Clinical Lab Reference Range Guide

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
11-Deoxycortisol	Serum (red top), 1.0 mL	>3 m: 0.0-0.8 µg/dL Post metapyrone stimulation: >8.0 µg/dL	Reference Lab (Endocrine Science)			
17-Hydroxycorticosteroids	Urine, 24 h: collect in boric acid. Obtain urine container from Lab Central HA619.	4.0-14.0 mg/d	Reference Lab (ARUP)	Specimen must be refrigerated during collection	5 days	N
17-Hydroxyprogesterone	0.5 mL serum or plasma (EDTA or heparin)	Cord blood: 7.40-18.70 ng/mL 3 d-2 m: 0.10-9.40 ng/mL 3 m-11 y: nd-0.90 ng/mL 12 -20 y: nd-1.80 ng/mL Male adult: 0.40-3.30 ng/mL Female: Follicular 0.10-1.20 ng/mL Luteal 0.40-4.80 ng/mL Menopause 0.10-0.60 ng/mL	Reference Lab (ARUP)		3 days	N
17-Ketogenic steroids	Urine, 24 h; preserve with acetic acid. Obtain urine container from Lab Central, HA619. Refrigerate during collection	with report.	Reference Lab (ARUP)			
17-Ketosteroids	Urine, 24 h Refrigerate during collection.	with report	Reference Lab (ARUP)		4 days	No
17-Ketosteroids Fractionation, Urine	24 Hour urine, must be refrigerated during collection	with report	Reference Lab (ARUP)		12 days	N/A
5-Hydroxyindoleacetic acid quantitative	Urine, 24 h. Obtain Call lab, 7-1550 for food and drug restrictions	0-15 mg/d	Reference Lab (ARUP)	Refrigerate 24-hour specimens during collection.	4 days	N
5'Nucleotidase	Serum (red top), 1.0 mL	0-15 U/L	Reference Lab (ARUP)		3 days	N
A2 Hemoglobin	2 mL whole blood collected in EDTA or heparin.	1.5-3.5%	Core Lab			Not available

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
AATF	stool, 1 g	By report	Reference Lab (ARUP)			
ABO & Rh typing	Clotted bld. (red top), 10 mL. Infants: 1 Bullet Tube or 3.0mL Red Top	O+ 1 in 3 O- 1 in 15 A+ 1 in 3 A- 1 in 16 B+ 1 in 12 B- 1 in 67 AB+ 1 in 29 AB- 1 in 167	Blood Bank			
Acetaminophen, quantitative	Plasma, green top (PST), 1.0 mL	Therapeutic: 10-30 µg/mL Toxic: >150 µg/mL (4h post ingestion) >75 µg/mL (8h post ingestion) >40 µg/mL (12h post ingestion)	Toxicology			
Acetone, quantitative	Plasma, Green Top (PST), 1.0 mL	Negative Ketoacidosis: 10-70 mg/dL Occupational Exposure: <10 mg/dL Toxic: >20 mg/dL	Toxicology			
Acetylcholine Receptor Binding antibodies	Serum (red top or SST tube), 1.0 mL	Negative, 0-0.4 nmol/L Positive, 0.5 nmol/L or greater	Reference Lab (ARUP)		5 days	N/A
Acetylcholine Receptor Blocking antibodies	1 mL serum (SST tube)	Negative 0-15% blocking Indeterminate 16-24% blocking Positive 25% or greater blocking	Reference Lab (ARUP)		5 days	N/A
Acetylcholine Receptor Modulating Antibodies	1.0 mL serum (SST tube)	Negative: 0-20% modulating Indeterminate: 21-25% modulating Positive: 26% or greater modulating	Reference Lab (ARUP)		5 days	N/A
Acid fast bacteria (AFB) smear	Smears are made on all specimens with culture request. Contact laboratory for instructions.	No AFB seen	Microbiology			
Acid Phosphatase, prostatic	Serum (red top), 2.0 mL, unstable; send to lab immediately.	0-3.5 ng/mL	Reference Lab (ARUP)			
ACTH (Highly sensitive)	Plasma (purple top), 3.0 mL. Place in ice and send to lab immediately.	Female 6-58 pg/mL Male 7-69 pg/mL	Reference Lab (ARUP)			

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ACTH Stimulation Test	Serum (SST), 1.0 mL Repeat for prolonged infusion	Cortisol baseline: >5 µg/dL Cortisol post Cortrosyn: Rise above baseline: >7 µg/dL Peak response: > or equal to18 µg/dL Alpha-1 antitrypsin. Reference Lab ARUP: 100-200 mg/dL Cortisol, peak response: >20 µg/dL	Immunochemistry	[Short Test] (Adult dose: 250 µg Cortrosyn I.M.) [Prolonged Infusion] Adult dose: 50 units ACTH=500 µg Cortrosyn I.V. in 500 mL saline for 8h on each of 3 d; in primary adrenal insufficiency also give 2 mg/d of dexamethasone		
Activated Protein C Resistance	Citrated plasma (blue top, must be full). Do not draw from Hickman, arterial line or with ABG's.	Ratio >1.9	Core Lab		1 week	Not Available
Adenovirus culture	Tissue, body fluids, N-P aspirates Contact Virology, 3-5411.	No Adenovirus isolated	Microbiology			
Adenovirus titer	Serum (SST), 2.0 mL	<1:8	Reference Lab (ARUP)			
AFB susceptibilities	Performed routinely on first lab isolate.	Individual interpretation	Microbiology			
ALA-, quantitative	Urine, 24 h; Refrigerate during collection, 3.0 mL	Age g/24hr 3-8 .11-.68 9-12 .17-1.41 13-17 .29-1.87 Adults: .63-2.50	Reference Lab (Quest)			
Albumin	Plasma, green top (PST), 1.0 mL	M F <1y 2.6-3.6 2.6-3.6 g/dL 1y-17y 3.2-4.7 2.9-4.2 g/dL 18-59y 3.4-4.6 3.4-4.6 g/dL >59y 3.2-4.6 3.2-4.6 g/dL (Avg. 0.3 g higher in ambulatory patients)	Core Lab		2hr	1hr
Albumin, Fluid	Fluid, 0.5 mL	Not available	Core Lab			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Albumin, Urine, 24 h	Urine, 24 h or Random	0-20 mg/min 0-30 mg/g creatinine	Reference Lab (ARUP)			
Alcohols, quantitative	Plasma, green top (PST), 1.0 mL	Acetone: Toxic >20 mg/dL Ethanol: Toxic >80 mg/dL Isopropanol: Toxic >40 mg/dL Methanol: Toxic >20 mg/dL	Toxicology		1-4 hrs	1 hr
Aldolase	Serum (red top), 2.0 mL	0-1 m: 6.0-32.0 U/L 1m-17y: 3.0-12.0 U/L 17y up: 1.5-8.1 U/L	Reference Lab (ARUP)			
Aldosterone, serum	Serum (gold top), 2.0 mL	Upright: 4-31 ng/dL Supine: < 1.6-16 ng/Dl	Reference Lab (ARUP)			
Aldosterone, Urine, 24 h	Urine, 24h. Store on ice or refrigerate.	By report	Reference Lab (ARUP)		3 d	
Alkaline phosphatase	Plasma, green top (PST), 0.5 mL	M F <1m: 75-315 50-400 U/L 1m-11m: 80-380 125-340 U/L 1-3y: 100-350 110-315 U/L 4-6y: 90-300 100-300 U/L 7-9y: 90-315 70-325 U/L 10-12y: 40-360 50-330 U/L 13-15y: 75-390 50-162 U/L 16-17y: 50-170 50-120 U/L 18-59y: 40-110 37-110 U/L >59y: 56-119 53-141 U/L	Core Lab		2h	1h
Alkaline phosphatase, bone specific	Serum (red top), 1.0 mL	Premenopausal women: 11.6-26.9 U/L Post menopausal women: 14.2-42.7 U/L Males >25 yr. 15.0-41.3 U/L	Reference Lab (ARUP)			
Alpha Subunit of Pituitary Glycoprotein	Serum (red top), 1.0 mL	By report	Reference Lab (Endocrine Sciences)			
Alpha-1 antitrypsin		By report	Reference Lab (ARUP)			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Alpha-1-antitrypsin phenotype (includes AAT)	Serum (gold top), 3.0 mL	By report	Reference Lab (ARUP)			
Alphafetoprorin, amniotic fluid	Amniotic fluid. Contact Cytogenetics	By report	Reference Lab (FBR)			
Alpha-fetoprotein (pregnancy)	Serum (SST), 3.0 mL		Immunochemistry	Amniotic Fluid: Contact Cytgenetics		
Alpha-fetoprotein (tumor marker)	Serum (SST), 2.0 mL	AFP Pediatric Ranges ng/mL cord: 9100-190,000 1 d: 7900-170,000 2 d: 7000-140,000 3 d: 6000-130,000 4 d: 5300-110,000 5 d: 4600-97,000 6 d: 4000-84,000 7 d: 3500-74,000 8-14 d: 1500-59,000 15-21 d: 580-23,000 22-28 d: 320-6300 29-45 d: 30-5800 46-60 d: 16-2000 3 m (61-90 d): 6-1000 4 m (91-120 d): 3-420 5 m (121-150 d): 2-220 6 m (151-180 d): 1-130 7 m - 2y (181-720 d): 1-87 > 2 y: 1-15"	Immunochemistry			
Alpha-L-iduronidase	Whole Blood (green top), 7.0 mL. Do not order F, Sat, or Sun.		Reference Lab (Miami Child. Hosp.)			
Alprazolam	Serum (red top), 3.0 mL	Therapeutic range: anxiety: 10-40 ng/mL Phobia & panic: 50-100 ng/mL	Reference Lab (ARUP)			

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ALT: Alanine aminotranferase	Plasma, green top (PST), 1.0 mL	M F 1-7d 6-40 7-40 U/L 8-28d 10-40 8-32 U/L 1-3m 13-39 12-47 U/L 4-6m 12-42 12-37 U/L 7-11m 13-45 12-41 U/L 1-3y 5-45 5-45 U/L 4-6y 10-25 10-25 U/L 7-9y 10-35 10-35 U/L 10-11y 10-35 10-30 U/L 12-13y 10-55 10-30 U/L 14-15y 10-45 5-30 U/L 16-19y 10-40 5-35 U/L >19y 17-60 11-35 U/L	Core Lab		2h	1h
Aluminum	Serum (dark blue top w/no additive), 3.0 mL. Obtain tube from Lab Central, HA619.	0-15 ug/L	Reference Lab (ARUP)		4 DAYS	N/A
Amebiasis Ab titers	Serum (red top), 2.0 mL	<1:32	Reference Lab (Parasitic Disease Consultants)			
Amikacin	Plasma, green top (PST), 1.0 mL	Therapeutic Range Peak: 25-35 µg/mL Trough: 5-10 µg/mL Less sev. inf.: 1-4 µg/mL Life threat. Inf.: 4-10 µg/mL Toxic Range Peak: >35 µg/mL Trough: >10 µg/mL	TDM			
Amino acids, quantitative, Urine random	Urine, Random urine; freeze immediately.	By report	Reference Lab (Baylor)			
Amino acids, quantitative, plasma	Plasma (green top), 3.0 mL. Place on ice and deliver immediately to laboratory.	By report	Reference Lab (Baylor)			
Amiodarone plus metabolite	Serum (red top), 3.0 mL	Therap: 1.0-3.0 ug/mL Toxic: >3.0 ug/mL	Reference Lab (ARUP)			

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Amitriptyline, quantitative	Serum (red top), 4.0 mL	Therapeutic Range: Nortriptyline: 50-150 ng/mL Total drug: 95-250 ng/mL Toxic: >500 ng/mL	Reference (ARUP)	Includes Metabolite		
Ammonia	Plasma, green top (PST); place on ice and deliver to lab immediately. Tube must be >2/3 full.	0d-1m: <50 µmol/L >1 m: 9-35 µmol/L	Core Lab		2h	1h

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Amniotic Fluid	15-30 mL peripheral blood, fetal blood, bone marrow aspirates, amniotic fluid, chorionic villi, skin and other tissues, abortus products and some solid tumors	Interpretation given with report.	Cytogenetics	The Cytogenetics Laboratory is open from 8:00am to 4:30pm Monday through Friday. It is located in HL423. University Hospital, 257-3736. The laboratory performs chromosome analysis on peripheral blood, fetal blood, bone marrow aspirates, amniotic fluid, chorionic villi, skin and other tissues, abortus products and some solid tumors. All specimens must be labeled with the patient's name and hospital number and must be accompanied by a chromosome analysis request form. Form J529 (Genetic/Prenatal) is to be used for blood, amniotic fluid, chorionic villi, skin, tissue and abortus specimens. Form J530 (Oncology) is to be used for bone marrow aspirates, tumors and blood from Hematology/Oncology patients. The requisition form must contain the patient's name, hospital number, sex, date of birth, source of specimen, date of specimen collection, and the attending physician's name. Pertinent clinical information should also be noted on the form. Any specimens not meeting these requirements cannot be accepted. All specimens must be		

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
				collected in such a way as to insure viability and sterility of the sample. If urgent processing is required on a specimen, please call the laboratory. Urgent specimens require hand delivery to the laboratory. Call 7-3736 with questions		
Amylase	Plasma, green top (PST), 1.0 mL	>1y 28-150 U/L	Core Lab		2h	1h
Amylase isoenzymes	Serum (red top), 3.0 mL	Pancreatic: 0-68 U/L Salivary: 0-85 U/L By report	Reference Lab (ARUP)			
Amylase, Fluid	Fluid, 0.5 mL	Not available	Core Lab			
Amylase, Urine random	Urine, random, 0.5 mL	Not available	Core Lab			
Amylase, Urine, 24 h	Urine (requires-timed specimen, 2-24 h)	>12 y: 1-17 U/h	Core Lab			
Anaerobe culture (gram stain)	Sterile anaerobe culture container (Available in Mat. Mgmt.). Submit to lab within 30 min of collection.	Not applicable	Microbiology			
Androstenedione	Serum (red top), 2.0 mL. Fasting morning specimen preferred, collect one week before or after menstrual period.	Adult, M: 0.7-2.0 ng/mL F: 0.6-3.0 ng/mL Pregnancy: 1.00-10.00 ng/mL Possible Panice Range: Value greater than 10 ng/mL suggests a virilizing tumor	Reproductive Endocrinology			
Angiotensin-1-converting enzyme	Serum (red top), 2.0 mL	0-14y: 18-90 IU/L 15-17y: 14-78 IU/L 18y up: 9-67 IU/L	Reference Lab (ARUP)			

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Anion gap	Calculated result Na - (Cl + CO2)	5-11 mmol/L	Core Lab	Component of: Basic Metabolic Panel Comprehensive Metabolic Panel Electrolyte Panel Renal Panel		
Anti SS-A	Serum (red top), 1.0 mL	Negative at 0-20 EU/mL	Core Lab	Order as ENA II.		
Anti SS-B	Serum (red top), 1.0 mL	Negative at 0-20 EU/mL	Core Lab	Order as ENA II.		
Antibody identification, RBC's	Clotted blood (red top), 10 mL; Whole Blood (purple top), 7.0 mL	Negative	Blood Bank			
Antibody screen,red blood cells	Clotted blood (red top), 10 mL.	Negative	Blood Bank	Send report of diagnosis, history of recent and past transfusions, pregnancy and drug therapy.		
Antibody titration,RBC's	Clotted blood (red top), 10 mL	Negative	Blood Bank	Includes antibody indentification		
Antibody, HLA	Serum (red top), 1.0 mL		Immunomolecular Pathology			
Anticardiolipin antibody	Serum (red top), 1.0 mL	IgG: <23 GPL units/mL IgM: <11 MPL units/mL	Core Lab			Not available
Anti-Centromere	Serum (red top), 1.0 mL	Negative at 1:80 dilution	Core Lab	Order as ANA		
Anti-DNA antibodies	Serum (red top), 1.0 mL	Negative at 1:10 dilution	Core Lab			
Anti-ENA antibodies	Serum (red top), 1.0 mL	0-20 EU/ml	Core Lab			
Anti-GBM	Serum (red top), 2.0 mL. (IgA and IgG)	Negative	Reference Lab (ARUP)			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Anti-GM1 Ganglioside	Serum (red top), 7.0 mL	By report	Reference Lab (Wash. Univ.)			
Anti-GM1 Ganglioside, MAG and sulfatide	Serum (red top), 10 mL	By report	Reference Lab (Wash. Univ.)			
Anti-MAG and Anti-Sulfatide	Serum (red top), 10 mL	By report	Reference Lab (WUSM)			
Anti-Mitochondrial Antibodies	Serum (red top), 1.0 mL	Negative at 1:20 dilution	Core Lab	Positive screens will be titered automatically		
Anti-Neutrophil Antibody	Serum (red top), 2.0 mL	Negative	Reference Lab (ARUP)			
Anti-Neutrophil Cytoplasmic Antibody	Serum (red top), 1.0 mL	Negative at 1:20	Core Lab			
Anti-Nuclear Antibodies	Serum (red top), 1.0 mL	Negative at <1:80 dilution; if positive, the pattern will be reported and the serum will be titered.	Core Lab			
Anti-OKT3 (OKT3 Antibodies)	Serum (red top), 3.0 mL	Negative	Reference Lab (Oregon Health Sciences)			
Anti-parietal antibodies	Serum (red top), 2.0 mL	Negative	Reference Lab (ARUP)			
Anti-RNP	Serum (red top), 1.0 mL	Negative at 0-20 EU/mL	Core Lab	Must be ordered in conjunction with anti-SM. Order ENA.		
Anti-Smith	Serum (red top), 1.0 mL	Negative at 0-20 EU/mL	Core Lab			
Anti-Smooth Muscle Antibodies	Serum (red top), 1.0 mL	Negative at 1:20 dilution	Core Lab	Positive screens will be titered automatically		
Antistreptolysin O	Serum (red top), 2.0 mL	0-1 yr - 0-200 IU/mL 2-12 yr - 0-240 IU/mL 13 and older - 0-330 IU/mL	Reference Lab (ARUP)			

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Antithrombin III	Citrated plasma (blue top, must be full). Do not draw from Hickman, arterial line or with ABG's.	>5m 0.8-1.15 U/mL 0-5m 0.28-0.92 U/mL	Core Lab		1 week	Not available
Antithrombin III Antigen						
Antithyroid Peroxidase Antibodies	Serum (SST), 3.0 mL	0d and up: 0-70 IU/mL	Immunochemistry			
APO E Genotyping	whole blood (yellow top or purple top) 3.0 mL		Immunomolecular Pathology			
Arbovirus Antibodies	Serum (SST), 3.0 mL.	<1:16	Reference Lab			
Arginine vasopressin hormone	Plasma (purple top), 3.0 mL. Place on ice and deliver to lab immediately.	0-4.7 pg/mL	Reference Lab (ARUP)			
Arylsulfatase A	Urine, 24 h. A random urine sample is acceptable if collected between 6 am and 9 am, 10 mL.	By report	Reference Lab (ARUP)			
AST: Aspartate aminotransferase	Plasma, green top (PST), 1.0 mL	MALE FEMALE 0-9d: 47-150 U/L 47-150 U/L 10d-23m: 9-80 U/L 9-80 U/L 2y-17y: 15-40 U/L 13-35 U/L 18-59y: 18-43 U/L 15-35 U/L >59y: 19-48 U/L 9-36 U/L	Core Lab		2h	1h
B-27	Whole blood (yellow top), 3.0 mL		Immunomolecular Pathology			
Basic Metabolic Panel	Minimum specimen requirements: 2.0 mL in a green top plasma separator tube		Core Lab	This panel includes all the tests of the Electrolyte Panel plus glucose, urea nitrogen, creatinine and calcium.		
BCL-2 Gene Translocation	Whole Blood (yellow or purple top) 1.0 mL, Bone marrow (yellow or purple top) 1.0 mL, tissue 100 mg, paraffin block		Commercial Lab Services: ARUP			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
BCR-ABL	Whole blood (yellow top), 5.0 mL Bone marrow (yellow top), 2.0 mL	Negative	Immunomolecular Pathology			
Bence Jones protein	Urine, 24 h or a minimum of 5mL first morning voided urine.	Negative	Immunochemistry	Interpretation given with report. Testing performed Tuesday and Friday.	1-3 days	
Beta-2 microglobulin, serum	Serum (red top), 1.0 mL	1.1 - 2.4 mg/L	Reference Lab (ARUP)			
Beta-2 microglobulin, Urine	Urine, random or 24 hr collection, 2.0 mL	0-160 μg/L 300 μg/g creatinine	Reference Lab (ARUP)			
Beta-hCG (total beta)	Plasma, green top (PST), 2.0 mL	2 y up: <5 mlU/mL	TDM			
Bicarbonate Calculated	Whole blood, arterial, 0.5 mL, (Hep. Syringe)/Place on ice and deliver to Lab immediately	X ref-blood gas	Core Lab			
Bilirubin, conjugated (direct)	Plasma, green top (PST), 0.5 mL; protect from light.	0.0-0.2 mg/dL	Core Lab		2h	1h
Bilirubin, Fluid	Fluid, 0.5 mL	Not available	Core Lab			
Bilirubin, total	Plasma green top (PST), 0.5 mL; Protect from light.	<2d 1.4-8.7 mg/dL 2d 3.4-11.5 mg/dL 3-5d 1.5-12.0 mg/dL 6d-17y 0.3-1.2 mg/dL >17y 0.4-1.5 mg/dL	Core Lab		2h	1h
Bilirubin, total, infant	Plasma green top(PST); protect from light. Performed on infants up to 6 weeks. Whole blood, Gas-Lyte syringe on ice	Premature Full Term Cord: <2.0 mg/dL <2.0 mg/dL <2 d: <8.0 mg/dL 1.4-8.7 mg/dL 2 d: <12.0 mg/dL 3.4-11.5 mg/dL 3-5 d: <16.0 mg/dL 1.5-12.0 mg/dL	Core Lab			
Biotinidase	Serum (red top), 2.0 mL	3.5-13.8 U/L	Reference Lab (Mayo)			
Bladder Tumor Associated Antigen	Random urine, 2.0 mL	Negative	Reference Lab (ARUP)			

