SPECIMEN COLLECTION & HANDLING MANUAL

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Urea Nitrogen
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Carcinoembryonic Antigen
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Cerebral Spinal Fluid Protein
Chloride
Cholesterol
Bicarbonate, CO2
Creatine Kinase
Creatinine
Direct Bilirubin
Gamma Glutamyl Transferase
Glucose
HDL Cholesterol
Ionized Calcium, Serum & Plasma
Lactate Dehydrogenase
LDL Cholesterol
Magnesium
Phosphorus
Potassium
Pregnancy, Urine
Pregnancy, Serum
Prostate Specific Antigen
Sodium
Stool Occult Blood
Total Bilirubin
Total Protein
Urine Total Protein
Triglycerides
Uric Acid
Urine Creatinine/ Creatinine Clearance
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Microbiology Specimens
Additional testing may be performed at the University of Washington, Laboratory Medicine. Follow this link to search their online Lab User's Guide.

**Molecular (PCR) Studies**
Molecular studies to be performed by UW Molecular Hematopathology. For Hematopathology Laboratory Test Forms visit: [http://depts.washington.edu/labweb/Divisions/Hema/testforms.htm](http://depts.washington.edu/labweb/Divisions/Hema/testforms.htm)

For more detailed information refer to UW Lab Medicine online Lab User's Guide.

**Virology Specimens**
Additional testing may be performed at the University of Washington, Laboratory Medicine. Follow this link to search their online Lab User's Guide.
Introduction*

This manual summarizes requirements for collecting and handling specimens for testing in the Clinical Laboratories of the Seattle Cancer Care Alliance. It has been prepared and revised as part of our ongoing efforts to provide the best possible patient care.

The directors, supervisors and technologists/technicians of the respective laboratories, and the QA Manager, Clinical Labs have written these procedures. Revisions and supplements will be provided as needed.

We urge you to let us know of any errors, ambiguities or other deficiencies in this manual. Please contact the director or manager of the appropriate laboratory. You may also contact the QA Manager, Clinical Labs at 606-7360.

Brent L. Wood, MD, PhD
Director of Clinical Laboratories
Seattle Cancer Care Alliance

*Note: All contact numbers listed throughout this manual assume a 206-area code unless otherwise specified.
# Lab Locations and Hours of Service

<table>
<thead>
<tr>
<th>Laboratory</th>
<th>Building</th>
<th>Room</th>
<th>Phone</th>
<th>Pager</th>
<th>Service Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Alliance Lab - Blood Draw</strong></td>
<td>SCCA</td>
<td>1500</td>
<td>Blood Draw: 606-1214</td>
<td></td>
<td>M-F 6am – 6pm (with nurses available), 6pm – 8pm (VP only) Weekends &amp; Holidays 8am – 4:30pm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Reception: 606-6201</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Alliance Lab - Specimen Processing</strong></td>
<td>SCCA</td>
<td>1500</td>
<td>606-1088</td>
<td></td>
<td>M-F 6am – 10pm Weekends &amp; Holidays 7:30am – 5:30pm</td>
</tr>
<tr>
<td><strong>Alliance Lab - Testing</strong></td>
<td>SCCA</td>
<td>1500</td>
<td>Main: 606-1088</td>
<td></td>
<td>M-F 6am – 10pm Weekends &amp; Holidays 8am – 6pm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Chem: 606-1094</td>
<td></td>
<td></td>
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<tr>
<td></td>
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<td>Coag: 606-1094</td>
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<tr>
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<td></td>
<td></td>
<td>Heme: 606-1084</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cellular Therapy Lab</strong></td>
<td>1100</td>
<td>E1-419</td>
<td>606-1200</td>
<td></td>
<td>M-F 7am – 8pm Weekends &amp; Holidays 9am – 5pm; leave a message on voicemail; on-call tech will respond</td>
</tr>
<tr>
<td><strong>CIL</strong></td>
<td>188 E Blaine</td>
<td>STE 250</td>
<td>Lab Coordinator Office (LABCO): 606-7700</td>
<td>606-340-7207</td>
<td>M-F 8:30am – 5pm</td>
</tr>
<tr>
<td><strong>Cytogenetics</strong></td>
<td>188 E Blaine</td>
<td>STE 250</td>
<td>Main Line: 206-606-1390</td>
<td>206-606-4268</td>
<td>M-F 8am-5pm Weekends &amp; Holidays on call 9am-5pm</td>
</tr>
<tr>
<td><strong>GI Oncology</strong></td>
<td>SCCA</td>
<td>7220</td>
<td>Testing: 606-4268</td>
<td></td>
<td>M-F 6:30am – 3:30pm After hours: contact Alliance Lab</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SPS: 606-4269</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Immunotherapy Lab</strong></td>
<td>SCCA</td>
<td>6049</td>
<td>Testing: 606-6049</td>
<td></td>
<td>M-F 6:30am – 4:00pm After hours: contact Alliance Lab</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>SPS: 606-6050</td>
<td></td>
<td></td>
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<tr>
<td><strong>Immunotherapy Biomarker Lab</strong></td>
<td>SCCA</td>
<td>6100</td>
<td>606-6053</td>
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</tr>
<tr>
<td><strong>Pathology</strong></td>
<td>SCCA</td>
<td>7910</td>
<td>606-1355</td>
<td>Technologist 573-0892</td>
<td>Monday 9:00am – 6:30pm Tues-Fri 6:00am – 6:30pm</td>
</tr>
</tbody>
</table>

