2 Hour) specimen.	Xylose - 2 Hour Interpretation Guide: 2h Post-Dose: 25g Xylose: >1.67 5g Xylose: >1.33 Units: mmol/L CF: - - -
Zinc Protoporphyrin	10D	6 mL Whole Blood (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. 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.	Zinc Protoporphyrin 0 - 70 Units: µmol/mol heme CF: - - -
Zinc	10D	13 mL Urine (Random). Collect and transfer in metal-free container. Provide date of birth and gender. Indicate "Random". Avoid mineral supplements for 5 days.	Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mmol/L CF: - - - Creatinine-U Age and gender related See [Trace Metals Ref. Values] table Units: mg/L CF: - - - Zinc-U 60.0 - 400.0 Units: µg/L CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			Zinc-U 0.9 - 6.1 Units: µmol/L CF: - - - Zinc-U Age and gender related See [Trace Metals Ref. Values] table Units: µmol/mol cr CF: - - - Zinc-U Age and gender related See [Trace Metals Ref. Values] table Units: µg/g cr CF: - - -
Zinc	10D	13 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date, 24 hour volume and gender. Avoid mineral supplements for 5 days.	Creatinine-U24h Male: 3.5 - 25.0 Female: 2.6 - 20.0 Units: mmol/L CF: - - - Creatinine-U24h Male: 8.6 - 19.4 Female: 6.3 - 13.4 Units: mmol/d CF: - - - Zinc-U 60.0 - 400.0 Units: µg/L CF: - - - Zinc-U 0.9 - 6.1 Units: µmol/L CF: - - - Zinc-U24h 98 - 602 Units: µg/d CF: - - - Zinc-U24h 1.5 - 9.2 Units: µmol/d CF: - - -

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
Zinc	10D	3 mL Plasma (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Separate as soon as possible and transfer plasma to polypropylene vial. Results may be falsely elevated if the specimen is not separated within 30 minutes and/or hemolysis is present.	Zinc - Plasma 0 - 1m: 647 - 1399 1 - 12m: 647 - 1301 1 - 4y: 673 - 1183 5 - 8y: 771 - 1072 9 - 12y, Male: 758 - 1007 9 - 12y, Female: 791 - 1176 >= 13y, M&F: 617 - 979 (Serum reference values are higher) Units: µg/L CF: Zinc - Plasma 0 - 1m: 9.9 - 21.4 1 - 12m: 9.9 - 19.9 1 - 4y: 10.3 - 18.1 5 - 8y: 11.8 - 16.4 9 - 12y, Male: 11.6 - 15.4 9 - 12y, Female: 12.1 - 18.0 >= 13y, M&F: 9.4 - 15.0 (Serum reference values are higher) Units: µmol/L CF:
Zinc	10D	3 mL Erythrocyte. Collect K2-EDTA blood in contaminant-free tube. Separate and transfer erythrocytes to a polypropylene transfer vial. Store and send frozen - See Collection instructions link above.	Zinc - E 0 - 12y: 5194 - 11946 >= 13y: 9026 - 15061 Units: µg/L CF: Zinc - E 0 - 12y: 79 - 183 >= 13y: 138 - 230 Units: µmol/L CF:
Zinc	15D	0.2 g Hair. Collect closest to the scalp from 6 to 8 locations near the nape of the neck - for long hair only use the first inch or so closest to the scalp. If unable to weigh the hair, submit 1 heaping teaspoon (10-20 mL). Submit in a plastic bag. The test should not be ordered if hair has been	Zinc - H 140 - 200 Units: µg/g CF: Zinc - H

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
		bleached, permed or dyed in the last two months. This metal is included in the Essential (Hair) Panel.	2.14 - 3.06 Units: µmol/g CF:
Zinc	15D	0.001 g Tissue. Samples for analysis may include paraffin blocks or frozen tissue in saline or formalin. Needle biopsies are also acceptable in formalin. If fixed in formalin, please send an extra tube of formalin. Store and send frozen.	Source Units: CF: Zinc _ Tissue Not Available Units: µg/g CF: Zinc _ Tissue Not Available Units: µmol/g CF:
Zinc	15D	0.001 g Liver. Samples for analysis may include paraffin blocks or frozen tissue in saline or formalin. Needle biopsies are also acceptable in formalin. If fixed in formalin, please send an extra tube of formalin. Store and send frozen.	Zinc - Liver 80.0 - 350.0 Units: µg/g CF: Zinc - Liver 1.22 - 5.36 Units: µmol/g CF:
Zinc	10D	15 mL Urine (24h). Collect and transfer in metal-free container. Provide collection date and 24-h volume. Avoid mineral supplements for 5 days.	Zinc - U 0.9 - 6.1 Units: µmol/L CF: µg/L x 0.0153 Zinc - U24h 1.5 - 9.2 Units: µmol/d CF: µg/d x 0.0153
Zinc	10D	15 mL Urine (Random). Collect and transfer in metal-free container. Indicate "Random". Avoid mineral supplements for 5 days.	Zinc - U 0.9 - 6.1 Units: µmol/L CF: µg/L x 0.0153
Zinc	10D	2 mL Plasma (K2-EDTA). Collect K2-EDTA blood in contaminant-free tube. Avoid gel-separator tube. Separate as soon as possible and transfer plasma to polypropylene vial. Store and send cold.	Zinc - P 0-1m: 9.9 - 21.4 1-12m: 9.9 - 19.9 1-4y: 10.3 - 18.1 5-8y: 11.8 - 16.4

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Test Name	Time	Specimen Requirements	Results/Reference Ranges
			9-12y, Male: 11.6 - 15.4 9-12y, Female: 12.1 - 18.0 >=13y, M&F: 9.4 - 15.0 Units: µmol/L CF: µg/L x 0.0153
Zinc	10D	2 mL Erythrocyte. Collect K2-EDTA blood in contaminant-free tube. Separate and transfer erythrocytes to a polypropylene transfer vial. Store and send frozen - See Collection Instructions link above.	Zinc - E 0-12y: 79 - 183 >=13y: 138 - 230 Units: µmol/L CF: µg/L x 0.0153

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