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Blood cultures	Add 10 mL of blood per bottle for adults and add 0.5-3 mL for pediatric patients in Pediatric bottles. Submit 2 sets (4 bottles) from 2 different sites. Isolator tubes for mycobacteria and fungi available in lab. Green top Vacutainer tube required for Cytomegalovirus cultures.	No growth	Microbiology		NA	NA

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Blood Gases	Whole blood, arterial (heparinized syringe)1.0 mL.; Place specimen on ice and deliver to lab immediately. Gaslyte syringe required if electrolytes also ordered.	pH Premature (48h): 7.35-7.50 Birth, full term: 7.11-7.36 5-10 min: 7.09-7.30 30 min: 7.21-7.38 >1h 7.26-7.49 1d: 7.25-7.45 >1d: 7.35-7.45 (Must be corrected for body temp) pCO2 0d-4d: 27-40 mmHg 4d-24m: 27-41 mmHg >24M: M:35-48 mmHg F:32-45 mmHg pO2, Birth: 8-24 mmHg 5-10 min: 33-75 mmHg 30 min: 31-85 mmHg >1 h: 55-80 mmHg 1d: 54-95 mmHg >1d: 83-108 mmHg (decreases with age) O2 Saturation, 0-4d: 85-90% >4d: 94-98% (decreases with age) Base deficit 0-4d: 2.0-10.0 4d-2y: 1.0-7.0 2-12y: 0.0-4.0 >12y: 0.0-2.0 Base excess 2-12y: 0.0-2.0 >12y: 0.0-3.0 Bicarbonate, calculated Newborn: 17-24 mmol/L Infant: 19-24 mmol/L 2m-2y: 16-23 mmol/L >2y: 22-26 mmol/L	Core Lab	Blood gases should be corrected for body temperature.		15 minutes

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B-Natriuretic Pepide	5 mL EDTA (1-Purple top tube) - whole blood	Normal, 0-100 pg/mL	Toxicology	Deliver specimen to lab within 4 hours of collection	1 hour	1 hour
Body Fluid Cell Count	Deliver to lab immediately. Specify source of fluid.	Varies with source	Core Lab			
Body fluids, culture excluding CSF	1 mL aspirate in sterile container; submit within 30 min. Note antibiotic administration and diagnosis.	No growth	Microbiology			
Bone glycoprotein	Plasma, 1.0 mL, either EDTA or Lithium heparin, purple top or green top tube Place on ice and deliver to lab immediately	Male: 1.1-10.8 ng/mL Female: 0.7-6.4 ng/mL	Reference Lab (ARUP)		5	
Bone marrow aspirate/biopsy	Aspirate needs to be collected in EDTA (purple top) for morphology and needs to be delivered immediately to Core lab. Biopsy should be submitted in formalin container. Flow cytometry specimen should be collected in yellow top tube and cytogenetics in heparinized syringe. Call specific laboratories for additional instructions if technologist or pathology resident doesn't assist with procedure.	Interpretation with report	CORE	Bone marrow biopsies and aspirates are performed by the Hematology/Oncology physicians, bone marrow transplant physicians and residents and fellows associated with these services. A technologist from the CORE Lab prepares for the procedure and aids in the correct specimen collection during the hours of 8-4:30 pm, Monday thru Friday. They can be reached at 257-1973 or pager # 1924. In the event a marrow is needed after these hours or on holiday or weekends, the on-call pathology resident is to be notified.		

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Bordetella pertussis (FA and culture)	Nasopharyngeal swab x 2 submitted in casamino acids available in lab.	No B. pertussis detected	Microbiology			
Bordetella pertussis/parapertussis DNA by PCR	Nasopharyngeal swab submitted in casamino acids.	No B. pertussis/parapertussis DNA detected.	Microbiology (Viromed)			
Bromide, quantitative	Serum (SST), 2.0 mL.	Sedation: 10-50 mg/dL Seizure control: 75-150 mg/dL Toxic: >150 mg/dL	Reference Lab (ARUP)			
Bronchial Alveolar Lavage Cell Count	Lavage Fluid	>80% macrophages <20% Lymphs	Core Lab			
BUN: Urea Nitrogen	Plasma, green top (PST), 1.0 mL	0-3d: 3-12 mg/dL 4d-11y: 5-18 mg/dL 12-17y: 7-20 mg/dL 18-59y: 6-21 mg/dL 60-89y: 8-23 mg/dL >89y: 10-31 mg/dL	Core Lab		2H	1H
Bupropion	Serum (red top), 5.0 mL, Also acceptable plasma (heparin or EDTA)	50-100 ng/mL	Reference Lab (ARUP)			
C. Difficile toxin	Stool, 1.0 mL					
C1 Esterase inhibitor, functional	Serum (red top), 1.0 mL. Place on ice and deliver to lab immediately.	Normal >68% Indeterminate 41-67% Abnormal <40%	Reference Lab (ARUP)			
C1 Esterase inhibitor, nonfunctional	Serum (red top), 1.0 mL. Place on ice and deliver to lab immediately.	10-25 mg/dL	Reference Lab (ARUP)			
C3 Complement	Serum, red top,(SST) 0.5 mL	0-5d 39-156 mg/dL 6d-5m 56-150 mg/dL 6m-11m 72-179 mg/dL 1-19y 77-143 mg/dL >19y 79-166 mg/dL	Core Lab		1-4 days	

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C4 Complement	Serum, red top (SST), 0.5 mL	0-5d 5-33 mg/dL 6d-5m 9-28 mg/dL 6-11m 14-48 mg/dL 1-19y 7-40 mg/dL >19y 14-45 mg/dL	Core Lab		1-4 days	
CA 125	Serum (red top), 2.0 mL	18 y up: 0-21 U/mL	Immunochemistry			
CA 15-3	Serum (red top), 2.0 mL	0-31 U/mL	Reference Lab (ARUP)		3 d	
CA 19-9	Serum (red top), 2.0 mL	0-37 µ/mL	Reference Lab (ARUP)		3 d	
CA 27.29	Serum (red top), 2.0 mL	0-40 U/mL	Reference Lab (ARUP)			
CAH 1Profile	Serum (red top), 0.5 mL (Pediatric steroid profile)	By report	Reference Lab (Endocrine Sciences)	Includes Androstenedione, Cortisol, DHEA, 17-OH-progesterone & Testosterone		
CAH 6 Profile	Serum (red top), 0.5 mL (Pediatric steroid profile)	By report	Reference Lab (Endocrine Sciences)	Includes Androstenedione, Specific S, Cortisol, DHEA, DOC, 17-OH pregnenolone, progesterone, 17-OH progesterone & Testosterone		
Calcitonin	Serum(plain red top or SST), 1.0 mL	Male: 0.0-11.5 pg/mL Female: 0.0-4.6 pg/mL	Reference Lab (ARUP)			
Calcium, ionized	Whole blood (Gas Lyte syringe on ice), plasma (green top PST). Place on ice and deliver immediately to lab. Tube must be 2/3 full.	0-1d: 4.3-5.1 mg/dL 1d-7d: 4.0-4.7 mg/dL 7d-90 y: 4.6-5.1 mg/dL >90 y: 4.5-5.3 mg/dL	Core Lab			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Calcium, total	Plasma, green top (PST); 0.5 mL	0-4d: 7.9-10.7 mg/dL 5d-<1m: 8.5-10.6 mg/dL 1m-11m: 8.8-10.5 mg/dL 1-6y: 8.8-10.6 mg/dL 7-12y: 8.8-10.3 mg/dL 13-15y: 8.5-10.1 mg/dL 16-17y: 8.8-10.2 mg/dL >17y: 8.8-10.0 mg/dL	Core Lab		2h	1h
Calcium, total, Fluid	Fluid, 0.5 mL	Not available	Core Lab			
Calcium, total, Urine random	Random urine, 0.5 mL	Not available	Core Lab			
Calcium, total, Urine, 24 h	Urine, 24 h	Free Ca diet: 5-40 mg/d Low to avg. Ca diet: 50-150 mg/d Avg. Ca diet: 100-300 mg/d	Core Lab			
Candida Antigen (latex)	Serum (SST), 2.0 mL	Negative	Reference Lab (ARUP)			
Candida Precipitins Antibodies	Serum (SST), 2.0 mL	None Detected	Reference Lab (ARUP)			
Carbamazepine	Plasma, green top (PST), 0.5 mL	Therapeutic: 4.0-12.0 µg/mL Toxic: >15 µg/mL	TDM			
Carbamazepine, Saliva		Therapeutic: 1.4 - 3.5 µg/mL Toxic: > 4.5 µg/mL	TDM	Eating and drinking should be avoided 15 minutes prior to sampling.	8 hr	NA
Carbohydrate Deficient Transferrin	Serum (red top), 2.0 mL	<6%	Reference Lab (Speciality)			
Carbon dioxide, partial pressure (pCO2)	Whole arterial blood (Gaslyte syringe), 1.0mL. Place on ice and deliver to lab immediately.	X ref blood gas	Core Lab			
Carboxyhemoglobin	Whole blood, 3 mL, blood gas syringe, green top, or purple top. Place on ice.	Non-smokers 0-3% of total Hb Smokers 0-10% of total Hb Toxic >20% of total Hb Lethal >60% if exposure continued	Core Lab			15 minutes

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Carcinoembryonic antigen	Serum (SST), 1.5 mL	18 y up, Non-smokers: 0-3.0 ng/mL Smokers: 0-5.0 ng/mL	Immunochemistry			
Cardiolipin antibody	Serum (red top), 2.0 mL	IgG: <23 GPL units/mL IgG: <11 MPL units/mL	Core Lab			
Carnitine (includes free, acyl, and total),Serum	Serum (SST), 3.0 mL, plasma also acceptable	Free: 2.3-7.0 µmol/dL Acyl: 0.0-1.9 µmol/dL Total: 2.6-8.1 µmol/dL	Reference Lab (ARUP)		3 d	
Carnitine, Urine	Urine, random or 24h collection, 3.0 mL	Free: 48-132 nmol/mg creat Acyl: 27-111 nmol/mg creat Total: 92-222 nmol/mg creat	Reference Lab (Cleveland Childrens Hospital)			
Carotene	Serum (red top), 5.0 mL. Protect from light; deliver to lab immediately.	60-200 µg/dL	Reference Lab (ARUP)		3 d	
Casein, allergen	Serum (red top), 2.0 mL	By report	Reference Lab (Quest)			
Catecholamines, fractionation urine	Urine, 24 h; Refrigerate during collection. Obtain container from Lab Central, HA619.	By report	Reference Lab (ARUP)			
Catecholamines, fractionation, plasma	Plasma (green top), 10 mL; Patient should be supine 30 min prior to collection. Place on ice and deliver to lab immediately.	By report	Reference Lab (ARUP)			
CD4 and CD8 Lymphocyte Enumeration	Whole blood (yellow top), 3.0 mL. A Hemogram with diff must be ordered (purple top) 2.0 mL	See report for normal values in children and adults..	Immunomolecular Pathology			
Cell Markers	Whole Blood (yellow top), 5.0 mL bone marrow (yellow top), 1.0 mL Do not refrigerate.		Immunomolecular Pathology			
Cell Markers, Tissues and Fluid	Lymph nodes, tissues, fluids		Immunomolecular Pathology			
Ceruloplasmin	Serum (SST), 1.5 mL	0 y and up: 20-60 mg/dL	Immunochemistry			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Cervical Cytology Smear, Cervical-Vaginal Cytology Smear	Fix slides in 95% ethanol. See p. 14-15. Use #2 pencil to label frosted end of slide with patient's name and/or hospital number. Sample cervix with attention to transformation zone using EITHER broom-like device or combination of plastic spatula and endocervical brush.	Interpretation given with report	Cytology	Provide the indication, either a routine screen, versus previous or suspected abnormality. A ROUTINE SCREEN is ordered when a woman has had negative Pap tests for the past 3 years or has not been screened in the past few years and there are no gynecologic symptoms worrisome for an abnormality. HIGH RISK FACTORS should be checked if present. PREVIOUS OR SUSPECTED ABNORMALITY should be checked and a reason given in any woman with a previous abnormal Pap test or cervical biopsy within the past 3 years, including ASCUS, SIL, etc. This also includes any woman being tested at a more frequent interval than annually because of specific concerns (previous unsatisfactory Pap test included). Other reasons include history of a gynecologic malignancy at any time, abnormal gynecologic bleeding, lesion seen on cervix or vagina, or other symptoms		

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
				that might indicate a cervical or vaginal lesion.		

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Cervical Cytology ThinPrep,ThinPrep Pap Test	For liquid based collection fixatives call Cytology Laboratory, 7-3640. Do not use 95% ethanol. Sample cervix with attention to transformation zone. Collect specimen with EITHER Broom-like device or combination of plastic spatula and endocervical brush. Rinse devices vigorously in liquid fixative. Label the vial with patient's name and medical record number. SEE LINK BELOW FOR DIAGRAM.	Interpretation given with report. Most ThinPrep specimens with be intially scanned using Cytyc imager (see report for documentation.)	Cytology	HPV/DNA testing is offered as an adjunctive test using the remainder of the liquid based pap vial (minimum of 4 mLs after cytology pap is made) within 18 days of collection. --- Provide the indication, either a routine screen, versus previous or suspected abnormality. A ROUTINE SCREEN is ordered when a woman has had negative Pap tests for the past 3 years or has not been screened in the past few years and there are no gynecologic symptoms worrisome for an abnormality. HIGH RISK FACTORS should be checked if present. PREVIOUS OR SUSPECTED ABNORMALITY should be checked and a reason given in any woman with a previous abnormal Pap test or cervical biopsy within the past 3 years, including ASCUS, SIL, etc. This also includes any woman being tested at a more frequent interval than annually because of specific concerns (previous unsatisfactory Pap test		

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
				included). Other reasons include history of a gynecologic malignancy at any time, abnormal gynecologic bleeding, lesion seen on cervix or vagina, or other symptoms that might indicate a cervical or vaginal lesion.		
CH50	Serum (red top), 1.0 mL. Place on ice and deliver to lab immediately. Heat labile.	101-300	Core Lab			
Chagas disease titer	Serum (SST), 1.0 mL	By report	Reference Lab (Parasitic Disease Consultants)			
Chlamydia isolation	Chlamydia transport system available in Bacteriology, HA638, or KY. Clinic Lab, C203.	Negative	Microbiology			
Chlamydia pneumoniae DNA by PCR	Throat swab, Nasopharyngeal swab in chlamydia transport media. Bronch wash/BAL in sterile container.	C. pneumoniae DNA not detected	Microbiology (Viromed)			
Chlamydia trachomatis Antibody Panel, IgG/IgM	Serum (SST), 2.0 mL. Includes IgG/IgM antibodies to trachomatis psittaci and pneumoniae	By report	Reference Lab (ARUP)			
Chlamydia trachomatis Detection by Nucleic Acid Amplification	Cervical or male urethral swab collection kit. Available in HA630 or KY Clinic Lab, C203. Female and Male urine - first catch specimen collected in clean plastic, screw cap container, 10-15 mL. Deliver specimens to lab within 24 hours or refrigerate if delayed.	C. trachomatis DNA was not detected by PCR	Microbiology			
Chlordiazepoxide and metabolites, quantitative	Serum (red top), 3.0 mL.	Chlordiazepoxide: 0.5-3.0 µg/mL Nordiazepam: 0.06-1.8 µg/mL	Reference Lab (ARUP)			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Chloride	Plasma, green top (PST); 0.5 mL	0-17 y: 102-112 mmol/L >17 y: 102-110 mmol/L	Core Lab		2h	1h
Chloride, CSF	CSF (screw top), 0.5 mL	Newborn: 108-122 mmol/L Infant: 110-130 mmol/L Adult: 118-132 mmol/L	Core Lab		2h	1h
Chloride, Fluid	Fluid, 0.5 mL	Not available	Core Lab		2h	1h
Chloride, Urine random	Urine, random	Not available	Core Lab		2h	1h
Chloride, Urine, 24 h	Urine, 24 h	<2y 2-10 mmol/d 2-5y 15-40 mmol/d 6-9y M 36-110 mmol/d F 18-74 mmol/d 10-13y M 64-176 mmol/d F 36-173 mmol/d 14-59y 110-250 mmol/d >59y 95-195 mmol/d	Core Lab		2h	1h
Cholesterol, Fluid	Fluid, 0.5 mL	Not available	Core Lab			
Cholesterol, total	Plasma, green top (PST), 1.0 mL	Children < 18y in terms of risk for coronary heart disease, Desirable: <170 mg/dL High: >/= 200 mg/dL Adults: Desirable: <200 mg/dL Borderline risk: 200-239 mg/dL High risk: >/= 239 mg/dL	Core Lab		2h	1h
Cholinesterase	Serum (red top), 3.0 mL, Plasma also acceptable	2,900-7,100 U/L	Reference Lab (ARUP)		3 d	

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Chorionic gonadotropin,total beta	Plasma, green top (PST), 1.5 mL	>2 y: <5.0 mIU/mL	TDM			
Chromagrainin A	Serum (red top), 1.0 mL	Male: 0-76 ng/mL Female: 0-51 ng/mL	Reference Lab (ARUP)		5 d	
Chromium, Serum	Serum (dark blue top), 2.0 mL. Obtain from Lab Central, HA619.	<0.0 - 2.1 µg/L	Reference Lab (ARUP)		5 d	

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Chromosome Analysis Blood	Whole blood (green top), 2.0-3.0 mL; cord blood/Neonates 1.0-2.0 mL. Keep at room temperature.	Interpretation given with report	Cytogenetics	The Cytogenetics Laboratory is open from 8:00am to 4:30pm Monday through Friday. It is located in HL423. University Hospital, 257-3736. The laboratory performs chromosome analysis on peripheral blood, fetal blood, bone marrow aspirates, amniotic fluid, chorionic villi, skin and other tissues, abortus products and some solid tumors. All specimens must be labeled with the patient's name and hospital number and must be accompanied by a chromosome analysis request form. Form J529 (Genetic/Prenatal) is to be used for blood, amniotic fluid, chorionic villi, skin, tissue and abortus specimens. Form J530 (Oncology) is to be used for bone marrow aspirates, tumors and blood from Hematology/Oncology patients. The requisition form must contain the patient's name, hospital number, sex, date of birth, source of specimen, date of specimen collection, and the attending physician's name. Pertinent clinical information should also be noted on the form. Any specimens not meeting these requirements cannot be accepted. All specimens must be		

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
				collected in such a way as to insure viability and sterility of the sample. If urgent processing is required on a specimen, please call the laboratory. Urgent specimens require hand delivery to the laboratory. Call 7-3736 with questions		
Citrate, Urine	24 h urine, Refrigerate during collection, Random collection also acceptable.	320-1240 mg/d	Reference Lab (ARUP)		3 d	
CK, Total: Creatine Kinase, Total	Plasma, green top (PST), 0.5 mL	MALE FEMALE 1-30d 2-183 2-134 U/L 31-182d 2-129 2-146 U/L 183-364d 2-143 18-138 U/L 1-3y 2-163 2-134 U/L 4-6y 18-158 8-147 U/L 7-9y 2-177 26-145 U/L 10-12y 6-217 6-137 U/L 13-15y 2-251 2-143 U/L 16-18y 2-238 13-144 U/L >18y 50-300 40-230 U/L	Core Lab		2h	1h
Clonazepam	Serum (SST), 4.0 mL	Therapeutic: 10-75 ng/mL Toxic: >100 ng/mL	Reference Lab (ARUP)			
Clostridium difficile culture	Stool, 1.0 mL					
Clostridium difficile toxin assay	Stool, 1.0 mL	No C. difficile Toxin	Microbiology			
CO2, Total: Carbon Dioxide, Total	Plasma, green top (PST), 0.5 mL	0-6d 17-26 mmol/L 7d-<1m 17-27 mmol/L 1m-5m 17-29 mmol/L 6m-11m 18-29 mmol/L 1y-17y 20-31 mmol/L 18y-59y 23-31 mmol/L >59y 23-31 mmol/L	Core Lab		2h	1h

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Cold agglutinins	Serum (red top), 2.0 mL	<1:32, Negative	Reference Lab (ARUP)			
Coombs test, direct	Clotted blood (red Top), 10 mL, and Whole blood (purple Top), 3.0 mL	Negative	Blood Bank			
Coombs test, indirect	Clotted blood (red top), 10 mL	Negative	Blood Bank			
Copper, Liver Tissue	Liver tissue, 0.5 mm x 2.0 cm needle biopsy	10-35 µg/g dry wt.	Reference Lab (Mayo)			
Copper, serum	Serum (dark blue top), 2.0 mL. Obtain tube from Lab Central, HA619.	Male, 0-1 m: 26-32 µg/dL 1-5 m: 59-70 µg/dL m-4y: 27-153 µg/dL 5-16 y: 67-147 µg/dL 17-60y: 70-140 µg/dL >60 y: 85-170 µg/dL Female, 0-1 m: 26-32 µg/dL 1-5 m: 50-70 µg/dL 6 m-4 y: 27-153 µg/dL 5-16 y: 67-147 µg/dL 17-60 y: 80-155 µg/dL >60 y: 85-190 µg/dL	Reference Lab (ARUP)			
Copper, Urine, 24 h	Urine, 24 h	3-50 µg/d	Reference Lab (ARUP)		3 d	
Cortisol	Serum (SST), 1.0 mL.	0-4d (8 AM): 1-16 µg/dL 1-16 y, (6-10 AM): 7-25 µg/dL 16 y up (6-10 AM): 5-25 µg/dL (4-8 PM): 3-15 µg/dL (11PM): 2-10 µg/dL	Immunochemistry	Provide time of collection.		
Cortisol, urine free	Urine, 24h	3-8 yrs - male/female < 18 µg/d 9-12 yrs - male/female < 37 µg/d 12-17 yrs - male/female < 56 µg/d 18 yrs and older - female < 45 µg/d 18 yrs and older - male < 60 µg/d	Reference Lab (ARUP)		3 d	
Coxsackie A-9 Virus Antibodies	Serum (red top), 2.0 mL	<1:8	Reference Lab (ARUP)		3 d	