[^1]: See footnotes for further information.
### Pharmacokinetics

<table>
<thead>
<tr>
<th>Location</th>
<th>Phone</th>
<th>Pager</th>
</tr>
</thead>
<tbody>
<tr>
<td>188 E Blaine</td>
<td>606-7389</td>
<td>994-5942</td>
</tr>
</tbody>
</table>

**Sat** 6:00am – 2:30pm
**Sun and all other times** contact Path Technologist

**Pathology is on call:**
24 hours 7 days a week, including Weekends & Holidays

### Point of Care Testing

<table>
<thead>
<tr>
<th>Location</th>
<th>Phone</th>
<th>POCT Office</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCCA</td>
<td>606-1095</td>
<td>POCT Office: 206-606-7635</td>
</tr>
</tbody>
</table>

Clinic hours varies by POCT unit
POCT Office:
Monday – Friday
6:30am to 6:30pm

### Transfusion Service Support

<table>
<thead>
<tr>
<th>Location</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCCA</td>
<td>606-1095</td>
</tr>
</tbody>
</table>

M-F 7am – 10pm
Weekends and Holidays
7:30am – 5:30pm

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**After Hours/Special Instructions**

**Alliance Lab**

**Testing:** Hematology, limited chemistry, coagulation, blood gas analysis, and urinalysis.

Routes tests not performed in the Alliance Laboratory to outside reference and research labs.

Provides transfusion service support.

**Location:** SCCA Room 1-500, Phone 606-1088

**Routine hours:** M – F, 6am – 10pm; 8am – 6pm, weekends and holidays

**After hours:** patients are seen at UWMC

**Blood Draw:** SCCA Room 1-500, Telephone: 606-1214 or 606-6201

**Routine Hours:** M – F 6am – 6pm (with nursing), 6pm-8pm (VP only);
8am – 4:30pm weekends and holidays

**After hours:** Infusion until 10pm. After 10pm patients are seen at UWMC.

**Alliance Lab Specimen Processing:** SCCA Room 1-500; Telephone: 606-1088

**Routine hours:** M – F, 6:00am – 10pm; 7:30am – 5:30pm, weekends and holidays

**After hours:** patients are seen at UWMC

**Cellular Therapy:**

**CD34 Assay**

**Location:** 1100 Eastlake E, Room E1-419, Telephone: 606-1200

**Routine hours:** M – F 7am – 8pm, Processing 7am – 4pm

Weekends and holidays 9am – 5pm; Processing 9am – 3pm

**After hours:** Pager 206-540-2851
After hours specimen handling: Redraw a fresh specimen in the morning.

Clinical Immunogenetics Lab:

HLA Typing and Chimerism Testing
Location: 188 E Blaine STE 250, Telephone (Lab Coordinator Office): 606-7700
Routine hours: M – F 8:30am – 5pm (see specific tests for cutoff times for specimen receipt)
After hours specimen handling: Draw sample and keep at room temperature. Deliver to the lab at 8am on the next working day.