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Coxsackie Virus Antibodies	Serum (red top), 3.0 mL	<1:10	Reference Lab (ARUP)		3 d	
C-peptide, fasting	Serum (SST) 1.0 mL	5-17 y: 0.7-3.6 ng/mL 18 y up: 1.1-4.5 ng/mL	Immunochemistry			
C-reactive protein	Serum (SST) 1.5 mL	18 y up: <0.9 mg/dL	Core Lab			
C-reactive protein, High Sensitivity		By report	Reference Lab (ARUP)		3 days	N/A
Creatine kinase, MB fraction	Plasma, green top (PST), 2.0 mL	>16 y: 0-8 ng/mL (non-MI)	TDM			
Creatinine	Plasma, green top (PST), 0.5 mL	M F <1m: 0.5-1.2 0.5-0.9 mg/dL 1m-11m: 0.4-0.7 0.4-0.6 mg/dL 1-3y: 0.4-0.7 0.4-0.7 mg/dL 4-6y: 0.5-0.8 0.5-0.8 mg/dL 7-9y: 0.6-0.9 0.6-0.9 mg/dL 10-12y: 0.6-1.0 0.6-1.0 mg/dL 13-17y: 0.6-1.4 0.7-1.2 mg/dL 18-59y: 0.8-1.3 0.6-1.0 mg/dL 60-89y: 0.8-1.3 0.6-1.2 mg/dL >89 y: 1.0-1.7 0.6-1.3 mg/dL	Core Lab		2h	1h

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Creatinine Clearance (endogenous)	Plasma, green top (PST), 0.5 mL, timed urine (no preservative); refrigerate urine during collection. Order plasma creatinine during timed urine collection period.	0 d -4 d: 40-65 mL/min/1.73m2 4 d-12 y, M: 95-150 mL/min/1.73m2 F: 95-125 mL/min/1.73m2 12-40 y, M: 90-130 mL/min/1.73m2 F: 80-120 mL/min/1.73m2 40-50 y, M: 84-124 mL/min/1.73m2 F: 72-114 mL/min/1.73m2 50-60 y, M: 78-118 mL/min/1.73m2 F: 66-108 mL/min/1.73m2 >60 y, M: 72-112 mL/min/1.73m2 F: 60-102 mL/min/1.73m2 Values decrease approximately 6.5 mL/min/1.73m2 per decade. Impairment mL/min/1.73m2 Borderline 62.5-80 Slight 52-62.5 Mild 42-52 Moderate 28-42 Marked >28	Core Lab	The reference range is per 1.73 square meters body surface area. The reported value has not been corrected to 1.73 square meters.		
Creatinine, amniontic fluid		>2.0 mg/dL generally indicates fetal maturity creatinine is normal.	Core Lab			
Creatinine, fluid	0.5 mL	Not available	Core Lab		2h	1h
Creatinine, Urine random	Urine, random	Not available	Core Lab			
Creatinine, Urine, 24 h	Urine, 24h, no preservative	infant: 8-20 mg/kg/d child: 8-22 mg/kg/d adolescent: 8-30 mg/kg/d Adult M: 14-26 mg/kg/d or 800-2000 mg/d F: 11-20 mg/kg/d or 600-1800 mg/d	Core Lab			
Crossmatch, HLA	Patient: Serum(red top), 1.0 mL Donor: Whole Blood (yellow top), 20 mL Do not refrigerate. Deliver to lab within 1 hr.		Immunomolecular Pathology			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Crossmatch, RBC	Clotted blood (red top), 10 mL for each 6 units ordered. Infants: 1.5 mL for each unit ordered. (2-3 bullet tubes or red top, 3.0 mL). Contact lab for further instructions.	Compatible	Blood Bank	Includes ABO and Rh typing, antibody screen and compatibility testing.		
CRP: C Reactive Protein	0.3 mL heparinized whole blood (green top)	0-0.9 mg/dL	Core Lab	This CRP test is appropriate for assessment of infection, systemic inflammation or tissue injury. It is not appropriate for cardiovascular disease risk assessment, which requires a more sensitive assay (high sensitivity CRP; hsCRP) Currently hsCRP is sent to a reference lab.	2h	1h
Cryocrit	Serum, two 10 mL red tops; keep at 37ºC in heel warmer; deliver to lab immediately.	None Detected	Immunochemistry		3-7 days	
Cryptococcal antigen	CSF, 1.0 mL or Serum (red top), 2.0 mL, titered if possible	Negative	Microbiology			
Cryptosporidium	Stool, 1.0 mL	None seen	Microbiology			
CSF Cytospin for Leukemia/Lymphoma	Deliver to Lab Central Receiving immediately. Test will not be done on any fluid other than CSF.	See report	Core Lab	This test is to be ordered only on patients with Leukemia/Lymphoma.	24 hours, M-F	Not Available
CTA-HLA Antibodies	Serum (red top), 1.0 mL	Negative	Immunomolecular Pathology			
Cyclosporine	Whole blood (purple top), 1.0 mL. Obtain just prior to next dose (trough).	Renal transplant: 100-200 ng/mL Cardiac transplant 150-250 ng/mL Hepatic transplant 100-400 ng/mL	Toxicology	Patient samples in lab by 11 am will be reported by 4 pm. Patient samples in lab after 11 am will be analyzed the following day.		

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Cystic Fibrosis, by DNA analysis	Whole blood (purple top or yellow top), 2.0 mL	Given with report.	Reference Lab (Genzyme)			
Cysticercosis titers	Serum (red top), 2.0 mL CSF, 1.0 mL	Serum:<1:32, Antibody not detected CSF: <1:8, Antibody not detected	Reference Lab (Parasitic Disease Consultants)			
Cytologic Evaluation, Brushings or Washings	Fix Slides in 95% ethanol and label with patient name and/or hospital number. For liquid based brushing collection instructions and supplies, call Cytology Laboratory 7-3640. The brush should be vigorously swirled in fixative to release material. Send washings fresh to laboratory and refrigerate if there is any delay.	See report	Cytology	Respiratory specimens submitted for STAT evaluation for opportunistic infections require hand delivery of specimen to Cytology Laboratory HL412. The cytology laboratory should be notified if specimens will arrive after 2 p.m. for same day evaluation. If STAT processing is required evenings/weekends call the anatomic pathology resident on call.		
Cytologic Evaluation, Cerebrospinal Fluid	Deliver fresh to lab (for leukemia/lymphoma patients, order LL Spin on J348 Requisition).	See report	Cytology			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Cytologic Evaluation, Effusions, Fluids	Fluids should be sent in either plastic specimen containers or Thoraklax bags. Fluids sent in PLEURAL-VACS or large vacuum-sealed glass bottles will not be accepted. Send a generous amount of effusion (up to 500 mL) for optimal evaluation. Send to laboratory central receiving if cytology laboratory is closed. If there is any delay in sending a fresh specimen, it should be refrigerated. Provide clinical history or indication and any special testing desired (stains, flow cytometry, etc.). If STAT processing is required evenings/weekends call the anatomic pathology resident on call.	See report	Cytology			
Cytologic Evaluation, Opportunistic Infections	Hand deliver specimen and/or ethanol fixed slides to Cytology.	See report	Cytology	Respiratory specimens submitted for STAT evaluation for opportunistic infections require hand delivery of specimen to Cytology Laboratory HL412. The cytology laboratory should be notified if specimens will arrive after 2 p.m. for same day evaluation. If STAT processing is required evenings/weekends call the anatomic pathology resident on call.		

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Cytologic Evaluation, Smear for Viral Inclusions	Scrape base of lesion with blade, wooden spatula/depressor, and smear on slide. Fix slides immediately in 95% ethanol. Contact cytology laboratory for a kit if desired (257-3640).	See report	Cytology			
Cytologic Evaluation, Washings	Deliver fresh to lab.	See report	Cytology	Respiratory specimens submitted for STAT evaluation for opportunistic infections require hand delivery of specimen to Cytology Laboratory HL412. The cytology laboratory should be notified if specimens will arrive after 2 p.m. for same day evaluation. If STAT processing is required evenings/weekends call the anatomic pathology resident on call.		
Cytomegalovirus Antigenemia	Whole blood in EDTA, minimum 5 mL Collect Monday thru Thursday and not before or on a Holiday.	Negative	Microbiology			
Cytomegalovirus detection by Nucleic Acid Amplification (Qualitative)	CSF, Bone Marrow Asp. Or whole blood in EDTA, BAL, Occular fluid, Neonatal urine, tissue in viral transport media. NOTE: This test is for Research use only.	By report	Microbiology (ARUP)			
Cytomegalovirus IgG Antibody (CSF)	Cerebrospinal fluid, 0.5 mL		Toxicology			
Cytomegalovirus IgG Antibody (Quantitative)	Serum (SST), 2.0 mL	Negative	Toxicology			
Cytomegalovirus IgM Antibody, CSF	Cerebrospinal fluid, 0.5 mL	By report	Reference Lab (Focus)			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Cytomegalovirus isolation	Tissue, body fluids, buffy coat in Green Top vacutainer tube. Submit on ice.	No Cytomegalovirus isolated	Microbiology			
Cytoplasmic neutrophil Antibody	Serum (red top), 2.0 mL	Negative at 1:20	Core Lab			
Cytospin for Leukemia/Lymphoma	CSF, 0.5 mL. Deliver to Lab Central Receiving immediately.	See report	Core Lab			
Cytotoxic antibody screening	Serum (red top), 1.0 mL	Negative	Immunomolecular Pathology			
Cytotoxic crossmatch for cadaver transplant	Patient: serum(red top), 1.0 mL		Immunomolecular Pathology			
Cytotoxic crossmatch for living related transplant	Patient: serum (red top), 1. mL Donor: whole blood (yellow top), 20 mL Do not refrigerate specimen Submit within 1 h of collection.		Immunomolecular Pathology			
Darkfield examination	Contact supervisor for instructions, 3-5411. Performed 8am-3pm. Recommend T.pallidum F.A. instead.	Negative	Microbiology			
D-dimer	Citrated plasma (blue top, tube must be full). Do not draw from Hickman, arterial line, or with ABG's	All ages: less than or equal to 3.0 mg/L	Core Lab			
Dehydroepiandrosterone	Serum (red top), 2.0 mL	Child: 1.0-3.0 ng/mL Adult, M: 1.7-9.5 ng/mL F: 2.0-10.0 ng/mL Pregnancy: 0.5-12.5 ng/mL	Reproductive Endocrinology	DHEA		
Dehydroepiandrosterone sulfate	Serum (red top), 2.0 mL	Adult Male: 80-560 µg/mL Adult Female: 35-430 µg/mL Children, call lab at 323-5123	Reproductive Endocrinology			
Delta A450	Amniotic fluid, 2.0 mL; protect from light.	with report.	Toxicology			
Delta antibody	Serum (SST); 2.0 mL	Negative	Reference Lab (ARUP)		10 d	

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Desipramine	Serum (SST), 2.0 mL	Therapeutic.: 100-300 ng/mL	Reference Lab (ARUP)			
Dexamethasone suppression test (high dose)	Serum (SST); draw at 8 a.m. for 6 d.	Cortisol: suppression on day 4 to <5 µg/dL or to <50% of baseline Cortisol, 17-KGS, 17-OHCS: Suppression on day 6 to <50% of baseline is suggestive of bilateral adrenal hyperplasia. No suppression is seen in adrenal neoplasms or ectopic ACTH-producing tumors.	Immunochemistry	High dose, adult: 2.0 mg q 6 h x 8 on days 5 and 6		
Dexamethasone suppression test (low dose)	Serum (SST); draw at 8 a.m. for 6 d.	Cortisol: suppression on day 4 to <5 µg/dL or to <50% of baseline Cortisol, 17-KGS, 17-OHCS: Suppression on day 6 to <50% of baseline is suggestive of bilateral adrenal hyperplasia. No suppression is seen in adrenal neoplasms or ectopic ACTH-producing tumors.	Immunochemistry	Low dose, adult: 0.5 mg q 6 h x 8 on days 3 and 4		
Dexamethasone suppression test: 17-OHCS:	Urine 24 h, for 6 d; Collected with boric acid. (Days 1 and 2 are baseline measurements.)	17-OHCS: suppression on day 4 to <4.5 mg/d or <50% of baseline.	Reference Lab (ARUP)			
Dexamethasone suppression test: 17-KGS:	Urine 24 h, for 6 d; Collected with boric acid. (Days 1 and 2 are baseline measurements.)	17-KGS: suppression on day 4 to <7 mg/d or <50% of baseline.	Reference Lab (ARUP)			
Dexamethasone suppression test: Urine, free cortisol:	Urine 24 h, for 6 d; Collected with boric acid. (Days 1 and 2 are baseline measurements.)	Free cortisol: suppression on day 4 to <19-25 ug/d or <50% of baseline.	Reference Lab (ARUP)			
Diazepam and metabolites, quanitative	Serum (SST), 2.0 mL	Diazepam: 0.2-1.0 µg/mL NorDiazepam: 0.06-1.8 µg/mL	Reference Lab (ARUP)			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Dibucaine Number	Serum (SST), 3.0 mL	Given with report (includes phenotype).	Reference Lab (ARUP)			
Differential, WBC Differential	Whole blood (purple top), 3.0 mL. Mix well. May be collected by finger stick in microtainer tube, 0.2 mL.	Neutrophils: <1wk 22-70% 2.0-12.0 k/µL 1-7wk 16-70% 1.5-11.5 k/µL 2-23m 12-70% 1.4- 9.0 k/µL 2-9y 32-74% 1.4- 8.0 k/µL 10-17y 42-74% 1.4- 8.0 k/µL > 17y 42-74% 1.4- 6.6 k/µL Eosinophils <1 wk 1-7% 0- 0.8 k/µL 1-7wk 1-7% 0- 0.8 k/µL > 7wk 1-7% 0- 0.4 k/µL Basophils 0-1% 0- 0.1 k/µL Lymphocytes <1wk 15-55% 1.2-11.5 k/µL 1-7wk 15-65% 1.2-11.5 k/µL 2-23m 15-60% 1.2-11.5 k/µL 2-9y 15-55% 1.2- 6.0 k/µL 10-17y 17-50% 1.2- 3.5 k/µL > 17y 17-45% 1.0- 3.5 k/µL Monocytes <1wk 1-18% 0.2- 2.2 k/µL 1-7wk 1-20% 0.2- 3.0 k/µL 2-23m 3-15% 0.3- 2.0 k/µL 2-9y 3-14% 0.3- 1.2 k/µL 10-17y 4-12% 0.3- 1.0 k/µL > 17y 5-12% 0.3 0.8 k/µL Nucleated RBC's 1-3d 0-10 NRBC/100 WBC >3d 0 NRBC/100 WBC	Core Lab		2h	1h
Digoxin	Plasma, green top (PST), 1.0 mL	Therap.: 0.8-2.0 ng/mL Toxic: >2.3 ng/mL	Toxicology			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Diphtheria Antitoxoid Antibody	Serum (SST), 2.0 mL	>0.10 IU/mL Post vaccination	Reference Lab (ARUP)			
Diuretic Screening (Thiazide diuretics)	Random urine, 1.0 mL	Given with report.	Reference Lab (National Medical Services)			
DNA	Call Cytogenetics Lab (7-3736).	Interpretation given with report	Cytogenetics			
DNA polymorphisms to monitor BMT engraftment	Whole blood (yellow top), 3.0 mL Bone marrow (yellow top), 1.0 mL	Interpretation given with report.	Immunomolecular Pathology			
Drug screen, Abuse	Urine, random, 10 mL. See Toxicology Screens, p.19-20.	Negative	Toxicology	Includes screening for Cocaine, Benzodiazepines, opiates, barbituates, amphetamines, methadone, THC and Norpropoxyphene. Positive screens are reflexed to a GC/MS confirmation.		
Drug screen, Gastric	Gastric content, 10 mL See Toxicology Screens, p. 19-20	Negative	Toxicology	Screens for approximately 75 different drugs. Performed by a combination of TLC, GC/MS and immunoassay.		
Drug Screen, Meconium	Collect meconium from time of birth until appearance of milk stool. Random collection accepted, 0.5 g	Negative (amphetamines, cannabinoids, Opiates, PCP, cocaine metobolite)	Reference Lab (MECSTAT)	Includes screening for amphetamines, THC, opiates, PCP and cocaine metabolite.		

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Drug screen, Neonatal	Urine, random, 1.0-2.0 mL. See Toxicology Screens, p. 19-20.	Negative	Toxicology	Includes screening for Cocaine, Benzodiazepines, opiates, THC, Barbituates. Positive screens are reflexed to a GC/MS confirmation.		
Drug screen, Urine	Urine random, 10 mL.	Negative	Toxicology	Screens for approximately 75 different drugs. Performed by a combination of TLC, GC/MS and immunoassay techniques.	2-8 hrs.	1-3 hrs.
Duchenne/Becker Muscular Dystrophy by DNA Analysis	Whole blood (purple or yellow top), 2.0 mL	By report	Reference Lab (Baylor)			
Echinococcosis titer	Serum (SST), 2.0 mL	Negative 0.9-1.1 Equivocal >1.1 Positive	Reference Lab (ARUP)			
ECHO titers	Serum (SST), 2.0 mL	<1:10 (Serotypes 6,7,9,11,30)	Reference Lab (ARUP)			
Ehrlichia chaffeensis DNA by PCR (also detects E. equi)	Whole Blood (ACD or EDTA) Collect Monday thru Thursday only	No Ehrlichia DNA detected	Microbiology (Viromed)			
Ehrlichia chaffeensis IgG and IgM Antibody	Serum (red top), 2.0 mL	IgG: <1:64, Antibody not detected IgM:<1:16, Antibody not detected	Reference Lab (ARUP)			
Electrophoresis, Hemoglobin	Whole Blood (purple top), 3.0 mL	Hgb A: >95% Hgb A2: 1.5-3.5% Hgb F: <2% after age 2	Core Lab	Includes cellulose acetate, alkali denaturation for HgbF, & A2 by column. Solubility tests and acid electrophoresis on agar gel performed if indicated.		

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Electrophoresis, Hemoglobin, Strip only	Whole Blood (purple top), 0.5 mL	see report	Core Lab	This should be ordered on babies < 6 months old. Fetal Hb (FHb) is reported from the electrophoresis scan. The Alkalai Denaturation test for FHb and the A2 by column are not accurate at this age.		
Electrophoresis, serum protein	Serum (SST), 2.0 mL	Albumin, 0-15 d: 3.0-3.9 g/dL 15 d-1 y: 2.2-4.8 g/dL 1-16 y: 3.6-5.2 g/dL 17 y and up: 3.6-4.8 g/dL alpha 1-globulin, 0-15 d: 0.1-0.3 g/dL 15 d-1 yr: 0.1-0.3 g/dL 1-16y: 0.1-0.3 g/dL 17 y and up: 0.1-0.2 g/dL alpha 2-globulin, 0-15 d: 0.3-0.6 g/dL 15 d-1 y: 0.5-0.9 g/dL 1-16 y: 0.5-1.2 g/dL 17 y and up: 0.6-0.9 g/dL beta-1 globulin, 0-15 d: 0.3-0.4 g/dL 15-1 d: 0.3-0.5 g/dL 1-17 y: 0.3-0.6 g/dL 17 y and up: 0.4-0.7 g/dL beta-2 globulin, 1-15 d: 0.1-0.3 g/dL 15 d-1 y: 0.2-0.4 g/dL 1-16y: 0.2-0.5 g/dL 17 y and up: 0.2-0.5 g/dL gamma-globulin, 1-15 d: 0.7-1.4 g/dL 15 d -1 yr: 0.5-1.3 g/dL 1-16 y: 0.5-1.7 g/dL 17 y and up: 0.7-1.5 g/dL Interpretation given with report	Immunochemistry		1-3 days	
Electrophoresis, urine protein	Urine (24 h), no preservative or random urine	Interpretation given with report	Immunochemistry	Testing performed Tuesday and Friday	1-3 days	

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Elution, antibody	Whole blood (purple top), 7.0 mL	Negative	Blood Bank			
Endomysial Antibody, IgA	Serum (red top), 2.0 mL	No antibody detected	Reference Lab (IMMCO)			
Enterovirus Isolation	Tissue, body fluids except blood, NP suction, stool	No Enterovirus Isolated	Microbiology			
Enterovirus RNA by PCR	CSF, Whole blood in EDTA, Throat/Nasopharyngeal swabs, stool, and tissue.	No Enteroviral RNA detected	Microbiology (ARUP)			
Eosinophil count	Whole blood (purple top), 3.0 mL; mix well. Order HEMD	Up to 350/µl	Core Lab			
Eosinophil Smear	Contact Hematology for instructions on collection and preparations, 7-1973.		Core Lab			
Eosinophils, urine	Urine, 1.0 mL	None	Core Lab			
Epstein -Barr Virus Quantitative DNA by PCR	CSF, Synovial or Vitreous fluid, Bronchwashes, Tissue, Whole blood in ACD or EDTA	<80 copies per mL	Microbiology (Specialty)			
Epstein-Barr Virus Antibodies to (Viral Capsid Antigen, Antibody) IgG IgM	Serum (SST), 3.0 mL	Negative	Immunochemistry			
Epstein-Barr Virus detection By Nucleic Acid Amplification	CSF, Bone Marrow Asp. or whole blood in EDTA, serum from clotted blood, tissue. NOTE: This test is for Research use only.	Negative	Microbiology(ARUP)			
Epstein-Barr Virus Panel	Serum (SST), 3.0 mL	By report	Reference Lab (ARUP)	Includes Early Antigen, Viral Capsid, and Nuclear Antigen Antibodies	3-5 days	NA
Erythropoietin	Serum (red top), 2.0 mL.	By report	Reference Lab (ARUP)		3 days	NA