Cytogenetics Lab:

Chromosome analysis, (FISH), and Genomic Array
Location: 188 E Blaine, STE 250, Telephone: 206-606-1390 main line
Routine hours: M – F 8am – 5pm
After hours: on call 9am – 5pm weekend and holidays, Pager 206-340-7207
After hours specimen handling: Draw venous blood or marrow in tubes containing an appropriate anticoagulant (sodium heparin for chromosome analysis and FISH; EDTA for Genomic Array). Store at room temperature until delivery to the lab during day shift or on-call hours. DO NOT HOLD SPECIMENS OVER THE WEEKEND - contact pager: 206-340-7207.

Pathology:

Histology and Morphology
Location: SCCA Room G7-910, Telephone: 606-1355
Routine hours: Monday 9am – 6:30pm; Tuesday – Friday 6:00am – 6:30pm
Saturday: 6am – 2:30pm
Sunday and all other times, contact the on-call Pathology Technologist at 206 573-0892. There is an on-call pathologist & Histology tech 24 hours/ 7 days a week including holidays and weekends. After hours: In advance of the procedure, notify the SCCA Pathology on-call technologist at the cell number 206-573-0892. When the specimen is available, notify the on-call technologist at 206-573-0892

Pharmacokinetics:

Performs Therapeutic Drug Monitoring and Busulfan Testing
Location: 188 E Blaine, STE 250, Telephone: 606-7389
Routine hours: Tuesday – Saturday 8am – 5pm. On-call Sundays, Mondays, and Holidays.
After hours: Contact pager 206-994-5942

Microbiology Specimens:
Sent by Specimen Processing to UWMC Microbiology; NW177; 598-6471

Virology Specimens:
Sent by Specimen Processing to UW Virology lab at 1616 Eastlake; 685-8037
# SCCA / RESEARCH / AFFILIATED LABORATORIES
## LOCATIONS RESOURCE GUIDE

<table>
<thead>
<tr>
<th>Lab Name</th>
<th>Type of Lab</th>
<th>Lab Location</th>
<th>Phone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bloodworks Northwest</td>
<td>Transfusion Medicine</td>
<td>921 Terry</td>
<td>292-6525</td>
</tr>
<tr>
<td>Transfusion Support Office-</td>
<td>Transfusion Support</td>
<td>K-231</td>
<td>606-1014</td>
</tr>
<tr>
<td>(SCCA)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UW Laboratory Client Support</td>
<td>Clinical Labs</td>
<td>UW Montlake</td>
<td>520-4600</td>
</tr>
<tr>
<td>Services</td>
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<td><a href="mailto:commserv@uw.edu">commserv@uw.edu</a></td>
</tr>
<tr>
<td>UW Hematopathology</td>
<td>Flow Cytometry &amp; Molecular</td>
<td>G7-800</td>
<td>606-7060</td>
</tr>
<tr>
<td>Studies</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

For information on Seattle Children’s Laboratories visit [https://www.seattlechildrens.org/healthcare-professionals/access-services/diagnostic-services/laboratories/](https://www.seattlechildrens.org/healthcare-professionals/access-services/diagnostic-services/laboratories/)

For information on UW Laboratories visit [http://depts.washington.edu/labweb/](http://depts.washington.edu/labweb/)

For information and contact info on FHCRC Laboratories visit [https://www.fredhutch.org/en/faculty-lab-directory.html](https://www.fredhutch.org/en/faculty-lab-directory.html)
SEATTLE CANCER CARE ALLIANCE

Policies

Medical Necessity Information
When ordering tests, only those that are medically necessary for diagnosis and treatment of the patient should be ordered. The ordering physician or practitioner must provide an ICD code (International Classification of Diseases—current Revision) or narrative description for each test ordered. Medicare does not pay for screening tests, except for certain specifically approved tests.