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Estradiol	Serum (red top), 2.0 mL. For additional reference range information, please contact Lab at 3-5123.	Adult female: Menstrual Cycle Follicular phase: ND-160 pg/mL Follicular phase, d 2-3: ND-84 pg/mL Periovulatory +/- 3 d: 34-400 pg/mL Luteal phase: 27-246 pg/mL Untreated postmenopausal: ND-30 pg/mL Oral contraceptives: ND-102 pg/mL Adult Male: ND-56 pg/mL Postmenopausal: ND-20 pg/mL	Reproductive Endocrinology			
Estrogens, fractionated	Serum (SST), 2.0 mL	By report	Reference Lab (ARUP)		3 days	NA
Estrone	Serum (red top), 1.0 mL.	By report	Reference Lab (ARUP)		3 days	NA
Ethosuximide	Serum (SST), 2.0 mL	40-100 µg/mL toxic: >150 µg/mL	Reference Lab (ARUP)		3 days	NA
Ethylene glycol & glycolic acid	Serum (red top), 1.0 mL.	Negative	Toxicology			
Extractable nuclear antigen	Serum (red top), 2.0 mL.	SM: Negative at 0-20 EU/ml RNP: Negative at 0-20 EU/ml SSA: Negative at 0-20 EU/ml SSB: Negative at 0-20 EU/ml	Core Lab	Order ENA I for SM and RNP. Order ENA II for SSA and SSB.		
FA for Legionella, direct	Sputum, transtrach, lung tissues, pleural fluid, bronch wash, sterile container.	Negative	Microbiology			
FA for pertussis	Submit nasopharyngeal swab in casamino acids. Specimen will be routinely cultured for B. pertussis.	Negative	Microbiology			
Factor II activity	Citrated plasma (blue top), must be full. Do not draw from Hickman, arterial line or with ABG's.	0-5 months 0.26-0.7 U/mL 6-12 months 0.34-1.15 U/mL >12 months 0.7-1.45 U/mL	Core Lab			Not available

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Factor IX activity	Citrated plasma (blue top), must be full. Do not draw from Hickman, arterial line or with ABG's.	<1 month 0.15-0.99 U/mL 1-5 months 0.2-1.35 U/mL >5 months 0.5-1.6 U/mL	Core Lab			Not available
Factor IX inhibitor	Citrated plasma (blue top), must be full. Do not draw from Hickman, arterial line or with ABG's.	All ages: None	Core Lab			Not available
Factor V activity	Citrated plasma (blue top), must be full. Do not draw from Hickman, arterial line or with ABG's.	0-5 months 0.35-1.5 U/mL >5 months 0.5-1.5 U/mL	Core Lab			Not available
Factor V Gene Leiden Mutation	Whole blood (yellow top or purple top), 3.0 mL		Immunomolecular Pathology	This test is multiplexed with Prothrombin gene mutation		
Factor VII activity	Citrated plasma (blue top), must be full. Do not draw from Hickman, arterial line or with ABG's.	0-5 months 0.28-1.04 U/mL 6-12 months 0.42-1.38 U/mL > 12 months 0.67-1.43 U/mL	Core Lab			Not available
Factor VIII activity	Citrated plasma (blue top), must be full. Do not draw from Hickman, arterial line or with ABG's.	All ages: 0.5-2.0 U/mL	Core Lab			
Factor VIII Inhibitors	Citrated plasma (blue top), must be full. Do not draw from Hickman, arterial line or with ABG's.	All ages: None	Core Lab			Not available
Factor X activity	Citrated plasma (blue top), must be full. Do not draw from Hickman, arterial line or with ABG's.	<1 month 0.12-0.7 U/mL 1-5 months 0.3-1.2 U/mL >5 months 0.7-1.5 U/mL	Core Lab			Not available
Factor XI activity	Citrated plasma (blue top), must be full. Do not draw from Hickman, arterial line or with ABG's.	>1 month 0.1-0.66 U/mL 1-5 months 0.17-1.15 U/mL >5 months 0.67-1.27 U/mL	Core Lab			Not available
Factor XII	Citrated plasma (blue top), must be full. Do not draw from Hickman, arterial line or with ABG's.	<1 month 0.13-0.85 U/mL 1-5 months 0.17-1.15 U/mL >5 months 0.5-1.5 U/mL	Core Lab			Not available

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Factor XIII screen	Citrated plasma (blue top), must be full. Do not draw from Hickman, arterial line or with ABG's.	All ages: Clot stable in 5 molar urea	Core Lab			
Farmer's Lung battery	Serum (red top), 2.0 mL.	Negative	Reference Lab (VA)			
Fascioliasis Antibody	Serum (SST), 2.0 mL.	less than or equal to <1:32, Negative	Reference Lab (Parasitic Disease Consultants)			
Fat, fecal	Feces, 72 h collection; obtain preweighed container from Special Chemistry (257-1550). Refrigerate during collection.	2-7 g/24 hr and/or < 20% of total solids	Reference Lab (Mayo)			
Fat, urine	Urine	Negative	Core Lab			
Febrile agglutinins Panel	Serum (SST), 5.0 mL	By report	Reference Lab (Focus)			
Ferritin	Serum (SST), 1.0 mL	Males: Females: 1-7 d: 34-432 ng/dL 46-620 ng/mL 8-15 d: 32-233 ng/mL 53-237 ng/mL 1-17 y: 4-98 ng/mL 4-122 ng/mL 18 y and Up, 17-314 ng/mL 12-135 ng/mL	Immunochemistry			
Fetal fibronectin	Vaginal swab Symptomatic: 24-35 wks Asymptomatic: 22-31 wks	Negative	Toxicology (Special Form)			
Fetal Hemoglobin (Alkalai Denaturation)	Whole blood (purple top), fill tube completely.	0-5 months 8-85% 6-12 months 0-8% 13-24 months 0-5% >24 months 0-2%	Core Lab			Not available
Fetal Lung Maturity	Amniotic fluid, 1.0 mL, Order on FLM requisition.	Immature: <40 mg/g Albumin Transitional: 40-54 mg/g Albumin Mature: >54 mg/g Albumin	Toxicology (Special Form)			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Fibrinogen	Citrated plasma (blue top, must be full). Do not draw from Hickman, arterial line or with ABG's.	0-4 wk 125-300 mg/dL >1 month 150-450 mg/dL	Core Lab			1 hr
Filariasis titer	Serum (red top), 2.0 mL	Negative by IHA, <1:32	Reference Lab (Parasitic Disease Consultants)			
Fine Needle Aspiration	See COMMENT area for instructions on scheduling FNAs. Fix prepared slides in 95% ethanol and label with patient name and/or hospital number. For liquid based collection instructions and supplies, call Cytology Laboratory 7-3640.	See report	Cytology	Call the cytology laboratory 257-3640 to schedule procedures. Fine needle aspiration biopsies are performed by the pathologists on superficial masses from 8 a.m. to 4:30 p.m. Monday-Friday. Aspirations performed under radiologic guidance can have assistance (making slides and assessing adequacy) from the cytology laboratory from 8 a.m. to 3:30 p.m. Monday-Friday. If an emergency FNA procedure is required evenings/weekends, please call the anatomic pathology resident on call.		
Flow Crossmatch	Patient: Serum (red Top), 1.0 mL Donor: Whole Blood (yellow Top), 20.0 mL		Immunomolecular Pathology			
Flow PRA, Flow Antibody Screen	Serum (red top), 1.0 mL		Immunomolecular Pathology			
Fluoxetine	Serum (SST), 3.0 mL	Therapeutic: Fluoxetine, 50-480 ng/mL Norfluoxetine, 50-450 ng/mL	Reference Lab (ARUP)			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Folate, red cell	Whole blood (purple top), 1.0 mL	280-903 ng/mL	Reference Lab (ARUP)			
Folate, serum	Serum (SST), 1.0 mL	1year and up: >5 ng/mL	Immunochemistry			
Follicle stimulating hormone	Serum (SST), 1.0 mL	1 d - 3 y: M:None detected-5.5 mIU/mL F: None detected-13 mIU/mL 4 - 9 y: M: None detected-1.9 mIU/mL F: 0.1 - 1.6 mIU/mL Tanner Stages: Male: Female: 1 0.2-3.5 mIU/m 0.4-3.6mIU/mL 2-3 0.4-6 mIU/mL 1.2-8.9 mIU/mL 4 1.4-11.8 mIU/mL 1.6-9.1mIU/mL 5 1.3-14.9 mIU/mL 1.2-12.3mIU/mL 18 y up: M: 0.9-11.8 mIU/mL F: Follicular: F: 2.8-11.3 mIU/mL Midcycle F: 5.8-21 mIU/mL Luteal: F: 1.2-9 mIU/mL Postmenopause: 22-153 mIU/mL Oral Contraceptives: ND-4.9 mIU/mL	Immunochemistry			
Fragile X by Chromosome Analysis	See pages 13-14, call 7-3736 with questions	Interpretation given with reports	Cytogenetics			
Fragile X by DNA Analysis	Whole blood (purple or yellow top), 2.0 mL	Given with report	Reference Lab (Baylor)			
Free T3	Serum (red top), 1.0 mL	2.2-4.0 pg/mL	Reference Lab (ARUP)		3 days	NA
Free T4 (In-house immunoassay)	Serum (red top), 1.0 mL	1-7 d: 1.7-6.9 ng/dL 8-15 d: 1.3-5.2 ng/dL 1-12 y: 0.7-2.3 ng/dL >13 y: 0.9-1.6 ng/dL	Immunochemistry			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Free T4 (equilibrium dialysis)	Serum (red top), 1.0 mL	By Report	Reference Lab (ARUP)		5 days	NA
Frozen Cell Processing for tissue typing	Schedule with laboratory, 3-5723. yellow top, 20.0 mL		Immunomolecular Pathology			
FTA-ABS, CSF	Cerebrospinal fluid, 1.0 mL	Non-reactive	Reference Lab (MRL)			
Fungal agglutination for:Cryptococcus neoformans, (latex)	CSF or serum (red top), 2.0 mL	Negative	Microbiology			
Fungal Serology Battery Includes complement fixation and immunodiffusion to identify the presence of Histoplasma capsulatum, Blastomyces dermatitidis, Aspergillus sp., and Coccidioides immitis.	Serum (SST), 4.0 mL	No detectable antibody	Reference Lab (VA) (complement fixation-FUCF) Immu			
G6PD Screen,(Qualitative) Glucose-6-Phosphate Dehydrogenase	Whole blood collected in EDTA, heparin, or ACD.	Normal G-6-PD present.	Core Lab	This is a qualitative test. Quantitative tests should be ordered separately and are sent to a commercial lab.		Not available
Gabapentin	Serum (red top), 2.5 mL	Therapeutic: Not well established. Minimum concentration fro desirable efficacy: 2.00 µg/mL	Reference Lab (ARUP)		3 days	NA
Galactose-1-phosphate	Whole blood (green top), 5.0 mL. Place on ice and deliver to lab immediately.	0.00-0.17 µmol/gHgb	Reference Lab (Childrens Hosp., L.A.)			
Galactose-1-phosphate transferase	Whole blood (green top), 5.0 mL. Place on ice and deliver to lab immediately.	Activity: 17.0-37.0 µmol/hr/gHgb	Reference Lab (Childrens Hosp., L.A.)			
Galactose-1-phosphate transferase genotype	Whole blood (green top), 5.0 mL. Place on ice and deliver to lab immediately.	with report	Reference Lab (Childrens Hosp., L.A.)			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Gamma Hydroxybutyric Acid		negative	Toxicology		2-4 hrs.	2 hrs.
Gastric analysis	10 mL gastric aspirate	By report	Reference Lab (ARUP)			
Gastrin	Serum (red top), 1.5 mL; unstable, deliver to lab immediately.	0-100 pg/mL	Reference Lab (ARUP)			
Gentamicin	Plasma, green top (PST), 1.0 mL	Therapeutic: Peak, Less sev.inf: 5-8 µg/mL Sev. Inf: 8-10 µg/mL Trough, Less sev. Inf: <1 µg/mL Moderate inf: <2 µg/mL Severe inf: <2-4 µg/mL Toxic, Peak: >10 µg/mL Trough: >2-4 µg/mL	TDM	A trough specimen is drawn just prior to the next dose. A peak specimen is drawn 60 minutes after the IV drug infusion has begun.		
GGT: Gamma glutamyltransferase	Plasma green top (PST), 2.0 mL	1-3y: 6-19 U/L 4-9y: 10-25 U/L 10-13y: 17-45 U/L 14-17y: 12-35 U/L >17y M: 12-58 U/L F: 12-43 U/L	Core Lab		2h	1h
Gliadin IgG, IgA Antibodies	Serum (red top), 3.0 mL	Negative Equivocal Positive GliadinAb,IgA, 0-2 yr: </=20 EU 20.1-24.9 EU >/= 25 EU 3 yr and older: </=25 EU 25.1-29.9 EU >/= 30 EU GliadinAb, IgG, 0-2 yr: </=20 EU 20.1-24.9 EU >/= 25 EU 3 yr and older: </=25 EU 25.1-29.9 EU >/= 30 EU	Reference Lab (ARUP)		3 days	

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Glucagon	EDTA, 3 mL deliver to lab immediately, 2.0 mL. Obtain tube from Lab Central, HA619.	40-130 ng/mL	Reference Lab (ARUP)			
Glucose Challenge - OB screen	Plasma, green top (PST) 1.0 mL	Dose: 50 g <140 mg/dL 1 hour post challenge	Core Lab	Patient does not have to be fasting.	4 hour	1 hour
Glucose Tolerance - Gestational Diabetes	Plasma, green top (PST), 0.5 mL	Age: Adult Dose: 100 g Time Glucose, mg/dL Fasting: <95 60 min: <180 120 min: <155 180 min: <140 Gestational diabetes is confirmed if at lease 2 values exceed the above limits.	Core Lab	Test should be done in the morning after an overnight fast of 8-14 h and after at least 3 days of unrestricted diet (> 15 g carbohydrate/d) and unlimited physical activity. The subject should remain seated and should not smoke throughout the test.	4 hour	1 hour
Glucose Tolerance, 2 hour	Plasma, green top (PST), 1.0 mL; fasting and 2h post glucose dose	Age: Dose: 0-17m 2.5 g/kg 18m-2y 2.0 g/kg 3-12y 1.8 g/kg >12y 1.3 g/kg Adult: 75g Fasting 2 hr Normal 80-99 mg/dL <140 mg/dL Impaired fasting glucose 100-125 mg/dL ---------- Impaired glucose tolerance ---------- 140-199 mg/dL Diabetes >125 mg/dL >199 mg/dL *A diagnosis of diabetes needs to be confirmed by repeat testing on a separate day.	Core Lab	Test should be done in the morning after an overnight fast of 8-14 h and after at least 3 days of unrestricted diet (> 15 g carbohydrate/d) and unlimited physical activity. The subject should remain seated and should ot smoke throughout the test.	4 hour	NA

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Glucose, CSF	CSF, 0.5 mL	0-11y 60-80 mg/dL >11y 40-70 mg/dL or <70% of serum value.	Core Lab		2h	1h
Glucose, fasting	Plasma, green top (PST), 0.5 mL	0-7d: 40-99 mg/dL 8d-<1m: 50-99 mg/dL 1m-11m: 50-99 mg/dL 1y-18y: 60-99 mg/dL >19y: 80-99 mg/dL	Core Lab		4h	1h
Glucose, Fluid	Fluid, 0.5 mL	Not available	Core Lab			
Glucose, urine 24 h	Urine, 24 h; collect in boric acid	<0.5 g/d or 1-15 mg/dL	Core Lab			
Glucose, Urine random	Urine, random, 0.5 mL	Not available	Core Lab			
Glucose-6-Phosphate Dehydrogenase Screen; Erythrocyte, Fluorescent Spot	Whole blood (purple top), 3.0 mL	Reported as normal	Core Lab			
Glycohemoglobin	2 mL EDTA whole blood	Normal, 4.4-5.8%	Toxicology		1 day	No
Glycosaminoglycans	Urine, 20 mL, early morning specimen. Transport on ice and deliver to lab immediately.	with report	Reference Lab (Mayo)			
Glycosylated Hemoglobin (H A1C)	Whole blood (purple top), 1.0 mL	Normal (nondiabetic): 4.4-5.8%	Toxicology			
Gonococcus culture	Submit in transgrow medium; available in lab, HA632.	Negative	Microbiology			
Growth hormone	Serum (SST) 1.5 mL	male female 0-15 yr, 0.10-8.80 ng/mL 0.10-8.80 ng/mL 16 yr and older: 0.01-1.00 ng/mL 0.03-10.0 ng/mL	Reference Lab (ARUP)	Fasting specimen required	3 days	
Growth Hormone Antibodies	Serum (red top), 1.0 mL	By report	Reference Lab (ARUP)		7 days	

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Ham's acid hemolysis	Collect 10.0 mL plain red and one 5.0 mL lavendar (EDTA) tube	Negative	Reference Laboratory			
Hantavirus	Contact Special Chemistry at 7-1550 for further information.	Individual interpretation	Reference Lab (CDC)			
Haptoglobin	Serum, red top (SST), 0.5 mL	6m-18y: 22-169 mg/dL >18y: 40-220 mg/dL	Core Lab		1-4 days	
hCG, (total beta)	Plasma, green top (PST), 1.5 mL	2 y up: < 6 mIU/mL	TDM			
HDL Cholesterol	Plasma, green top (PST), 0.5 mL	HDL-C TC/HDL Desirable: >59 mg/dL <5.0 Borderline: 5.0-6.0 Undesirable: <40 mg/dL >6.0	Core Lab		2h	1h
Heavy Metals, Blood	Whole blood, royal blue, (sodium EDTA), 3.5 mL. Obtain tubes from Lab Central, HA619.	Arsenic: 0-62 µg/L Lead: By report Mercury: 0-60 µg/L	Reference Lab			
Heavy Metals, Urine	Urine, 24 h, collect in plastic container. Obtain container from Lab Central, HA619.	Arsenic: 0.0-63.9 µg/d Lead: 0--31 µg/d Mercury: 0-15 µg/d	Reference Lab			
Helicobacter pylori, IgG Antibody	Serum (SST), 2.0 mL	Negative, <0.9 µ/mL	Immunochemistry			
Hematocrit	Whole blood (purple top), 1.0 mL or microtainer	<7d 42-65% 1-7wk 31-56% 2-23m 28-42% 2-9y 33-43% 10-17y 35-49% >17y M 40-50% F 35-45%	Core Lab		2h	1h
Hemochromatosis	Whole blood (yellow top or purple top), 3.0 mL		Immunomolecular Pathology			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Hemoglobin	Whole blood (purple top), 1.0 mL	<7d 13.5-23.0 g/dL 1-7wk 10.0-18.0 g/dL 2-23m: 9.5-14.0 g/dL 2-9y: 11.5-14.5 g/dL 10-17y: 12.0-16.0 g/dL >17y M: 13.5-17.2 g/dL F: 11.9-15.5 g/dL	Core Lab		2h	1h
Hemoglobin A2 by column	Whole blood (purple top), 2.0 mL	1.5-3.5 %	Core Lab			
Hemoglobin Electrophoresis	Whole blood (purple top), 3.0 mL	Hgb A: >95 % Hgb A2: 1.5-3.5 % Hgb F: 0 - 6m 8-85% 6-11m 0-8% 12-23m 0-5% > 23m <2%	Core Lab	Includes cellulose acetate strip, HgbF by alkali denaturation, A2 by column. Solubility test and acid electrophoresis on agar gel performed if indicated.		
Hemoglobin S screen,	Whole blood (purple top), 2.0 mL	Negative for sickling hemoglobin	Core Lab			
Hemoglobin saturation panel	Whole Blood (Gas-Lyte Syringe or green top). Place on ice and deliver to lab immediately.	Total hemoglobin: See Hemoglobin, whole blood. Oxygen Saturation (arterial) 0-4 d: 85-90% Thereafter: 95-98% % Oxyhemoglobin, >3 m: 94-97 % Reduced hemoglobin, >12 y: 0-4.1	Core Lab	Iincludes total hemoglobin, oxygen saturation, % oxyhemoglobin, reduced hemoglobin		
Hemoglobin, A1C	Whole blood (purple top), 2.0 mL	Normal (nondiabetic): 4.4-5.8 %	Toxicology			
Hemoglobin, plasma free	Plasma, (green or purple top), 5.0 mL; specify method of drawing specimen.	<10 mg/dL (venipuncture) <3 mg/dL with butterfly set-up and 18 g needle	Toxicology			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Hemogram	Whole blood (purple top), 2.0 mL	WBC, White Blood Cell Count <1 wk 5.5-30.0 k/µL 1-7 wk 5.5-21.0 k/µL 2-23 m 6.0-15.0 k/µL 2-9 y 4.0-12.0 k/µL 10-17y 4.0-10.8 k/µL >17y 4.0-10.5 k/µL RBC. Red Blood Cell Count <1 wk 3.2-6.5 M/µL 1-7 wk 3.1-5.3 M/µL 2-23 m 3.2-5.4 M/µL 2-9 y 3.8-5.4 M/µL 10-17y 3.8-5.4 M/µL >17y M 4.5-5.7 M/µL F 4.0-5.3 M/µL Hemoglobin <1wk 12.0-22.0 g/dL 1-7wk 10.0-17.0 g/dL 2-23m 9.5-14.0 g/dL 2-9y 10.0-14.5 g/dL 10-17y 11.0-16.0 g/dL >17y M 13.5-17.2 g/dL F 11.9-15.5 g/dL Hematocrit <1 wk 35-65% 1-7wk 31-51% 2-23m 28-42% 2-9y 33-43% 10-17y 33-49% >17y M 40-50% F 35-45% MCV, Mean Corpuscular Volume <1wk 92-115 fL 1-7wk 82-110 fL 2-23m 70- 90 fL 2-9y 75- 95 fL 10-17y 78- 95 fL >17 y 80- 95 fL MCH, Mean Corpuscular Hemoglobin <1 wk 30-39 pg 1-7 wk 28-36 pg	Core Lab		2h	1h

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
		2-23 m 24-30 pg 2-9 y 24.6-33 pg 10-17y 26-33 pg >17 y 27-33 pg MCHC, Mean Corpuscular Hemoglobin Concentration 33.2 - 35.3 g/dL RDW, Red Cell Distribution Width <1 wk 12-19 1-7 wk 12-19 2-23m 12-16 >23m 12.1-15.3 Platelet Count 150.0 - 450.0 k/µL MPV, Mean Platelet Volume 7.0 - 10.6 fL				
Hemosiderin, Urine	Urine, random, 10 mL freshly voided. Use no preservative.	Negative	Core Lab			
Heparin Dependant Antibody	Serum 2.0 mL	Negative	Special Chemistry	Assay performed daily, cutoff 12pm.		
Heparin level (unfractionated)	Citrated plasma (blue top, must be full). Do not draw from Hickman, arterial line or with ABG's.	All ages: none	Core Lab	Therapeutic level 0.3 to 0.7 heparin units per mL		Not available
Hepatitis A IgM Antibody	Serum (SST), 2.0 mL	Negative	Immunochemistry			
Hepatitis A Antibody (Total: IgG and IgM)	Serum (SST), 2.0 mL	Negative	Immunochemistry			
Hepatitis B Core Antibody (Total: IgG and IgM)	Serum (SST), 2.0 mL	Negative	Immunochemistry			
Hepatitis B Core Antibody, IgM	Serum (SST), 2.0 mL	Negative	Immunochemistry			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Hepatitis B Surface Antibody (Anti-HAA, HBsAB, anti-HBs)	Serum (SST), 2.0 mL	Negative < 10 milli-International Units/mL Positive > or = 9 milli-International Units/mL	Immunochemistry			
Hepatitis B Surface Antigen	Serum (red top), 2.0 mL	Negative Positive specimens will have confirmation performed.	Immunochemistry			
Hepatitis B Virus, (Qualitative) DNA by PCR	Whole blood (yellow top), 3.0 mL,. Serum from red top is also acceptable. Specimen must be received by lab within 4 hours of collection. NOTE: THIS TEST IS FOR RESEARCH USE ONLY.	Negative	Microbiology (ARUP)			
Hepatitis B Virus, Quantitative DNA	Serum (red top), 3.0 mL NOTE: THIS TEST IS FOR RESEARCH USE ONLY.	0.00 picograms/mL	Microbiology (ARUP)			
Hepatitis Be Antibody	1.0 mL SST, Serum, 0.4 mL minimum	Negative	Reference Lab (ARUP)		3 days	
Hepatitis Be Antigen (HBeAg)	1 mL, SST, Serum, 0.4 mL minimum	Negative	Reference Lab (ARUP)		3 days	
Hepatitis C Antibody	Serum (SST), 2.0 mL	Negative. Positive specimens will have confirmation performed.	Immunochemistry			
Hepatitis C confirmation by PCR	Serum (red top), 2.0 mL	Negative	Microbiology			
Hepatitis C Virus RNA Genotype	Plasma from whole blood collected in ACD or EDTA or Serum from red top. Note: Deliver specimen to lab within 4h of collection. NOTE: THIS TEST IS FOR RESEARCH USE ONLY.	By report	Microbiology (VA)			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Hepatitis C Virus(Qualitative) RNA by PCR	Plasma (yellow top), 4.0 mL, Serum from Red Top is also acceptable. Note: Deliver specimen to lab within 4h of collection. NOTE: THIS TEST IS FOR RESEARCH USE ONLY.	Negative	Microbiology (VA)			
Hepatitis C VirusQuantitative RNA by RT-PCR	Serum (red top), 3.0 mL, Plasma from whole blood collected in ACD or EDTA is also acceptable. Note: Deliver specimen to lab within 4h of collection. NOTE: THIS TEST IS FOR RESEARCH USE ONLY.	<600 IU/mL	Microbiology			
Hepatitis Panel, acute	Serum (SST), 4.0 mL		Immunochemistry			
Hereditary Hemochromatosis (Molecular Analysis)	Whole blood (yellow top or purple top), 3.0 mL		Immunomolecular Pathology			
Herpes Simplex I & II IgG Antibody	Serum (SST), 2.0 mL	negative	Immunochemistry			
Herpes Simplex I & II IgM Antibody	Serum (SST), 1.0 mL	< 0.90 IV - Negative 0.90 - 1.09 IV - Equivocal-Repeat testing in 10-14 days >1.09 IV - Positive	Reference Lab (ARUP)		3 days	
Herpes Simplex I & II IgM Antibody, CSF	CSF, 1.0 mL	Negative	Reference Lab (Focus)			
Herpes Simplex Virus DNA by PCR	CSF, 1.0 mL or Whole blood in EDTA 5.0 mL., tissue, vesicle fluid. NOTE: THIS TEST IS FOR RESEARCH USE ONLY.	Negative	Microbiology			
Herpes Simplex Virus isolation	Tissue, body fluids. Virocult available in PCS. Submit on ice. Contact Virology, 3-5411.	No virus isolated	Microbiology			
Herpes Six Antibody, IgG & IgM	Serum (SST), 2.0 mL.	IgG: <1:10 IgM: <1:20	Reference Lab (Focus)			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Hexosaminidase (A and total)	Serum (red top), 3.0 mL	Total: 10.4-23.8 U/L Hex A: 56-80% of total (Males and Non-pregnant Females: >5y)	Reference Lab (Mayo)			
Hexosaminidase (WBC)(A and total, Leukocytes) (Pregnant Females)	Whole Blood (yellow top), 7.0 mL. Draw M, Tu, W ONLY. Need physician's name and phone number on request form.	Total:16.4-36.2 U/g of cellular protein Hex A: 63-75% of total (normal)	Reference Lab (Mayo)			
Hfe	Whole blood (yellow top or purple top), 3.0 mL		Immunomolecular Pathology			
High Resolution DRB	Whole Blood (yellow top), 5.0 mL		Immunomolecular Pathology			
Histone Antibody, IgG	Serum (red top), 2.0 mL. Deliver to lab immediately.	None detected: <1.0 Units Inconclusive: 1.0-1.5 Units Positive: 1.6-2.5 Units Strong Positive: >2.5 Units	Reference Lab (ARUP)			
Histoplasma Antigen (Urine)	Urine, 10 mL	Negative	Microbiology/Reference Lab			
HIV I & II Antibody	Serum (SST), 3.0 mL	Nonreactive.	Toxicology			
HIV1 Rapid Screen		Nonreactive	Special Chemistry	Rapid HIV1 is not intended for the screening of Transplant patients. Use of test restricted for needle stick/splash exposure or for high risk OB patiens without prior testing at time of delivery. Test not CODA approved for organ transplant patients.		60 min.
HIV-1 RNA Phenotype for Drug Resistance	Plasma, 4 mL, from whole blood collected in EDTA. NOTE: Specimen must be received by lab within 4 hours of collection. NOTE: This test is for research use only.	By report	Microbiology (ARUP)			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
HIV-1 RNA Ultrasensitive Quantitation	Whole blood (ACD/EDTA), 5 mL. Specimen must be received by lab within 4 hours of collection	<50 copies/mL	Microbiology (Specialty)			
HIV-I DNA by PCR (Qualitative)	Whole Blood (yellow top), 3 mL Important: specimen must remain at room temp. NOTE: THIS TEST IS FOR RESEARCH USE ONLY.	No HIV-1 DNA detected	Microbiology (Viromed)			
HIV-I P24 Antibody	Serum (SST), 3.0 mL	Negative	Reference Lab (ARUP)			
HIV-I P24 Antibody, CSF	CSF, 1.0 mL	Negative	Reference Lab (ARUP)			
HIV-I RNA by RT-PCR Quantitative (Viral load)	Whole Blood (ACD/EDTA), 3.0 mL Specimen must be received by lab within 4 hours of collection.	<400 copies RNA/mL	Microbiology			
HIV-I RNA Genotype for Drug Resistance	Plasma, 4 mL, from whole blood collected in EDTA. NOTE: Specimen must be received by Lab within 4 hours of collection. NOTE: THIS TEST IS FOR RESEARCH USE ONLY.	By report	Microbiology (Specialty)			
HLA Complete for transplant	Whole Blood (yellow top), 5.0 mL		Immunomolecular Pathology			
HLA (DRB) by DNA	Whole Blood (yellow top), 5.0 mL		Immunomolecular Pathology			
HLA A, B typing for blood component transfusion	Whole Blood (yellow top), 20 mL		Immunomolecular Pathology			
HLA AB by DNA	Whole Blood (yellow top), 5.0 mL		Immunomolecular Pathology			
HLA Antibody	Serum (red top), 1.0 mL	Negative	Immunomolecular Pathology			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
HLA DR High Resolution Typing	Whole Blood (yellow top), 5.0 mL		Immunomolecular Pathology			
HLA for crossmatch for transplantation	Patient: serum (red top), 1.0 mL Donor: yellow top, 20.0 mL Submit within 1 hr of collection. Do not refrigerate		Immunomolecular Pathology			
HLA typing: B27	Whole blood (yellow top), 3.0 mL		Immunomolecular Pathology			
HLA-HHemochromatosis	Whole blood (yellow top or purple top), 3.0 mL		Immunomolecular Pathology			
Homocysteine, plasma	Plasma (purple top), 2.0 mL. Place on ice. Deliver to Lab immediately.	M: 4-12 umol/L F: 4-10 umol/L	Reference Lab			
Homocysteine, urine quantitative	Random urine sample, 10 mL	0-53 mg/g of creatinine 0-32 mg/dL	Reference Lab			
Homovanillic acid	Urine, 24 h. Refrigerate during collection	18 yrs and older: 0.0-15 mg/d	Reference Lab(ARUP)		5 days	
Human herpes Virus Six Detection by Nucleic Acid Amplification	CSF, whole blood in ACD or EDTA. NOTE: THIS TEST IS FOR RESEARCH USE ONLY.	No Human Herpes Virus Type 6 DNA detected	Microbiology (Viromed)			
Human papillomavirus DNA Test	Non-pregnant patients: Use Digene Cervical Sampler kit or Thin Prep Pap Test Kit (Obtain both from KY Clinic Lab). Pregnant patients: Use sterile rayon or dacron plastic shaft swabs to collect specimen. Place swab in transport media from Digene Cervical Sampler kit. DO NOT USE CERVICAL BRUSH WITH PREGNANT WOMEN. (As adjunctive test on liquid based thin prep vial see cervical vaginal cytology)	Interpretation given with report	Microbiology			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Human T-LymphotropicVirus Type I Antibody	Serum (SST), 2.0 mL	Negative	Reference Lab (ARUP)			
Human T-LymphotropicVirus Type I Antibody by Western Blot	Serum (red top), 2.0 mL	Negative	Reference Lab (ARUP)			
Huntington's Disease by DNA Analysis	Whole blood (purple or yellow top), 2.0 mL	Given with report	Reference Lab (Baylor)			
Hydroxyproline;total	Urine, 24 h. Obtain container from Lab Central, HA619.	38-500 umol/d	Reference Lab			
IgA	Plasma, green top (PST), 0.5 mL	0-11m: 0-83 mg/dL 1-3y: 20-100 mg/dL 4-6y: 27-195 mg/dL 7-9y: 34-305 mg/dL 10-11y: 53-204 mg/dL 12-13y: 58-359 mg/dL 14-15y: 47-249 mg/dL 16-19y: 61-348 mg/dL >19 y: 100-400 mg/dL	Core Lab		2h	1h
IgG	Plasma, green top (PST) 0.5 mL	0-11 m: 232-1411 mg/dL 1-3y: 453-916 mg/dL 4-6y: 504-1465 mg/dL 7-9y: 572-1474 mg/dL 10-11y: 698-1560 mg/dL 12-13y: 759-1550 mg/dL 14-15y: 716-1711 mg/dL 16-19y: 549-1584 mg/dL >19y: 630-1580 mg/dL	Core Lab		2h	1h
IgG subclasses (1,2,3,4)	Serum (6.0 mL SST), 3.0 mL	Given with report	Reference Lab			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
IgM	Plasma, green top (PST), 0.5 mL	0-11m: 0-145 mg/dL 1-3y: 19-146 mg/dL 4-6y: 24-210 mg/dL 7-9y: 32-208 mg/dL 10-11y: 31-180 mg/dL 12-13y: 35-239 mg/dL 14-15y: 15-188 mg/dL 16-19y: 23-257 mg/dL >19y: 37-247 mg/dL	Core Lab		2h	1h
Imipramine, quantitative	Serum (SST), 4.0 mL, plasma also acceptable	Imipramine plus Desipramine, Therap: 150-300 ng/mL Toxic: >500 ng/mL	Reference Lab (ARUP)		3-5 days	
Immune Complex Panel	Serum (red top), 3.0 mL	Raji cell: 0-25 ugE/mL, neg >25 ugE/mL, pos CQ1: <4 ugE/mL, neg	Reference Lab			
Immunofixation Electrophoresis, Serum	Serum (SST)	Interpretation given with report	Immunochemistry	Testing performed Tuesday and Friday. See Bence Jones protein for Urine.	1-3 days	
Immunoglobulin A, CSF	CSF, 0.5 mL	0.0-0.7 mg/dL	Reference Lab			
Immunoglobulin CSF	CSF, 0.5 mL	>16 y up: 0.4-6.0 mg/dL	Reference Lab (ARUP			
Immunoglobulin D	6.0 mL SST, Serum (red top), 4.0 mL	Male: 1.0-5.1 mg/dL Female: 1.0-7.4 mg/dL	Reference Lab			
Immunoglobulin E	Serum (SST), 1.0 mL	0-364 d: 0-8 IU/mL 1-2 y: 0-12 IU/mL 3 y: 0-24 IU/mL 4-5 y: 0-50 IU/mL 6 y: 0-70 IU/mL 7-14 y: 0-120 IU/mL 15 yr and older: 0-180 IU/mL	Reference Lab (ARUP)		3 days	

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Immunoglobulin M, CSF	CSF, 0.5 mL	0-0.7 mg/dL	Reference Lab		3 days	
Immunoglobulins, CSF, quantitative,	CSF, 0.5 mL	IgA, CSF - 0.0-0.7 mg/dL IgG, CSF - 0.0-6.0 mg/dL IgM, CSF - 0.0-0.7 mg/dL	Reference Lab (ARUP)		3 days	
India ink examination	Contact laboratory for instructions, 3-5411.	Negative	Microbiology			
Influenza A and B by Direct EIA	Contact Virology Lab, 3-5411	Negative	Microbiology			
Influenza A Virus Antibody	Serum (red top), 1.5 mL	<1:8	Reference Lab (ARUP)		3 days	
Influenza B Virus Antibody	Serum (red top), 1.0 mL	<1:8	Reference Lab (ARUP)			
Influenza FA Test for A	Contact Virology Lab, 3-5411.	Negative	Microbiology			
Influenza Virus isolation (A & B)	Contact Virology Lab, 3-5411.	No virus isolated	Microbiology			
Insulin antibodies	6 mL SST, Serum, 4.0 mL minimum	<3% binding by patient serum	Reference Lab			
Insulin tolerance test	Serum (red top), 1.0 mL; 0, 30, 45, 60 and 90 minutes after insulin from indwelling needle.	Glucose: <40 mg/dL	Core Lab	Insulin dose: 0.1-0.15 U/kg, I.V., after overnight fast. Medical supervision required.		
Insulin with oral glucose tolerance	Serum (SST), 1.0 mL; deliver to lab immediately	0 min: 3-20 µU/mL 30 min: 25-231 µU/mL 60 min: 18-276 µU/mL 120 min: 16-166 µU/mL 180 min: 4-38 µU/mL	Immunochemistry			
Insulin, fasting	Serum (red top), 1.5 mL	2-12 y: 0-10 µIU/mL >18 y: 3-27 µIU/mL	Immunochemistry			
Insulin: CORTS		Cortisol: Increase to peak value of >20 µg/dL	Immunochemistry			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Insulin:HGH		hGH: Increase to peak value of >10 ng/mL	Reference Lab (ARUP)			
Insulin-like growth factor binding protein-2	Serum (red top), 1.0 mL	1-9 y: 69-480 ng/mL 10-17 y: 50-326 ng/mL 18-49 y: 55-240 ng/mL >49 y: 28-444 ng/mL	Reference Lab (Quest)			
Insulin-like growth factor binding protein-3	6 mL SST, Serum, 4.0 mL	with report	Reference Lab			
Insulin-like growth factor I	Serum (red top), 1.5 mL	with report	Reference			
Intrinsic factor blocking antibodies	Serum, (6.0 mL SST), minumum 4.0 mL	Negative	Reference Lab			
Iron	Plasma, green top (PST), 0.5 mL	MALE FEMALE 1-364d 30-110 27-127 µg/dL 1-5y 22-136 22-136 µg/dL 6-9y 39-136 39-136 µg/dL 10-14y 28-134 45-145 µg/dL 14-19y 34-162 28-184 µg/dL >19y 48-173 40-167 µg/dL	Core Lab	Specimens should be collected in the morning to avoid low results due to diurnal variation. Iron tests should be delayed several days following blood transfusions. Blood for iron testing should be drawn before other specimens that require anticoagulated tubes.	2h	1h
Iron Binding Capacity and Total Iron	Plasma, green top (PST), 1 mL	Total Iron: MALE FEMALE 1-364d 30-110 27-127 µg/dL 1-5y 22-136 22-136 µg/dL 6-9y 39-136 39-136 µg/dL 10-14y 28-134 45-145 µg/dL 14-19y 34-162 28-184 µg/dL >19y 48-173 40-167 µg/dL Total Iron Binding Capacity: 269-456 µg/dL % Saturation: 15-50 %	Core Lab		2h	1h

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Iron, Liver tissue	Liver tissue, 0.5 mm x 1.0 cm needle biopsy. Send in metal free container.	M: 200-2,400 µg/g dry wt. F: 400-1,600 µg/g dry wt.	Reference Lab (Mayo)			
Iron, urine	Urine, 24 h or random	By report	Reference Lab			
Islet Cell Antibody	6 mL SST, Serum, 4.0 mL	< 1:4, No antibody detected	Reference Lab			
Isoagglutinin titer, anti-A and/ or Anti-B Hemagglutination	Clotted Blood (red top), 10 mL	Interpretation depends on clinical setting.	Blood Bank			
JC Virus DNA by PCR	CSF, 0.5 mL	Negative	Microbiology (Mayo)			
Karyotype	See Chromosome Analysis.		Reference Lab			
Ketone, qualitative	Plasma, green top (PST), 0.5 mL, must be kept tightly capped.	Negative	Core Lab			
KGS	Urine 24 h, for 6 d; Collected with boric acid. (Days 1 and 2 are baseline measurements.)	By Report	Reference Lab (ARUP)			
Kidney stone analysis	Kidney stone	Composition given with report	Reference Lab (ARUP)		5 days	
Kleihauer-Betke stain	Whole blood (purple top)	100% fetal or 100% adult cells depending or source of specimen	Core Lab			
KOH	Skin scrapings. Liquid specimen, 0.5 mL. Contact lab for instructions, 3-5411.	No hyphal elements or yeast seen	Microbiology			
L/L Spin	CSF. Deliver immediately to Lab Central Receiving.	See report	Core Lab			
Lactate dehydrogenase, Fluid	Fluid, 0.5 mL	Not available	Core Lab			
Lactic Acid, CSF	CSF	<3d: 1.1-6.7 mmol/L 3-9d: 1.1-4.4 mmol/L 10d-17y: 1.1-2.8 mmol/L >17y: 1.1-2.4 mmol/L	Core Lab		2h	1h

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Lactic Acid: Lactate	Plasma (gray top), must be at least half full. Deliver on ice immediately. Patient must be at complete rest.	0.5-2.2 mmol/L	Core Lab		2h	1h
Lactose tolerance, oral	Plasma, green top (PST), 1.0 mL; 0, 15, 30, 45, 60 and 90 minutes after disaccharide consumption	Peak: >30 mg/dL above base glucose level	Core Lab			
Lamotrigine	Serum (red top), 1.5 mL	Therapeutic range not established	Reference Lab (ARUP)			
Latex Allergen	Serum (red top), 1.0 mL	Given with report	Reference Lab (Quest)			
Latex testing for antigens in body fluids: Group B Streptococcus, Streptococcus pneumoniae, Neisseria meningitidis, Haemophilus influenzae, Group B	CSF, Urine, Serum	Negative for the antigen tested	Microbiology			
LDH, CSF: Lactate dehydrogenase, CSF	CSF, 0.5 mL	<20 U/L	Core Lab		2h	1h
LDH: Lactate dehydrogenase	Plasma, green top (PST), 1.0 mL	0d-3d: 290-775 U/L 4d-9d: 545-2000 U/L 10d-23m: 180-430 U/L 2y-11y: 110-295 U/L 12y-17y: 100-190 U/L >18 y: 105-210 U/L	Core Lab		2h	1h