While ordering custom panels or organ/disease related panels might be convenient, tests that are not medically necessary might be included. Lab requisitions include all tests included in each panel. Any test in a panel may be ordered as an individual test to avoid ordering tests that are not medically necessary.

Reflexive Testing
Some of our tests can be ordered as reflex tests or panels in which additional testing is done automatically in response to particular results from the initial testing. These tests or panels are included on the lab requisition and indicate when reflexive testing will be done.

Repeat Testing
Whenever there is a question about the validity of a test result, a repeat will be performed at no additional charges if there is specimen available.

Reporting
Results that have been entered into the Pathology LIS (Powerpath), the Alliance Lab LIS (SunQuest, also used by CIL for Chimerism) or LabWare LIMS (Pharmacokinetics, Cytogenetics, Clinical Immunogenetics Lab (CIL), Cellular Therapy) are available for viewing in ORCA and MINDscape. Reports not available in ORCA or MINDscape are faxed or printed to Health Information Management (HIM) and the patient care areas.

Referral to Another Lab
Testing not provided by the Seattle Cancer Care Alliance Laboratories or Affiliate Laboratories will be referred to another qualified laboratory licensed to perform high complexity testing in the specialty/subspecialty as defined by the Clinical Laboratory Improvement Amendment (CLIA).

SCCA has established a reference laboratory policy in cooperation with UW Laboratory Medicine to ensure appropriate and adequate organizational oversight, to safeguard the SCCA conflict of interest policies and to ensure standard processes for laboratory testing outside the SCCA and UW Medicine Organizations.

The Laboratory Director for the UW Medicine Department of Laboratory Medicine has designated the division directors, in consultation with laboratory medicine residents, institutional medical staff or physician clients (where appropriate), as primarily responsible for the selection of the reference laboratory locations and clinical oversight of the referral testing process.

UW Laboratory Medicine oversight is established by the assignment of specific division directors to each test referred to other laboratories. The appropriate division director assignment is based on clinical expertise and experience in the general classification of the assay. Assignments are adjusted as needed and are reviewed annually.

The UW Laboratory Medicine Resident (LMR) must approve requests for non-defined reference laboratory tests and select an appropriate reference lab.
The final reports will include the name of the laboratory performing the test.

Procedure for Requesting Reference Lab Testing

1. Providers requesting reference lab tests must complete a physician’s order to be filed in the patient’s medical record.

2. Requests for reference lab testing should be submitted to the Alliance Laboratory which will coordinate the administrative functions necessary for UW LMR approval of the test(s) and specimen collection. In general, reference laboratory test requests should be submitted to the Alliance Lab in writing on a SCCA Clinical Laboratory test request form. The Alliance Lab may be phoned in advance if advance administrative coordination is necessary (see below).

3. In general, a minimum of 24 hours advance notice is required by the Alliance Laboratory staff to allow administrative coordination, minimize patient waiting, and ensure appropriate specimen collection. Ordering providers or their staff should notify the Alliance Laboratory for reference laboratory testing need by submitting in advance a test request form or by calling 606-1088.

4. The UW LMR may need to speak directly with the ordering provider and require time to determine if clinical testing is available and to select an appropriate lab for testing. Alliance Lab staff will provide the ordering provider name and contact information upon LMR request.

5. Denial of testing: UW LMR denial of testing is most often the result of either clinical testing that is unavailable or the test is offered only on a research basis. The ordering provider will be notified of the denial by either the UW LMR or Alliance Laboratory staff.

6. Inquiries about establishing new laboratory testing opportunities at the SCCA or UW Laboratory Medicine or at other reference laboratories should be directed to the SCCA Clinical Laboratory Medical Director or the SCCA Associate Director of Clinical Laboratories.
Seattle Cancer Care Alliance
SPECIMEN HANDLING GUIDELINES

I. Labeling the Specimen
Specimens may be labeled with a Sunquest-generated label, an Epic label, or a hand-written label. The following information must appear on the specimen label:

1. Patient name: last name, first name, middle initial or middle name
2. Patient Medical Record Number (MRN)
3. Patient Date of Birth*
4. Date and time the sample was collected
5. Specimen source when applicable, i.e. throat, urine
6. Initials of the person drawing the specimen

*Bloodworks Northwest does not accept the date of birth as a specimen identifier.