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
LDL Cholesterol, calculated Lipid	Plasma, green top (PST), 3.0 mL	Children <18 y, Desirable: <110 mg/dL Borderline high: 110-129 mg/dL High: >130 mg/dL Adult: Optimal: <100 mg/dL Near or above optimal: 100-129 mg/dL Borderline high: 130-159 mg/dL High: 160-189 mg/dL Very High: >190 mg/dL	Core Lab			
Lead, blood	Whole blood (royal blue tube with Na2 EDTA), 0.6 mL, or Tan EDTA	Interpretation provided with report	Reference Lab (ARUP)		3 days	
Legionella culture	Sputum, transtrach, lung tissues, fluid and bronchial washings, sterile container. Direct FA stain will be performed at the same time.	No Legionella isolated	Microbiology			
Legionella IgG Antibody	Serum (red top), 1.5 mL	<1:128 - Negative - No Significant level of Legionella pneumophila Type 1, IgG Antibody detected 1:128 - Equivocol >/= 1:256 - Positive - Presence of Legionella pneumophile Type I detected.	Reference Lab (ARUP)		5 days	
Legionella IgM Titer (includes L pneumophilia 1,3,4,5,6,8 and Legionella species)	Serum (red top), 2.0 mL	<1:256, Antibody not detected	Reference Lab (ARUP)			
Legionella pneumoohila DNA by PCR	Sputum, 1.0 mL	Not detected	Microbiology (Specialty)			
Legionella Urinary Antigen	Urine, 5.0 mL	Negative	Microbiology			
Leiden Mutation	Whole blood (yellow top or purple top), 3.0 mL		Immunomolecular Pathology			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Leishmaniasis titer	Serum (red top), 2.0 mL	<1:16, Antibody not detected	Reference Lab (Parasitic Disease Consultants)			
Leptospira Antibody	Serum (red top), 1.5 mL	<1:50 - Negative 1:50 - Equivocal >/=1:100 - Positive	Reference Lab (ARUP)			
Leukemia cell line typing	Whole Blood (yellow top), 5.0 mL or Bone Marrow (yellow top), 1.0 mL		Immunomolecular Pathology			
Leukocyte Alkaline Phosphatase	Whole blood (green top), 10 mL; must be fresh.	Female: 33 - 149 male: 22 - 124 (no units)	Reference Laboratory			
Lidocaine	5 mL red top - serum 1 mL	Therap.: 1.2-5.0 µg/mL Toxic: >9.0 µg/mL	Reference Lab (ARUP)		3 days	
Lipase	Plasma, green top (PST), 0.5 mL	21-53 U/L	Core Lab		2h	1h
Lipase, Fluid	Fluid, 0.5 mL	Not available	Core Lab			
Lipid profile	Plasma, green top (PST), 0.5 mL	See individual tests.	Core Lab	Contains the following tests: Cholesterol, total HDL-Cholesterol LDL-Cholesterol, calculated Triglycerides Chol/HDL ratio	2h	1h
Lipoprotein Profile	Serum (red top), 3.0 mL, fasting	with report	Reference Lab (Mayo)			
Lithium	Serum (red top), 0.5 mL.	Negative Therap: 0.6-1.2 mmol/L Toxic: >1.5 mmol/L	Core Lab	Collect sample 12 h after last dose.	2h	1h
Liver/Kidney Microsomal Antibody, IgG	Serum (red top), 1.0 mL	<1:20	Reference Lab (ARUP)		5 days	

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Long-chain Fatty Acid(includes Phytanic Acid)	Plasma and cells (purple top), 7.0 mL	Given with report	Reference Lab (Kennedy Inst.)			
Low Molecular Weight Heparin	Citrated Plasma, (blue top, Must be full). Do not draw from Hickman, Arterial line or with ABG's.	All ages: none	Core Lab	Therapeutic level for venous thromboembollism 0.5 to 1.1 anti-Xa units per mL at 3-5 hr after injection.		Not available
Lupus Anticoagulant	Citrated plasma (blue top, must be full). Do not draw from Hickman, arterial line, or with ABG's.	All ages: Negative	Core Lab			Not available
Lupus Anticoagulant Ratio	Citrated plasma (blue top, must be full). Do not draw from Hickman, arterial line, or with ABG's.	<1.20 U/mL	Core Lab			Not available
Luteinizing hormone	Serum (red top), 2.0 mL	Males: Females: 1d-1.5 y: ND-4.1 mIU/mL ND-2.3 mIU/mL 6-9 y: ND-3.8 mIU/mL ND-1.3 mIU/mL Tanner Stages: Males: Females: 1y: 1.6-4.8 mIU/mL 0.7-2 mIU/mL 2-3y: 0.7-1.2 mIU/mL 0.4-11 mIU/mL 4y: 0.5-4.7 mIU/mL 0.9-13 mIU/mL 5y: 0.7-10.6 mIU/mL 1.1-19 mIU/mL 18 y up: 1.0 - 8.65 mIU/mL Follicular: 0.6-11.6 mIU/mL Midcycle: 17-77 mIU/mL Luteal: ND-14.7 mIU/mL Postmenopause: 11.3-40 mIU/mL Oral Contraceptives: ND-8 mIU/mL	Immunochemistry			
Lyme (Borrelia burgdorteri) DNA by PCR	CSF, Plasma from whole blood collected in EDTA, serum from clotted blood, skin pauch biopsy	Negative	Microbiology (ARUP)			
Lyme Disease Antibody(IgG & IgM)	Serum (red top), 2.0 mL	By report	Reference Lab (Specialty)			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Lyme Disease Antibody, CSF (IgG & IgM)	CSF, 0.5 mL	Negative	Reference Lab (Specialty)			
Lymph Node Cell Marker Screen	Lymph node, tissue, FNA, Fluid		Immunomolecular Pathology			
Lymphocyte Mitogen Proliferation	Whole blood (yellow top), 7.0 mL	By report	Reference Lab (Specialty)			
Lymphocytic choriomeningitis Antibody	Serum (SST), 2.0 mL	No antibody detected.	Reference Lab (ARUP)			
Lymphocytotoxic antibody screen.	Serum (red top), 1.0 mL		Immunomolecular Pathology			
Lymphocytotoxic crossmatch for cadaver transplant.	Patient: Serum (red top), 1.0 mL STAT		Immunomolecular Pathology			4-6 hr
Lymphocytotoxic crossmatch for living related transplant.	Patient: Serum (red top), 10.0 mL Donor: Whole Blood (yellow top), 20.0 mL		Immunomolecular Pathology			
Lymphogranuloma Venereum Antibody	Serum (red top), 2.0 mL	By report	Reference Lab (Focus)			
Lysozyme, serum	Serum (red top), 1.5 mL	9-17 µg/mL	Reference Lab (ARUP)		3-5 days	
Lysozyme, urine	Random urine (>1 mL)	<4 µg/mL	Reference Lab (ARUP)		3-5 days	
Magnesium	Plasma, green top (PST), 1.0 mL Avoid hemolysis.	0-4m: 1.5-2.2 mg/dL 5m-5y: 1.7-2.3 mg/dL 6-11y: 1.7-2.1 mg/dL 12-17y: 1.7-2.2 mg/dL 18-59y 1.8-2.4 mg/dL >59 y: 1.6-2.4 mg/dL	Core Lab	Magnesiums may be higher in females during menses.	2h	1h
Magnesium, 24 h urine	Urine, 24h, collect in metal free container. Obtain urine container from Lab Central, HA619.	70-120 mg/d	Core Lab			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Magnesium, Urine random	Random urine, 1.0 mL	Not available	Core Lab			
Malaria Preparation	Whole blood (purple top), 1.0 mL	No parasites present	Core Lab			Not available.
Maternal Serum Screening Alpha-fetoprotein profile (pregnancy)	Serum (red top), 3.0 mL	By report	Immunochemistry	Includes AFP, hCG, Estriol		
MBC	Contact supervisor, 3-5411.	Individual interpretation	Microbiology			
Measles virus isolation	Contact Virology Lab, 3-5411.	No virus isolated	Microbiology (ViroMed)			
Metanephrines	Urine, 24 h; refrigerate during collection, collect with HCl, 6 mol/L. Obtain container from Lab Central HA619. (5.0 mL)	Normetanephrines: 50-650 µg/d Metanephrines: 30-350 µg/d	Reference Lab (ARUP)			
Methemoglobin, quanitative	Whole blood Gas-Lyte syringe or green top. Place on ice and deliver to lab immediately.	<1.5% of total Hgb	Core Lab			15 minutes
Methotrexate	Plasma, green top (PST), 2.0 mL	Therap.: Variable Toxic: 1-2 wk, low dose: >0.02 µmol/L 24 h, high dose: >5 µmol/L 48 h, high dose: >0.5 µmol/L 72 h, high dose: >0.05 µmol/L	TDM			
Methsuximide, quanitative	Serum (red top), 2.5 mL, plasma for EDTA and heparin also acceptable.	Methsuximide Therap: <1 µg/mL Normethsuximide Therap: 10-40 µg/mL Total (Methsuximide + Normethsuximide: 10-40 µg/mL Toxic: >60 µg/mL	Reference Lab (ARUP)		3 days	N/A
Metyrapone Stimulation Test	Serum (SST); draw at 8 AM following midnight dose.	Cortisol: <3 µg/dL	Immunochemistry	Overnight dexamethasone suppression,single dose test dose: 30 mg/kg orally at midnight with snack.		

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Metyrapone Stimulation Test (standard oral test)	Serum (SST), 3.0 mL	Cortisol: <3 µg/dL 11- Deoxycortisol: >5 µg/dL	Reference Lab (ARUP)	adult dose:750 mg q 4 h x 6: not performed in primary adrenal insufficiency		
Metyrapone Stimulation Test (standard oral test), urine	Urine, 24 h: Collect with boric acid. Obtain container from Lab Central, HA619.	17-KGS: 2.5 to 3 fold rise, but at least 10 mg/d 17-KS: >2 times base level 17-OHCS: 2 to 4 times base level.	Reference Lab (ARUP)	Adult dose:750 mg q 4 h x 6: not performed in primary adrenal insufficiency		
Metyrapone Stimulation Test, Single dose test dose: 30 mg/kg orally at midnight with snack	Serum (SST); draw at 8 AM following morning.	11-Deoxycortisol: >5 µg/dL	Reference Lab (ARUP)			
MIC (Minimum inhibitory concentration)	Contact supervisor, 3-5411.	Individual interpretation	Microbiology			
MIC (Minimum inhibitory concentration) on yeast MIC tube dilution	Physician must make prior arrangement with Supervisor, 3-5411.	Variable, depending on yeast and drug	Microbiology			
Mixing Study	Citrated plasma (5.0 mL blue top, must be full). Do not draw from Hickman, arterial line or with ABG's.		Core Lab			
Monospot	Serum (SST) 1.0 mL	Negative	Immunochemistry	Routine test for mononucleosis		
MRSA Screen	Submit in sterile container.	No MRSA isolated	Microbiology			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Multiple sclerosis panel	CSF, 1.5 mL, and Serum (red top), 1.5mL; deliver to lab immediately.	Components Immunoglobin G, serum 0-30 days - 611-1542 mg/dL 1 mo - 241-870 mg/dL 2 mo - 198-577 mg/dL 3 mo - 169-588 mg/dL 4 mo - 188-536 mg/dL 5 mo - 165-781 mg/dL 6 mo - 206-676 mg/dL 7-8 mo - 208-868 mg/dL 9-11 mo - 282-1026 mg/dL 1 yr - 331-1164 mg/dL 2 yr - 407-1009 mg/dL 3 yr - 423-1090 mg/dL 4 yr - 444-1187 mg/dL 5-7 yr - 608-1229 mg/dL 8-9 yr - 585-1509 mg/dL 10 yr and older 768-1632 mg/dL Immunoglobin G, CSF 0-6 mg/dL Albumin, Serum by Nephelometry 3500-5200 mg/dL Albumin, CSF 0-35 mg/dL Albumin Index 0.0-9.0 CSF IgG Synthesis Rate 0.0-8.0 mg/d IgG Index 0.28-0.66 CSF IgG/Albumin Rate 0.09-0.25 CSF Oligoclonal Bands Negative Myelin Basic Protein 0.07-4.10 ng/mL Interpretation By report	Reference Lab (ARUP)	Includes: -Oligoclonal Bands, Myelin Basic Protein, and IgG Synthesis Rate and Index -Avoid hemolysis -Serum sample should be drawn within 48 hrs of CSF collection	5 days	N/A

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Mumps Antibody (IgG)	Serum (red top), 2.0 mL Label acute or convalescent	Less than or equal to 0.90 IV: Negative-No significant level of detectable mumps virus antibody. 0.91-1.09 IV: Equivocal-Repeat testing in 10-14 days may be helpful Greater than or equal to 1.10 IV: Positive-IgG antibody detected may indicate a current or previous virus. Positive IgG Ab levels in the absence current clinical symptoms may indicate immunity. In the absence of current clinical symptoms may indicate immunity	Reference Lab (ARUP)		3 days	N/A
Mumps Antibody (IgM)		Less than or equal to 0.90 IV: Negative-No significant level of detectable mumps virus antibody. 0.91-1.09 IV: Equivocal-Repeat testing in 10-14 days may be helpful Greater than or equal to 1.10 IV: Positive-Presence of IgM ab detected, which may indicate a current or recent infection.	Reference Lab (ARUP)		3 days	N/A
Mumps virus isolation	Contact Virology Lab, 3-5411.	No virus isolated	Microbiology (Viromed)			
Mycobacterium tuberculosis (Mtb) complex DNA by PCR	CSF, Urine, Stool, Whole blood in EDTA, Tissue	Not detected	Microbiology (Specialty)			
Mycobacterium tuberulosis (Mtb) rRNA Detection by TMA	Respiratory specimens only (sputum, Bronch.washes, BAL, or Tracheal Aspriates)	Negative	Microbiology (ARUP)			
Mycology culture; mycological evaluation, definitive	Collect in sterile screwcapped containers. Contact lab for further instructions, 3-5411.	Individual interpretation	Microbiology			
Mycoplasma pneumoniae (Eaton Agent) Titer	Serum (SST), 2.0 mL	Negative	Reference Lab (VA)			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Mycoplasma pneumoniae culture	Respiratory specimen, otherwise consult Virology, 3-5411.	No mycoplasma pneumoniae isolated.	Microbiology (ARUP)			
Mycoplasma pneumoniae DNA by PCR	Respiratory specimen, Throat swab	Negative	Microbiology (ARUP)			
Myoglobin	Serum (red top), 1.0 mL	0-116 ng/mL	Reference Lab (ARUP)			
Myoglobin, Urine random	Urine, random, 5.0 mL, freshly voided	Normal - < 100 ng/mL Increased Risk for acute renal failure - > 20,000 ng/mL	Special Chemistry	Specimen should be freshly voided		
Myotonic Dystrophy by DNA Analysis	Whole blood (purple or yellow top), 2.0 mL	with report	Reference Lab (Baylor)			
Narcolepsy Screen	Whole blood (yellow top), 5.0 mL		Immunomolecular Pathology			
NATP Panel	40 mL purple on maternal parent. 1 red top tube on maternal parent. 40 mL purple on fraternal parent.	with report	Reference Lab (BCSEW)			
Neogen Screening	Filter paper; obtain from lab, 7-1550	Negative screening test for cystic fibrosis, Duchenne/Becker muscular dystrophy, galactosemia, biotinidase, arginase, adenosine deaminase MCAD and G-6-PDH deficiencies, congenital hyperplasia, maple syrup urine disease, homocystinuria, citrullenemia, pyroglutamic, aciduria, methylmalonic, propionic, isovaleric and glutaric acidemias.	Reference Lab (Neogen)			
Neuron-specific Enolase	Serum (red top), 5.0 mL; deliver to lab immediately.	By report	Reference Lab (Specialty)			
Neutrophil Antibody	Serum (red top), 1.5 mL	Negative	Reference Lab (ARUP)			
Newborn thyroid screen	Capillary blood collected on filter paper.	Newborn, T4: 6.7-22.0 µg/dL or within 2 SD from daily mean TSH: <25 µU/mL	Reference Lab(KY State Health Dept.)	List components		

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Nortriptyline	Serum (SST), 3.0 mL - plasma from EDTA or heparin is also acceptable.	Therapeutic: 50-150 ng/mL Toxic: >500 ng/mL	Reference Lab (ARUP)		3 day	N/A
N-telopeptide Collagen crosslinks, serum	Serum: 1.5 mL red top, plain	Adult male: 5.4 - 24.2 nM BCE Postmenopausal, adult Female: 6.2-19 nM BCE	Reference Lab (ARUP)			
N-telopeptide Collagen crosslinks, urine	Second morning void or 24 h urine, no preservative, 0.6 mL	Normal Adult female: premenopausal, 17-94 nM BCE/mM creatinine postmenopausal, 26-124 nM BCE/mM creatinine Adult male: 21-83 nM BCE/mM creatinine	Reference Lab (ARUP)	Collect without preservative; refrigerate during 24 hr collection		
Nutrition Protein Panel	Serum (red top), 2.0 mL	See individual tests: Albumin, Prealbumin, Retinol-Binding Protein, Transferrin.	Core Lab			
Occult Blood	Approx. 1 gram stool	Negative	Microbiology			
OHCS	Urine 24 h, for 6 d; Collected with boric acid. (Days 1 and 2 are baseline measurements.)	17-OHCS: suppression on day 4 to <4.5 mg/d or <50% of baseline.	Reference Lab (ARUP)			
OKT3 Antibodies	Serum (red top), 3.0 mL	Negative	Reference Lab (Oregon Health Sciences)			
OKT3/ATG monitoring panel	Whole Blood (yellow top), 2.0 mL A hemogram must be ordered (purple top) < mL		Immunomolecular Pathology			
Oligoclonal bands	CSF (1.5 mL) and Serum (red top), 1.5 mL	0d up: Negative	Reference Lab (ARUP)	CSF and Serum specimens need to be assayed together for interpretation	5 day	N/A
Organic acids, screen, urine	Urine, random; collect during acute episode; Minimum volume urine: 5 mL. Deliver to lab immediately or freeze the specimen.	Professional interpretation given with report. Patient's medical history submitted with specimen is essential for proper interpretation.	Reference Lab (Baylor)			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Osmolality	Plasma, green top (PST), 0.5 mL	0-9d: 266-298 mOsm/kg 10d-59y: 275-295 mOsm/kg >59y: 280-301 mOsm/kg	Core Lab		2h	1h
Osmolality, Urine 24 h	Urine, 24h	>12y 300-900 mOsm/kg	Core Lab		2h	1h
Osmolality, Urine random	Urine, random, 1.0 mL	50-1200 mOsm/kg, depending on fluid intake. Average fluid intake: 300-900mOsm/kg After 12 h fluid restriction: >850 mOsm/kg Adult: 300-900 mOsm/kg	Core Lab		2h	1h
Ova, parasites, cysts	Collect at least 2 g feces and submit to lab within 2 h of collection. Contact lab for further instructions, 3-5411.	No ova, parasites, cysts	Microbiology			
OXALATE, PLASMA	Plasma, green top heparin tubes, minimum of 5 mL from a fasting patient (12 hours). Place the specimen on wet ice immediately and transport to the laboratory.	<1.8 umol/L	Reference laboratory (MAYO)	Patient should avoid taking vitamin C supplements for 24 hours prior to draw. Non-heparinized specimens will not be accepted.	3-5 days	
Oxalate, Urine	Urine, 24 h; collect with HCl, 6 mol/L. Obtain container from Lab Central, HA619.	0-12 y: 13-38 mg/d Adult, M: 7-44 mg/d F: 4-31 mg/d	Reference Lab (ARUP)	Vitamin C quickly degrades to oxalate in nonacified urine; patients should consider refraining from vitamin C suppliments during and 48 hrs prior to urine collection of oxalate.	3 day	N/A
Oxygen, partial pressure	Whole blood, arterial (Hep.Syringe); place on ice and send to lab immediately.	X ref to blood gases	Core Lab			
P-24 Antigen, HIV-1	Serum (SST), 3.0 mL	None detected. Positive called only to attending physician.	Microbiology			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Pancreatic Polypeptide	(purple top) on ice, 20 mL	20-29 y: 26-158 pg/mL 30-39 y: 55-284 pg/mL 40-49 y: 64-243 pg/mL >50 y: 51-326 pg/mL	Reference Lab (Quest)			
Parainfluenza, 1,2,3 Antibody	Serum (red top), 1.0 mL Label Acute or Convelescent	<1:8, No antibody detected	Reference Lab (ARUP)			
Parasitic titers	See individual tests.			Includes: Amebiasis; Trichinosis, Echinococcosis; Filariasis; Schistosomiasis; Cysticerosis; Leishmaniasis; Viscereal Larva migrans ((Ascaris and Toxocara); Chagas disease; strongyloides;Toxoplasmosis		
Parathyroid hormone (includes Ionized Calcium)		CAP PTH - 5.0-39 pg/mL Ionized Calcium - 0d-1d 4.3-5.1 mg/dL 1d-7d 4.0-4.7 mg/dL 7d-18yr 4.6-5.1 mg/dL 18yr-90yr 4.6-5.1 mg/dL >90yr 4.5-5.3 mg/dL	Scantibodies	CAP PTH is cyclase activating PTH, the bio-active form of PTH(1-84). PTH in association with ionized calcium is useful for the evaluation of primary hypo or hyperparathyroidism.	5-7 d	
Parathyroid hormone Profile (includes ionized Calcium)	PTH 5 mL purple top (EDTA) tube; ionized CA green top Send to lab immediately.	Total PTH - 14.0 - 66.0 pg/mL CIP Valve - 2.5-29.0 pg/mL CAP PTH - 5.0-39.0 pg/mL CAP/CIP - 1.1-6.9 pg/mL	Scantibodies	CAPPTH - cyclase activating PTH, the bioactive form of PTH (1-84) CIP PTH - cyclase inactive PTH (calculated) Total Intact PTH = CAPPTH + CIPPTH PTH profile is useful for evaluation of secondary hyperparathyroidism in ESRD.	5-7 d	
Parathyroid Hormone-related Protein	Pre-chilled EDTA (purple), 3.0 mL Place on ice and send to lab immediately.	<2.0 pmol/L	Reference Lab (MAYO)			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Parvovirus B19 Antibodies, IgG		Neg < 0.9 I.V. - No significant level of detectable Parvovirus B 19,IgG antibody 0.9 I.V. - Equivocal - Repeat testing in 10-14 days > 1.10 I.V. - IgG Antibody to Parvovirus B19 detected, which may indicate current or previous infection	Reference Lab (ARUP)			
Parvovirus B19 Antibody, IgM		Neg < 0.9 I.V. - No significant level of detectable Parvovirus B19 IgM antibody 0.9-1.1 I.V. - Equivocal - Repeat testing in 10-14 days >1.1 I.V. - IgM antibody to Parovovirus B19 detected, which may indicate a current or recent infection.	Reference Lab (ARUP)			
Parvovirus B19 by PCR	Whole blood collected in EDTA, serum, 5.0 mL. Amniotic fluid, Synovial fluid, tissue. NOTE: THIS TEST IS FOR RESEARCH USE ONLY. CSF TESTING IS NOT AVAILABLE	Negative	Microbiology (ARUP)			
Pentobarbital, quanitative	Serum (red top), 2.0 mL	Therap: 1-5 µg/mL Toxic: >10 µg/mL Therap. Coma: 20-50 µg/mL	Toxicology			
pH (37 C)	Whole blood, arterial (Hep. Syringe), 0.5 mL place on ice and deliver to lab immediately.	Cross reference to blood gases	Core Lab			15 minutes
Phenobarbital, quanitative	Plasma, green top (PST), 1.0 mL	Therapeutic: 15-40 µg/mL Toxic: >45 µg/mL Slowness, ataxia, nystagmus: 35-80 µg/mL Coma with reflexes: >65 µg/mL Coma without reflexes: >100 µg/mL	TDM			
Phenobarital, saliva		Therapeutic: 5 - 15 µg/mL Toxic: > 18 µg/mL	TDM	Eating or drinking should be avoided 15 minutes prior to sampling	8 hr	NA
Phenylalanine	Whole blood spotted on filter paper. Contact Carol Reid, 3-5463.	<2 mg/dL	Pediatric Endocrine, Metab. MN477			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Phenytoin, Free	Plasma, green top (PST), 3.0 mL	Therap: 0.8-1.6 µg/mL Toxic: >1.6 µg/mL	TDM			
Phenytoin, quanitative	Plasma, green top, 1.0 mL (Do not collect in Plasma Separator Tube).	Therapeutic: 10.0-20.0 µg/mL Toxic: >22.0 µg/mL lateral nystagmus: > 20 µg/mL Nystagmus at 45 lateral gaze; ataxia: > 30 µg/mL Depressed mental capacity: > 40 µg/mL	TDM			
Phenytoin, saliva		Therapeutic: 1.0 - 2.0 µg/mL Toxic: >2.2 µg/mL	TDM	Eating or drinking should be avoided 15 minutes prior to sampling.	8 hr	NA
Phosphorus, Fluid	Fluid, 0.5 mL	Not available	Core Lab		2h	1h
Phosphorus, inorganic	Plasma, green top (PST), 0.5 mL	M F 1-30d 3.9-6.9 4.3-7.7 mg/dL 31-364d 3.5-6.6 3.7-6.5 mg/dL 1-3y 3.1-6.0 3.4-6.0 mg/dL 4-6y 3.3-5.6 3.2-5.5 mg/dL 7-9y 3.0-5.4 3.1-5.5 mg/dL 10-12y 3.2-5.7 3.3-5.3 mg/dL 13-15y 2.9-5.1 2.8-4.8 mg/dL 16-18y 2.7-4.9 2.5-4.8 mg/dL >18y 2.6-4.4 2.7-4.8 mg/dL	Core Lab		2h	1h
Phosphorus, Urine, 24h	Urine, 24h, no preservative	Adult: 0.4-1.3 g/d (varies with diet)	Core Lab			
Pinworm, preparation	Scotch tape method	Negative	Microbiology			
Plasminogen	Collect one 5.0 mL (light blue top)sodium citrate tube; collect on ice	70 - 113%	Reference Laboratory (ARUP)		3 d	N/A
Platelet aggregation	Special collection by phlebotomist. Must be scheduled with lab, 7-1377.	Normal aggregation with ADP, Epinephrine, Collagen, Ristocetin, Arachidonic acid	Core Lab			
Platelet antibody identification, level 1	Serum (red top), 10.0 mL	with report	Reference Lab (BCSEW)			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Platelet Associated Antibodies (IgG, IgM, and IgA)	Whole blood (yellow top), 7 mL; 10 mL if platelet count < 500 Call Special Chem. 7-1550	<1.5 relative fluorescent units	Reference Lab (Focus)	Pre Approval required, Dr. Dickson, Beeper 1668 Do not collect Friday evening through Sunday evening. Specimen be received by performing Laboratory within 48 hrs of collection		
Platelet Count	Whole blood (purple top) May be collected by finger stick in microtainer tubes.	150,000-400,000 / µL	Core Lab			
Platelet Function Analysis	Whole blood (2 - 3 mL blue tops. Both must be full). Deliver to Lab. NO ICE	EPI: <175 ADP: <105	Core Lab			
Pneumococcal IgG Antibodies (Pneumococcal vaccine response)	Serum (red top), 3.0 mL; includes serotypes: 3, 7F, 9N	< 2 nonresponder weak responder 2-4 responder >4 good	Reference Lab (ARUP)			
PNH by flow cytometry	Whole Blood (yellow top), 5.0 mL		Immunomolecular Pathology			
Poliomyelitis titers (Includes Poliovirus types 1,2 and 3)	Serum (red top), 0.5 mL. Contact lab for further instructions, 7-3516.	<1:10, No antibody detected	Reference Lab (ARUP)			
Porcine VIII Inhibitors	Citrated plasma (5.0 mL blue top, must be full); deliver specimen on ice. Do not draw from Hickman, arterial line, or with ABG's.	All ages: None	Core Lab			
Porphobilinogen Deaminase, erythrocyte	Whole blood (purple top), 3.0 mL	Adult: 2.10-4.30 mU/gHgb	Reference Lab (ARUP)			
Porphobilinogen, qualitative	Random urine, 1.0 mL. Protect from light.	Negative	Toxicology			
Porphyrin screen, Blood	Whole blood (green top), 5.0 mL	Negative	Toxicology			
Porphyrin screen, feces	Feces (3 g); protect from light. Deliver to lab immediately.	Negative	Toxicology			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Porphyrin screen, Urine	Urine, random; protect from light	Negative	Toxicology			
Porphyrins, feces fractionation	Feces, 24 h; obtain container from Spec. Chem. Refrigerate during collection.	With report	Reference Lab (Mayo)			
Porphyrins, serum, total	Serum (red top), 3.0 mL. Protect from light.	0-15 nmol/L	Reference Lab (ARUP)			
Porphyrins, urine fractionation	Urine, 24h; refrigerate during collection.	By report	Reference Lab (ARUP)			
Potassium	Plasma, green top (PST); Avoid hemolysis. 0.5 mL Whole blood Gas-lyte syringe on ice.	0-9d: 3.7-5.9 mmol/L 10d-23m: 4.1-5.3 mmol/L 2y-11y: 3.4-4.7 mmol/L 12-59y: 3.6-4.9 mmol/L 60-89y: 3.9-5.3 mmol/L >89y: 3.6-5.5 mmol/L	Core Lab		2h	1h
Potassium, Urine 24 h	Urine, 24 h, no preservative	6-10 y: M: 17-54 mmol/d F: 8-37 mmol/d 10-14 y: M: 22-57 mmol/d F: 18-58 mmol/d Adult: 25-125 mmol/d Varies with diet.	Core Lab			
Potassium, Urine random	Urine, random, 0.5 mL	Not available	Core Lab			
Prealbumin	Plasma, green top (PST) 1.0 mL	0-6m 7-39 mg/dL 7m-3y 2-36 mg/dL 4-6y 12-30 mg/dL 7-19y 12-42 mg/dL >19y 19-35 mg/dL	Core Lab		2h	1h
Precipitation Immunodiffusion, fungal antigen battery.	Serum (SST), 2.0 mL	Negative	Immunochemistry	Includes antigens to: Histoplasma capsulatum, Blastomyces dermatitidis, Coccidioides immitis, Aspergillus sp., (multi-isolates) Candida albicans on special request.		