Note: Specimens collected for T&C and HLA Typing require two staff members to verbally verify the spelling of the patient’s name, the MRN, and date of birth. Both staff members will initial the specimen tube.

Note: Label to be attached in the presence of the patient.

II. Requisition
For those lab tests requiring a requisition form, a CPOE requisition will be generated. The following information is included on the requisition:

1. Patient last name, first name, middle initial or middle name
2. Patient date of birth
3. Patient Medical Record Number (MRN)
4. Patient location
5. Specimen and site, if applicable
6. Date sample collected/to be collected
7. Time sample collected/to be collected
8. The location where the specimen is to be collected (Alliance Lab, Apheresis or Infusion Room)
9. Test(s) required
10. Physician name and billing ID number (UPN)
11. ICD code or descriptive diagnosis
12. Please provide any other pertinent clinical information/history that is available
13. Where applicable, a sample drawn from a donor or family member should include the patient name and the donor’s relationship to the patient.

Verify that the information on the requisition matches the information on the specimen that it accompanies.

III. Specimens Processed in the SCCA Labs
Orders defined in Sunquest or PowerPath will be interfaced with these lab systems from ORCA. Specialty labs will receive requisitions printed from ORCA and will continue to log in specimens in LabWare.
IV. Packaging and Transport of Specimens Not Processed in the SCCA Labs

Specimens sent to testing laboratories at FHCRC and the SCCA Clinic shall be packaged into sealed biohazard marked zip-lock bags. Test request forms accompanying these specimens should be placed in the pouch on the outside of the bag.

Specimens transported via the SCCA Clinic tube system will be double-bagged in sealed zip-lock biohazard marked bags.

Specimens transported outside of the SCCA Clinic or FHCRC must be packaged into containers with hard sides (i.e., Styrofoam, plastic with screw top lid, cardboard box with appropriate Styrofoam specimen holder, etc.) and securely closed with packaging tape. Shipping containers will contain absorbent material. A biohazard sticker must be affixed to the outside of the shipping container. A sticker stating “diagnostic specimens” must be affixed to the outside of the shipping container. Complete a commodities tracking/routing slip appropriate for the destination of the specimen (UWMC, Seattle Children’s, SLU, etc.)

V. Criteria for Rejection of Specimens

It is within the discretion of the receiving laboratory to determine if a specimen has been compromised, justifying the rejection of the specimen. Below are specific reasons that may apply.

A. Mislabeled specimens and requisitions

Specimens submitted to the Alliance laboratories must adhere to all collecting, labeling, packaging, transporting, and storing guidelines outlined in this manual. Misidentified or unlabeled specimens or requisitions will not be accepted. Mislabeled specimens are defined as:

- Specimens that are not labeled
- Specimens labeled on the container lid only
- Specimens labeled with a patient name and/or identification number different from that on the accompanying lab requisition form
- Specimens were drawn from the correct patient but labeled with the wrong name and identification number or date of birth
- Specimens with matching specimen and requisition labels but drawn from the wrong patient
- Specimens not labeled with two patient identifiers

The laboratory receiving the specimen will immediately notify the ordering location of the error and request a new specimen.

If extenuating circumstances exist that prevent re-collection of the specimen and the patient care provider requests that the test be performed on a specimen meeting the definition of a mislabeled specimen, the lab will follow the Mislabeled Laboratory Specimens and Requisitions LAPP Gen.01. This LAPP can be found on PolicyStat.

B. Hemolysis of the blood sample

Hemolysis results from the destruction of RBCs and the liberation of hemoglobin into the fluid portion of the specimen. This will not be known until the sample has been separated. Severe hemolysis will affect certain tests (such as Potassium and Lactate Dehydrogenase), and the sample will have to be redrawn.