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Pre-Eclampsia Panel	This panel includes urea nitrogen, creatinine, AST, total bilirubin, total protein, LDH and uric acid. Minimum specimen requirements: 3.0 mL in a green top plasma separator tube .		Core Lab			
Pregnancy Test, urine	Freshly voided urine, 1.0 mL (first morning specimen preferred).	Detects hCG level >20 mIU/mL	Core Lab			
Pregnanetriol	Urine, 24 h; collected in 25 mL of 50% acetic acid (15 mL for children). Obtain container from Lab Central, HA619.	Males, 0-5 yrs: <0.1 mg/24 hrs 6-9 yrs: <0.3 mg/24 hrs 10-15 yrs: 0.2-0.6 mg/24 hrs > or equal to 16 yrs: 0.2-2.0 mg/24 hrs Females: 0-5 yrs: <0.1 mg/24 hrs 6-9 yrs: <0.3 mg/24 hrs 10-15 yrs: 0.1-0.6 mg/24 hrs > or equal to 16 yrs: 0.0-1.4 mg/24 hrs	Reference Lab (MAYO)			
Primidone	Plasma, green top (PST), 1.0 mL; phenobarbital (metabolite) included.	Primidone, Therapeutic: 5.0-12.0 µg/mL Toxic: >15 µg/mL Phenobarbital, Therapeutic: 15-40 µg/mL Toxic: >50 µg/mL	Reference Lab (ARUP)		3 d	
Pro insulin		0-1 yr - Not established 2 yr and older 2.1 - 26.8 pmol/L	Reference Lab (ARUP)		7 day	
Procainamide, quanitative	Plasma, green top (PST), 1.0 mL;serum also acceptable NAPA (metabolite) included.	Procainamide, Therapeutic: 4.0-10 µg/mL Toxic: >12 µg/mL NAPA, Therapeutic: 6-20 µg/mL Toxic if sum of procainamide and NAPA >40 µg/mL	Reference Lab (ARUP)	Performed by Reference Laboratory (ARUP)	3 days	

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Progesterone	Serum (red top), 2.0 mL. Request should be completed with patients sex, LMP (last menstrual period) or trimester of pregnancy.	M, Adult: 0.12-0.6 ng/mL F, follicular: 0.2-0.9 ng/mL luteal: 3.0-30.0 ng/mL pregnancy, 1st tri: 15-50 ng/mL 3rd: 80-200 ng/mL Postmenopausal: ND-0.3 ng/mL Oral Contraceptives: 0.1-0.3 ng/mL	Reproductive Endocrinology			
Prolactin	Serum (SST), 1.0 mL	Males: Females: 1-7 d: 58-392 ng/mL 31-328 ng/mL 8-15 d: 45-254 ng/mL 54-326 ng/mL 1-3 y: 8-49 ng/mL 5-67 ng/mL 4-17 y: 3-18 ng/mL 3-26 ng/mL >18 y, 3-12 ng/mL 3-25 ng/mL	Immunochemistry			
Prostate Specific Antigen	Serum (SST), 1.0 mL	18 - 65 y: 0-2.5 ng/mL > 65 y: 0-4.0 ng/mL	Special Chemistry			
Prostatic acid phosphatase	Serum (red top), 1.5 mL	0.0-3.5 ng/mL	Reference Lab (ARUP)		3 d	
Protein C	Citrated plasma (blue top, must be full). Do not draw from Hickman, arterial line, or with ABG's.	<1 month 0.17-0.64 U/mL 1-5 months 0.21-0.81 U/mL >5 months 0.69-1.4 U/mL	Core Lab			Not available
Protein S	Citrated plasma (blue top, must be full). Do not draw from Hickman, arterial line, or with ABG's.	>5 month, Total: 70-140% 3-5 month, Total: 30-100% >5 month, Free: 70-130%	Core Lab			Not Available
Protein, total	Plasma, green top (SST), 0.5 mL	0-15d: 4.1 - 6.3 g/dL 16-364d: 4.4 - 7.9 g/dL 1-16y: 5.7 - 8.0 g/dL >17y: 6.2 - 7.8 g/dL (0.5 g higher in ambulatory patients)	Core Lab		2h	1h
Protein, total CSF	CSF, 0.5mL	0-9d 40-120 mg/dL 10-30d 20-90 mg/dL >30d 15-40 mg/dL	Core Lab		2h	1h
Protein, total, Fluid	Fluid, 0.5 mL	Not available	Core Lab			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Protein, total, Urine 24h	Urine, 24 h, no preservative. Do not collect in acid.	<80 mg/day if bed rest <150 mg/day if ambulatory	Core Lab		2h	1h
Protein, total, urine random	Urine, random, 0.5 mL	No reference ranges available.	Core Lab		2h	1h
Prothrombin Mutation	Whole blood (yellow top or purple top), 3.0 mL		Immunomolecular Pathology	This test is multiplexed with Factor V Leiden Gene Mutation		
Prothrombin time	Citrated plasma (blue top, must be full). Do not draw from Hickman, arterial line, or with ABG's.	Neonate: <16.0 sec. 1 m and over: 10.7-13.4 sec.	Core Lab	Includes INR		
Protoporphyrins, erythrocyte free (EP)	Whole blood (purple top), 1.5 mL.	0-6 y: 0-35 µg/dL >6 y: 0-60 µg/dL	Reference Lab (ARUP)		5 d	
PT, Prothrombin Time,	Citrated plasma (blue top, must be full). Do not draw from Hickman, arterial line, or with ABG's.	0-4 weeks <16.0 sec >4 weeks <12.3 sec	Core Lab	Includes INR		1 hour
PTT, Activated Partial Thromboplastin Time	Blue top tube. Fill completely. Do not draw from Hickman, arterial line or with ABG.	>4wk <29 seconds	Core Lab		2h	1h
Pyridinium Collagen Cross-Links	Random urine, first morning void preferred, 0.5 mL	Pyridinoline, M: 10.3-20.0 nm/mm F: 15.3-33.6 nm/mm	Reference Lab (ARUP)			
Pyruvate Kinase, quanitative	Whole blood, (purple top), 1.0 mL	9.0-22.0 U/g Hgb	Reference Lab (ARUP)			
Pyruvic acid, (CSF)	CSF, collect in chilled collection tube, 1.0 mL	0.06-0.19 mmol/L	Reference Lab (ARUP)			
Pyruvic acid, (Whole blood)	Whole blood (green top), 2.0 mL; Collect fasting specimen in chilled tube. Deliver to lab on ice immediately.	0.03-0.08 mmol/L	Reference Lab (ARUP)			
Q fever Antibodies (includes Phase I and II antibodies)	Serum (red top), 1.5 mL	Phase 1: <1:16 No antibody detected Phase 2: <1:16, No antibody detected	Reference Lab (ARUP)		5 d	N/A

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Quinidine, quantitative	Serum, plain red top (PST), 2.0 mL	Therapeutic: 1.5-4.5 µg/mL Toxic: >10 µg/mL	Reference Lab (ARUP)			
Rabies Antibodies	Serum (red top), 2.0 mL	By Report	Reference Lab (ARUP)		10 days	
Rapid Antibody Screen	Serum (red top), 1.0 mL		Immunomolecular Pathology			
RBC Cholinesterase	Whole blood (2 purple Tops), 6.0 mL total (2 mL minimum)	25-52 U/g Hgb	Reference Lab (ARUP)		3 days	
RBC Indices	Order as Hemogram (HEM)	MCH 0-6d 32-39 pg >6d 27-34 pg MCHC 32.2-36.5% MCV <7d 96-115 fL 1-7wk 84-115 fL 2-23m 70-88 fL 2-9y 76-90 fL 10-17y 78-100 fL >17y 79-98 fL	Core Lab	Included in Hemogram	2h	1h
RBC, Red Blood Cell Count	Whole blood (purple top), 1.0 uL or Microtainer	<7d 4.1-6.7 M/µL 1-7wk 2.8-5.4 M/µL 2-23m 3.6-5.4 M/µL 2-9y 4.0-5.3 M/µL 10-17y 4.1-5.6 M/µL >17y M 4.5-5.8 M/µL F 4.0-5.2 M/µL	Core Lab		2h	1h
Reducing Substances, Feces	See Stool, reducing substances and pH.	Negative	Microbiology			
Reducing Substances, Urine	Urine, 1 mL	Negative	Core Lab	Automatically reported on UA's on children < 1 year		
Renin, plasma	Plasma (purple top), 2.0 mL. Place on ice and deliver to lab immediately.	with report	Reference Lab (ARUP)			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Reovirus Antibody	Serum (red top), 2.0 mL	<1:8, No antibody detected	Reference Lab (ARUP)			
Respiratory Syncytial Virus By EIA	Nasophryngel Suction specimen.	Negative	Microbiology			
Respiratory Syncytial Virus detrmination (rapid) (FA test)	Nasopharyngeal Suction Specimen must be received by 10 AM.	Negative	Microbiology			
Respiratory Syncytial Virus Isolation	Available 7-10 AM; suction recommended.	No virus isolated	Microbiology			
Respiratory Syncytial Virus Antibody Titer	Serum (red top), 1.5 mL	<1:8, No antibody detected	Reference Lab (ARUP)			
Reticulocyte Count	Whole blood (purple top), 1.0 mL	Absolute Counts 20-130 k/µL %Reticulocytes 0.5-2.5% Note: Normal may be higher in newborns (2-6%) but usually returns to normal in 1-2 weeks.	Core Lab		24h	Not offered as STAT.
Retinol binding protein	Serum (SST), 2.0 mL	3.0-6.0 mg/dL	Reference Lab (ARUP)			
Reverse T3	Serum (red top), 1.0 mL	0-7 d: 600-2,500 pg/mL > or equal to 7d: 90-350 pg/mL	Reference Lab (ARUP)			
Rh and ABO typing, blood	Clotted blood (red top), 10 mL. Infant, 1 Bullet tube or 3.0 mL red top		Blood Bank			
Rh typing, amniotic fluid	Amniotic fluid, 5 mL	Given with report	Reference Lab (ARUP)			
Rheumatoid factor	Plasma, green top (PST) 0.5 mL	<20 IU/mL	Core Lab		2h	1h
Riboflavin	Whole blood (purple top), 2.0 mL	By report	Reference Lab (ARUP)		10 days	

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Rickettsial Agglutinins Battery (Proteus OX2, OX19, OXK)	Serum (SST), 2.0 mL	By report	Reference Lab (ARUP)			
RNP, anti-RNP	Serum, 2 mL red top tube.	<20 EU/mL	Core Lab	Ordered as ENA I		Not available
Rochalimaea Antibodies	Serum (red top), 3.0 mL. Clinical history required.	B. henselae, R. quintana, <1:64 neg	Reference Lab (CDC)			
Rochalimaea Isolation	Contact suppervisor for instructions, 3-5411.	No Rochalimaea isolated	Microbiology			
Rocky Mountain spotted fever (IgG)	Serum (red top), 2.0 mL	<0.9 IV: No antibodies detected 0.9-1.1 IV: Equivocal >1.1 IV: Positive	Reference Lab (ARUP)			
Rocky Mountain spotted fever (IgM)	Serum (red top), 2.0 mL	Negative: < 0.9 IV Equivocal: 0.9-1.1 IV Positive: >1.1 IV	Reference Lab (ARUP)		5 days	
Rotavirus Antigen	Fresh stool (no swabs)	Non-reactive	Microbiology			
Routine culture	Submit in sterile container within 30 min.	Not applicable	Microbiology			
RPR	Serum (SST), 1.0 mL. Reactive specimens will be titered and confirmatory test (TPPA) performed.	Non-reactive	Immunochemistry			
Rubella IgG antibodies	Serum (SST), 2.0 mL. Immune status: 1 specimen. Diagnostic: acute and convalescent specimens.	Positive	Toxicology			
Rubella IgM (Rubazyme)	Serum (SST), 2.0 mL	Negative: < 0.9 IV Equivocal: 0.9-1.09 IV Positive: >1.09 IV	Reference Lab (ARUP)		3 days	
Rubeola IgG Antibody	Serum (SST), 2.0 mL	<0.90 IV: Negative 0.90-1.09 IV: Equivocal >1.09 IV: Positive	Reference Lab (ARUP)			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Rubeola IgM Antibody	Serum (red top), 2.0 mL	<0.90 IV: No antibodies detected 0.9-1.10 IV: Equivocal >1.10 IV: Positive	Reference Lab (ARUP)			
Salicylate, quanitative	Plasma, green top (PST), 2.0 mL	Therapeutic: 2--25 mg/dL Toxic: >30 mg/dL	Toxicology			
Schistosomiasis titer	Serum (red top), 1.0 mL	By report	Reference Lab (ARUP)			
Schlichter (serum cidal level)	Contact supervisor, 3-5411. Collect 10 mL whole blood in sterile tube for peak and trough levels. Indicate level. Need Infectious Disease consult.	Individual interpretation	Microbiology			
SCL 70	Serum, red top tube	0-20 EU/mL	Core Lab			Not available
Sed Rate, Sedimentation Rate	Whole blood (purple top), 2 mL	F: 0-20 mm/hour M: 0-10 mm/hour	Core Lab	Specimen is only stable for up to 2 hours	2h	Not offered as STAT procedure
Serotonin	Serum (red top), 2.0 mL. Deliver on ice immediately.	50-220 ng/mL	Reference Lab (ARUP)			
Sickle Cell Screen	Whole blood (purple top), 1.0 mL	Negative for sickling hemoglobin	Core Lab			Not available
Sirolimus	1 mL, whole blood, EDTA (purple top tube) Obtain just prior to next dose (trough)	3 - 20 ng/mL	Toxicology	Patient samples in lab by 11:00 am will be reported by 4:00 pm. Patient sample in lab after 11:00 am will be analyzed the following day.	See comment	N/A
Smith antibody, anti-SM	Serum, 2mL red top tube	0-30 EU/mL	Core Lab	Order as ENA 1		Not available

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Sodium	Plasma, green top (PST), 0.5 mL. Whole blood, blood gas syringe on ice.	0-6d: 133-146 mmol/L 7d-<1m: 134-144 mmol/L 1-5m: 134-142 mmol/L 6-11m: 133-142 mmol/L 1-11y: 134-143 mmol/L 12-18y: 136-144 mmol/L >18y : 136-142 mmol/L	Core Lab		2h	1h
Sodium, Urine 24h	Urine, 24 h, no preservative	6-10 y, M: 41-115 mmol/d F: 20-69 mmol/d 10-14 y, M: 63-177 mmol/d F: 48-168 mmol/d Adult:40-220 mmol/d (diet dependent) Full-term, 7-14 d old neonates have sodium clearance of about 20% of adult values.	Core Lab			
Sodium, Urine random	Random urine, 0.5 mL	Not available	Core Lab			
Soluble Liver Antigen Antibodies	Serum (red top), 2.0 mL	0-5 U/mL	Reference Lab (ARUP)			
Special procedures			Blood Bank	Detection of drug related antibodies Call Blood Bank supervisor, 3-5401 or Medical Director.		
Spinal Fluid Cell Count	CSF (screw top) unspun, 0.5 mL. Deliver to lab immediately.	WBC Count >12y 0-5 WBC (Mononuclears) 5-12y 0-10 WBC (Mononuclears) 1-4y 0-20 WBC (Mononuclears <1y 0-30 WBC 0-28 Mononuclears 0-2 Polys RBC Count 0	Core Lab		1 hr	1 hr
Spinal fluid culture and smear	1 mL CSF in sterile container. Submit within 30 min of collection. Note antibiotic administration.	No growth	Microbiology			
Spinocerebellar Ataxia by DNA Analysis	Whole blood (purple or yellow top), 2.0 mL	with report	Reference Lab (Athena/Baylor)			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Sputum culture, rout. And smear`	2 mL in sterile container; submit within 2 h.	Acceptable specimens: <10 Epithelial cells/lpf, >25 WBC/lpf.	Microbiology			
Sputum, Cytology	Deliver fresh to lab. See p. 14-15. Cannot share container with Bacteriology.	See Report	Cytology			
SSA, anti-SSA	Serum, 2mL red top tube	0-20 EU/mL	Core Lab	Ordered as ENA 2.		Not available
SSB, anti-SSB	Serum, red top tube	0-20 EU/mL	Core Lab	Ordered as ENAII		Not available
Stain for fat	Stool	None seen	Microbiology			
Stool culture, routine	Collect minimum of 2 g. Submit within 1 h of collection.	Mixed fecal flora	Microbiology			
Stool for mucous; gross mucous exam only	Stool	Negative	Microbiology			
Stool WBC, methylene blue for leukocytes	Submit in stool container within 1 h of collection.	Few/HPF	Microbiology			
Stool, reducing substances and pH	Stool	Reducing substances: neg pH, newborns/neonates: 5-7 Thereafter: 4.5-8.0 (avg.6.0)	Toxicology			
STR (BMT Transplant Monitoring)	Whole blood (yellow top), 3.0 mL Bone marrow (yellow top), 1.0 mL		Immunomolecular Pathology			
Streptococcus screen	Culturette (need 2 swabs)	Negative	Microbiology			
Striated Muscle Antibody	Serum (red top), 1.5 mL	<1:40, No antibody detected	Reference Lab (ARUP)			
Sulfonylurea screen	Serum (red top), 4.0 mL Whole blood (gray top), 4.0 mL or urine, 2.0 mL.	By report	Reference Lab (ARUP)			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Sweat chloride, iontophoresis sponge test	In-Patients schedule procedure prior to the day to be performed (7-1550). No scheduling after 10 AM for the same day. Available M-F.	Normal: 0-39 mmol/L Marginal: 40-60 mmol/L Consistent with diagnosis of cystic fibrosis: >60 mmol/L	Toxicology			
T3, total	Serum (SST), 1.0 mL	1-7 d: 210-578 ng/dL 8-15 d: 83-377 ng/dL 1-17 y: 76-270 ng/dL 18 y up: 80-180 ng/dL	Immunochemistry			
T4 and T8 Lymphocyte enumeration	Whole blood (yellow top), 3.0 mL; A Hemogram must be ordered also. (purple top), 2 mL	See report sheet for normal ranges in children and adults.	Immunomolecular Pathology			
Tacrolimus	Whole blood (purple top), 3.0 mL. Obtain just prior to next dose (trough).	Therapeutic, (ng/mL): Kidney Liver Heart Initial (<3 mo.): 10-15 10-15 10-18 Maintenance: 5-10 5-10 8-15	Toxicology	Patient samples in lab by 11 am will be reported by 4 pm. Patient samples in lab after 11 am will be analyzed the following day.		
Tau transferrin	Serum (red top), 1.0 mL, plus fluid	with report.	Reference Lab (U. of VA)			
Tay-Sachs Diseaseby DNA Analysis	Whole blood (purple or yellow top), 2.0 mL	with report.	Reference Lab (Baylor)			
TC/HDL		HDL-C TC/HDL Desirable >59mg/dL <5.0 Borderline 5.0-6.0 Undesirablel <40 mg/dL >6.0			2 h	NA
TdT (Flow Cytometry)	Whole blood (yellow top), 5.0 mL Bone Marrow (yellow top), 1.0 mL		Immunomolecular Pathology			
Teichoic Acid Antibody	Serum (red top), 1.5 mL	None detected > or equal to 1:2 suggestive of infection	Reference Lab (ARUP)			
Terminal deoxynucleotidyltransferase, Flow cytometry	Whole blood (yellow top), 10 mL Bone marrow (yellow top), 3.0-5.0 mL		Immunomolecular Pathology			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Testosterone, Free	Serum (red top), 2.0 mL	For prepubertal values, call lab at 3-5123 Males: AGE 20-39 8.8 - 27 pg/mL 40-59 7.2 - 23 60-80 5.6 - 19 Female: 0.3-3.0 pg/mL	Reproductive Endocrinology			
Testosterone, Total	Serum (red top), 2.0 mL	Adult Male: 200-810 ng/mL Adult Female: 65-119 ng/mL Postmenopausal: 49-113 ng/mL Children, call the lab at 323-5123	Reproductive Endocrinology			
Tetanus Antibody Titer	Serum (red top), 1.5 mL	> or equal to 0.10 IU/mL= Usually protective level of antibody	Reference Lab (ARUP)			
Tetrahydrocannabinoids (THC), qualitative	Urine, random, 5.0 mL	Negative GCMS quantitation reflexed if positive.	Toxicology			
Theophylline	Plasma, green top (PST): 1.0 mL	Therapeutic, Premature, apnea: 6.0-13.0 µg/mL Bronchodilator: 10.0-20.0 µg/mL Toxic: >22 µg/mL	TDM			
Thiamine	Plasma (green top), 3.0 mL. Deliver immediately to lab on ice.	1.6-4.0 µg/dL	Reference Lab (ARUP)			
Thiocyanate, quanitative	Plasma, green top (PST), 2.0 mL	Nonsmoker: 1-4 µg/mL Smoker: 3-12 µg/mL Nitroprusside infusion, Short term: <72 h: 6-29 µg/mL Long term: >72 h: 50-100 µg/mL Toxic: >100-200 µg/mL	Toxicology		2-8 hrs	1 hr
Throat culture	Swab in sterile container (not for detection of C. diphtheriae, B. pertussis).	Mixed throat flora	Microbiology			
Thrombin time	Citrated plasma (blue top, must be full). Do not draw from Hickman, arterial line, or with ABG's.	>4 weeks 16.0-21.0 sec	Core Lab			1 hr
Thyroglobulin		Thyroglobulin: Normal Thyroid < 35 ng/mL	Special Chemistry			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Thyroglobulin antibodies, thyroid	Serum (SST or plain) or plasma	< 2.2 IU/mL	Special Chemistry			
Thyroglobulin Profile	Serum (SST or plain), or plasma	Thyroglobulin: Normal Thyroid < 35 ng/mL Thyroglobulin: Antibody <2.2 IU/mL	Special Chemistry	Includes Thyroglobulin antibodies		
Thyroid stimulating immunoglobulins	Serum (red top), 3.0 mL	<130 % of basal activity	Reference Lab (ARUP)	Activation of human thyroid membrane adenylate cyclase		
Thyrotropin-releasing hormone stimulation test	Serum (red top), 0, 30 and 60 min.	TSH: 5-10 fold rise above baseline Prolactin, Male and child: 3-5 fold rise above baseline (deminishes with age) Female: 6 to 20 fold rise above baseline (increase in pregnancy)	Immunochemistry	Dose, adult: 500 ug/TRH, I.V. Child: 7 ug/kg TRH, I.V. over 15-30 sec.		
Thyroxine Binding Globulin	Serum (red top), 1.0 mL	13.0-30.0 ug/mL	Reference Lab (ARUP)			
Tobramycin	Plasma, green top (PST), 1.0 mL	Therapeutic, Peak: Less severe inf: 5-8 µg/mL Severe inf: 8-10 µg/mL Trough, Less severe inf: <1 µg/mL Moderate inf: <2 µg/mL Severe inf: <2-4 µg/mL Toxic: Peak: >10 µg/mL Trough: >2-4 µg/mL	Special Chemistry	A trough specimen should be drawn just prior to the next dose. A peak specimen is drawn 60 minutes after teh IV infusion is begun.		
Torch battery	See individual tests.			Also includes:Toxoplasma titers;Rubella titers; Cytomegalovirus titers; Herpes simplex titers(Specify IgG/IgM)		

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Toxocara titer	Serum (red top), 2.0 mL	By report	Reference Lab (Parasitic Disease Consultants)			
Toxoplasma gondii detection By Nucleic Acid Amplification	Whole blood collected in ACD or EDTA, CSF, Amniotic fluid, Tissue (snap frozen) NOTE: THIS TEST IS FOR RESEARCH USE ONLY.	Negative	Microbiology (ARUP)			
Toxoplasma IgG and IgM Antibody	CSF, 0.5 mL	No Reference	Reference Lab (ARUP)			
Toxoplasma IgG Antibody (Serum)	Serum (SST), 2.0 mL	Negative	Immunochemistry			
Toxoplasma IgG Antibody, CSF	CSF, 0.5 mL	Nonreactive	Reference Lab (Focus)			
Toxoplasma IgM Antibody (Serum)	Serum (SST), 2.0 mL	Negative	Immunochemistry			
Toxoplasma IgM Antibody, CSF	CSF,1 mL	<0.90	Reference Lab (Focus)			
Transferrin	Plasma, green top (PST), 1.0 mL	0-5 d 124-288 mg/dL 6-364d 190-302 mg/dL 1-3y 190-302 mg/dL 4-6y 181-329 mg/dL 7-9y 196-314 mg/dL 10-13y 195-385 mg/dL 14-19y 203-386 mg/dL >19y 198-327 mg/dL	Core Lab		2h	1h
Transfusion-reaction	Clotted blood red top, 10 mL and 5 mL whole blood (purple top) and sample of first voided urine. Empty blood bag with recipient set attached. Unit tag attached to bag (and accompanying Blood Bank Transfusion Record). Follow directions on Blood Bank Transfusion Record (H964) and BB Requisition H259 SUN.	Not applicable	Blood Bank			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Transplant monitoring OKT3/ATG	Whole blood (yellow top), 3.0 mL A hemogram must be ordered (purple top), 2 mL	See report for normal values	Immunomolecular Pathology			
Trazadone	Serum (red top), 3.0 mL	0.8-1.6 ug/mL	Reference Lab (ARUP)			
Treponema pallidum	Serum (SST), 1.0 mL	Nonreactive	Immunochemistry			
Trichinosis Antibody	Serum (red top), 2.0 mL	None Detected	Reference Lab (ARUP)			
Trichomonas	Contact supervisor, 3-5411.	Negative	Microbiology			
Triglycerides	Plasma, green top (PST), 0.5 mL	0-5y <100 mg/dL 6-9y <110 mg/dL 10-12y <130 mg/dL 13-18y <150 mg/dL >18y Desirable: <150 mg/dL Borderline high: 150-199 mg/dL High: 200-499 mg/dL Very high: >499 mg/dL Increased risk for pancreatitis: >1,000 mg/dL	Core Lab		2h	1h
Triglycerides, fluid	Fluid, 0.5 mL	Not available	Core Lab			
Troponin I	Plasma, green top (PST), 1.0 mL	<0.05 ng/mL normal >0.5 ng/mL Consistent with AMI	TDM			
Trypsin in stool	Submit stool or duodenal fluid in sterile container within 1 h of collection between 7 AM - 2:30 PM.	Infants and Newborns: Positive in 1:80 dilution	Microbiology			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
TSH, Third Generation	Serum (SST), 2.0 mL	0 d: 1.0-39.0 µIU/mL 5 d: 1.7-9.1µIU/mL 1 y: 0.4-8.6 µIU/mL 2 y: 0.4-7.6 µIU/mL 3 y: 0.3-6.7µIU/mL 4-19 y: 0.4-6.2 µIU/mL >20 y: 0.6-4.5 µIU/mL	Immunochemistry			
Type and hold	Clotted blood (red Top), 10 mL.	Not applicable	Blood Bank	Includes ABO and Rh typing, and antibody screen Specimen will be held 3 days for possible crossmatch		
UA, Urinalysis	Minimum 10 mL freshly voided urine; test must be performed within 2 hours of collection unless refrigerated.	Specific gravity: 0-4 weeks 1.001-1.020 >4 weeks 1.001-1.030 pH: 0-4 weeks 5.0-7.0 >4 weeks 4.5-8.0 Protein: Negative Glucose: Negative Ketone: Negative Bilirubin: Negative Blood Negative Nitrite: Negative Urobilinogen: 0.2-1.0 EU/dL Leukocyte esterase: Negative Microscopic: Leukocytes: 0-4/hpf Erythrocytes: 0-1/hpf Casts: 0-1/hpf Bacteria: Negative	Core Lab			1 hour
Unknown Virus Culture	Tissue, body fluids. Contact lab, 3-5411.	No virus isolated	Microbiology			
Urea nitrogen, fluid	Fluid, 0.5 mL	Not available	Core Lab			
Urea nitrogen, Urine 24 h	Urine, 24 h, no preservative	Adult: 12-20 g/d	Core Lab			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Urea nitrogen, Urine random	Random urine, 0.5 mL	Not available	Core Lab			
Urea Nitrogen/Creatinine ratio	Calculate - BUN divided by CREA	8:1-20:1	Core Lab			
Ureoplasma urealyticum Culture	Genital specimen if adult, trachial aspirate if infant	No Ureaplasma isolated	Microbiology (ARUP)			
Uric Acid	Plasma, green top (PST), 1.0 mL	FEMALE <1m: 1.0-4.6 mg/dL 1m-11m: 1.1-5.4 mg/dL 1-3y: 1.8-5.0 mg/dL 4-6y: 2.0-5.1 mg/dL 7-9y: 1.8-5.5 mg/dL 10-12y: 2.5-5.9 mg/dL 13-15y: 2.2-6.4 mg/dL 16-17y: 2.4-6.6 mg/dL 18-59y: 2.9-6.5 mg/dL 60-89y: 3.5-7.3 mg/dL >89y: 2.2-7.7 mg/dL MALE <1m: 1.2-3.9 mg/dL 1m-11m: 1.2-5.6 mg/dL 1-3y: 2.1-5.6 mg/dL 4-6y: 1.8-5.5 mg/dL 7-9y: 1.8-5.4 mg/dL 10-12y: 2.2-5.8 mg/dL 13-15y: 3.1-7.0 mg/dL 16-17y: 2.1-7.6 mg/dL >17y: 4.3-8.6 mg/dL	Core Lab		2H	1H
Uric Acid, Fluid	Fluid, 0.5 mL	Not available	Core Lab			
Uric Acid, Urine 24 h	Urine, 24 h, no preservative	Adult: 250-750 mg/d Diet: Average, 250-750 mg/d Free purine, M: <420 F: slightly lower Low purine, M: <480 F: <400 High purine: <1000	Core Lab			
Uric Acid, Urine random	Random urine, 0.5 mL	Not available	Core Lab			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Urine screen	Sterile container; follow direction in kit. Submit within 1 h of collection. Call lab for instructions.	Negative; if positive, culture will be performed.	Microbiology			
Urine, Cytology	Deliver fresh to laboratory. Indicate patient history/symptoms and whether voided, catheterized/cystoscope, or bladder washing.	See Report	Cytology			
Urine, routine culture	Sterile container; follow direction in kit. Submit within 1 h of collection. Call lab for instructions.	Suprapubic puncture: no growth. Cath. Spec.: <10,000 organisms/mL Clean catch: <100,000 organisms/mL	Microbiology			
Urobilinogen	Urine, order as Urinalysis.	0.2-1.0 EU/dL	Core Lab			
Valproic Acid	Plasma, green top (PST), 1.0 mL	Therapeutic: 50-100 µg/mL -anti convulsant, 50-125 µg/mL -manic episodes associated with bipolar disorder Toxic: >120 µg/mL	TDM			
Vancomycin	Plasma, green top (PST), 1.0 mL	Therapeutic, trough: 5-15 µg/mL peak: 20-40 µg/mL (peak values less meaningful than trough values) Toxic: >80-100 µg/mL (not well established)	TDM	A trough specimen is drawn prior to the next dose. A peak specimen is drawn 60 minutes after an IV infusion is begun.		
Vancomycin Resistant Enterococcus (VRE)	Available only through Infection Control		Microbiology			
Vanillylmandelic acid	Urine, 24 h; refrigerated during collection. Obtain container from Lab Central, HA619.	<7.0 mg/d	Reference Lab (ARUP)			
Varicella IgG Antibody, CSF	CSF, 1.0 mL		Immunochemistry			
Varicella IgG Antibody, serum	Serum (SST), 2.0 mL	Negative	Immunochemistry			
Varicella IgM Antibody	Serum (SST), 2.0 mL	<0.9 Negative 0.91-1.09 Equivocal > or equal to 1.10 Positive	Reference Lab (ARUP)			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Varicella isolation	Virocult	Negative	Microbiology			
Varicella-Zoster Virus detection By Nucleic Acid Amplification	CSF, Occular fluid, vesicle fluid, or tissue biopsy. NOTE: THIS TEST IS FOR RESEARCH USE ONLY.	Negative	Microbiology (ARUP)			
Vasoactive Intestinal Polypeptide	EDTA lavendar, 3 mL	<75 pg/mL	Reference Lab (ARUP)			
VDRL, CSF Specimens only (For serum tests, see RPR)	CSF, 2 mL, sterile container	Nonreactive	Reference Lab			
Viral Respiratory Battery (viral detection) includes: Influenza A & B, parainfluenza 1,2,3, Adenovirus,	N-P Aspirates. Specimen must be received by 10:00 AM for RSV, FA and FNFA.	Negative	Microbiology			
Virus isolation (unknown virus screen)	Contact Virology Lab, 3-5411. Blood cultured for CMV only.	No virus isolated	Microbiology			
Viscosity, relative	Serum (red top), 30 mL	> or equal to 16 y: 1.45-1.80	Immunochemistry			
Vitamin A	Serum (red top), 1.0 mL	Retinol, 0-1 m: 0.18-0.50 mg/L 2m-2y: 0.20-0.50 mg/L 13y-17y: 0.26-0.70 mg/L Adult: 0.30-1.2 mg/L Retinyl Palmitate: 0.00-0.10 mg/L	Reference Lab (ARUP)			
Vitamin B12	Serum (SST), 2.0 mL	1d-18y: 182-1410 pg/mL >18: 200-1030 pg/mL	Immunochemistry			
Vitamin B12 binding capacity unsaturated	Serum (red top), 1.0 mL	743-1,632 pg/mL	Reference Lab (ARUP)			
Vitamin B6	Plasma (purple top), 1.0 mL; protect from light.	5.0-30.0 ng/mL	Reference Lab (ARUP)			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Vitamin C	Plasma (green top), 5.0 mL. Deliver to lab immediately. Protect from light.	0.4-2.0 mg/dL Deficiency: <0.2 mg/dL	Reference Lab (ARUP)			
Vitamin D(1,25-(OH)2 D3)	Serum (red top), 3.0 mL	15-75 pg/mL	Reference Lab (Quest)			
Vitamin D25-(OH)D, total	Serum (red top), 1.0 mL	15-57 ng/mL	Reference Lab (Quest)			
Vitamin E	Serum red top), 1.0 mL	alpha-tocopherol, 0-1 m: 1.0-3.5 mg/L 2-5m: 2.0-6.0 mg/L 6m-1y: 3.5-8.0 mg/L 2-12y: 5.5-9.0 mg/L >13y: 5.5-18.0 mg/L	Reference Lab (ARUP)			
Volume, blood	Whole blood (purple top)	Premature: 90-108 mL/kg Newborn: 80-110 mL/kg Infant: 70-111 mL/kg Adult: 72-100 mL/kg	Nucl. Med.			
Volume, plasma	Plasma (green top)	Adult: 49-59 mL/kg	Nucl. Med.			
Von Willebrand Antigen	Citrated plasma (blue top, must be full). Do not draw from Hickman, arterial line, or with ABG's.	All ages: 0.6-2.0 U/mL	Core Lab			Not available
Von Willebrand Factor Ristocetin Cofactor	Citrated plasma (blue top, must be full. Do not draw from Hickman, arterial line, or with ABG's.	All ages: 0.6-2.0 U/mL	Core Lab			Not available
WBC	Whole blood (purple top), 2.0 mL. Mix well. May be collected by fingerstick in microtainer tube.	<7d 9.0-30.0 k/µL 1-7wk 5.0-21.0 k/µL 2-23m 6.0-15.0 k/µL 2-9y 4.0-12.0 k/µL >9y 4.0-10.5 k/µL	Core Lab		2h	1h
West Nile Virus RNA by PCR	CSF (0.5 mL), Serum from clotted blood 3 mL.	Not detected	Microbiology (MRL)			
Western blot for HIV-I	Serum (red top), 2.0 mL	Nonreactive	Reference Lab (VA)			

TEST NAME	SPEC REQUIREMENT	REFERENCE RANGE	LAB	COMMENTS	R TAT	S TAT
Whey allergen	Serum (red top), 1.0 mL	Given with report	Reference Lab (Quest)			
Whipples Bacillus DNA by PCR	CSF or Tissue Biopsy	Not detected	Microbiology (MRL)			
Wound Culture	Aspirate preferred. Collect in sterile container and submit within 30 min of collection. Not antibiotic administration and specify site and diagnosis.	Individual interpretation	Microbiology			
Wright's Stain	Call Hematology for instructions, 7-1973,		Core Lab			
x	Citrated plasma (5.0 mL blue top, must be full); deliver specimen on ice. Do not draw from Hickman, arterial line, or with ABG's.	17-22 sec	Core Lab			
Xylose absorption, blood	Serum (red top), at least half full. Adults: fasting and 2 h after xylose administration. Child: fasting and 1 h after xylose administration.	By report	Reference Lab (ARUP)			
Xylose absorption, urine	Urine. Adults and children; 5 h collection after xylose administration; use no preservatives.	By report	Reference Lab (ARUP)			
Zinc, quanitative, serum	Serum (plastic red top), 2.0 mL. Deliver to lab immediately. Due to diurnal variation, samples should be collected in early morning while still fasting.	Male / Female 0-16: 66-144 / 66-144 17+: 75-291 / 65-256	Reference Lab (ARUP)			