(Continued)
Hemolysis can be caused by:

- mixing additive tubes too vigorously or using rough handling during transport
- drawing blood from a vein that has a hematoma
- pulling back the plunger on a syringe too quickly
- using a needle with too small of a bore for the venipuncture
- using too large a tube when using a small diameter butterfly needle
- frothing of the blood caused by an improper fit of the needle on a syringe.
- forcing the blood from a syringe into an evacuated tube

C. Specimen clotted

Inadequate mixing of the Vacutainer™ tubes as soon as possible after the phlebotomy will result in the blood not mixing with the anti-coagulant. By gently inverting the Vacutainer™ tube 5-10 times, the blood will mix, and clotting will not occur.

D. Insufficient Specimen Quantity or Quantity Not Sufficient (QNS)

Blood-testing volumes are reviewed annually for appropriateness, and every effort is made to minimize these volumes. Please check the test to see what the minimum requirements are for that procedure. Specimens with insufficient volumes for testing will have to be redrawn.

VI. Collection Guide

A. Contamination

Non-additive tubes are drawn before additive tubes to avoid contamination with the additive.

B. Additive-Containing Tubes

Even for tubes with additives, there is a recommended "order of draw" to avoid cross-contamination that can result in erroneous test values. Additive-Containing tubes should be drawn as follows:

1. Blue top tubes (Na Citrate)
2. Green top tubes (Heparin)
3. Purple top tubes (EDTA)

   Note: Gently invert tubes 5-10 times to mix the blood with the additive.

C. Order of Draw

The recommended "order of draw" when collecting several specimens from a single venipuncture and using an evacuated tube system is as follows:

1. Syringe for blood cultures
2. Glass Red Top
3. Blue Top or Black Top
4. Royal Blue Top No Additive
5. Gold or Red Gray Tiger Top or Orange Top
6. Plastic Red Top Tube
7. Lime Green Top
8. Green Top
9. Lavender (Purple) Top
10. Royal Blue Top with EDTA
11. Purple and Yellow Top (CellSave tube)
12. Gray Top
13. Yellow Top
15. HLA Syringe
16. Specialty Tubes – Unless otherwise noted

Research is drawn with clinical samples following the correct order of draw.

* If blood cultures are not drawn and the 1st tube to be drawn is the Blue Top, a Discard Tube or a glass Red Top tube for testing MUST be drawn first to eliminate possible thromboplastin contamination from the site of the venipuncture. Note that plastic red top tubes contain a clot activator. You must use the translucent red top tube with no clot activator as a discard tube. Laboratory staff is able to assist with determining the correct tube for discard.

D. Minimizing unnecessarily large blood draw volumes

Blood losses from phlebotomy, particularly in pediatric patients and those with many venipunctures, may be a cause of iatrogenic anemia and increased transfusion needs. Adverse consequences of excess venipunctures include complications during collection for patients and health care workers, hazards from subsequent transfusions, contending with increased amounts of hazardous waste, and greater cost.

Wherever possible, efforts should be made to reduce blood collection volumes in the following manner:

1. Combining tests with similar specimen tube type and processing and storage and transport requirements.
2. Reducing the number of blood collection tubes to produce the minimum volume needed for laboratory testing.

Minimal specimen requirements for tests performed at the SCCA Cellular Therapy, Clinical Immunogenetics, Cytogenetics, Pathology, Pharmacokinetics, Alliance Laboratory (including IMTX and GI Oncology) and POCT are specified in this manual: see entry for each test.

Minimal specimen collection requirements for tests performed at UW Laboratory Medicine labs can be located in the UW Laboratory Medicine online test guide [http://menu.labmed.washington.edu/oltg](http://menu.labmed.washington.edu/oltg)
The staff member providing the timed urine/stool container(s) is responsible for labeling the container(s) before giving them to the patient.

The following information must appear on the specimen label:

1. Patient name: Last name, first name and middle initial
2. Patient Medical Record Number (MRN)
3. Patient Date of Birth
4. Date and Time the specimen was collected

Provide the patient with the Timed Urine Collection or Timed Stool Collection instruction form, or the Stool Collection form (not timed).

Patient Instructions for timed urine collection
Patient Instructions for timed stool collection
Patient Instructions for stool collection (not timed)
**Timed Urine Collection**

The best diagnostic results are based on a complete 24-hour urine collection, so it is important for you to follow this procedure carefully.

1. Start the collection at any time that is convenient for you.
2. To start, empty your bladder and discard the urine. Record the start time on this form.
3. Using the urine “hat” or urinal, save all urine from this point on in the container provided. If you need another container, the Alliance Lab staff, your team nurse, or nurse case manager will provide one for you.
4. At exactly 24 hours after your start time, empty your bladder and add this urine to the container. Record this time on this form. Do not put any additional urine into the container.
5. Store the container in the refrigerator during the collection period.
6. If any urine is spilled or discarded during the 24-hour period, stop the collection. Discard the urine and discard the container in the trash. (**Note: If your container has HCL added, please bring the collection container to the Alliance Lab to discard**). In order to begin collection again, request another collection container from the Alliance Lab or your team/clinical nurse.
7. Deliver the container along with this form to the Alliance Lab (1st floor-Specimen Window) as soon as possible (preferably the same day).

If you have been asked to collect urine for the following tests, please note the restrictions listed below:

<table>
<thead>
<tr>
<th>Test</th>
<th>Restrictions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bence Jones Quantitation</td>
<td>No Restrictions. No additive required. <strong>REFRIGERATE DURING COLLECTION.</strong></td>
</tr>
</tbody>
</table>
| Catecholamines (Epinephrine, Norepinephrine, Dopamine Metanephrine) | 15 mL HCL must be added to container prior to collection. Please see Alliance Lab staff. **REFRIGERATE DURING COLLECTION.**  
  (** Note: HCL can cause burns and irritations. Avoid contact with skin or eyes.)  
  Discontinue one week prior to and during collection: mythyldopa (Aldomet), & related antihypertensives, tetracyclines, quinidine, and quinine. |
| Creatinine Clearance                       | A blood Creatinine level is required within 48 hours of the conclusion of the urine collection. Please check in with the lab to see if you need blood drawn for this test.  
  No Restrictions. No additive required. **REFRIGERATE DURING COLLECTION.** |
| Creatinine, Protein, Protein Electrophoresis | No Restrictions. No additive required. **REFRIGERATE DURING COLLECTION.**                      |
| Cortisol                                  | 10 g of boric acid must be added to container at start of collection. **REFRIGERATE DURING COLLECTION.** |
| Prophyrins Quantitation (includes porphobilinogen) | 5g sodium carbonate (**NOT sodium bicarbonate**) must be added to container prior to collection. Please see Alliance Lab staff. **REFRIGERATE DURING COLLECTION.**  
  Protect from light. Keep collection container in brown paper bag.  
  Blood specimen and stool collection may be required as well. Please check with your Team Nurse or Nurse Case Manager to determine if these are necessary. |
| VMA                                       | 15 mL HCL must be added to container prior to collection. Please see Alliance Lab staff. **REFRIGERATE DURING COLLECTION.**  
  (** Note: HCL can cause burns and irritations. Avoid contact with skin or eyes.) |
| 5HIAA (5-Hydroxyindolacetic Acid)          | 15 mL HCL must be added to container prior to collection. Please see Alliance Lab staff. **REFRIGERATE DURING COLLECTION.**  
  (** Note: HCL can cause burns and irritations. Avoid contact with skin or eyes.)  
  Discontinue two days before and during collection: acetanilide, aspirin, avocados, bananas, chlorpromazine, cough medicines, eggplant, methamphetamines, nicotine, nortriptyline, nuts, phenothiazine, pineapple and plums. |

Patient Name:_________________________ Start Date:_____/_____/_____ Start Time: __________

Stop Date: ____/____/_____ Stop Time: __________
Timed Stool Collection for Fecal Fat

The best diagnostic results are based on a complete 36 to 72-hour collection. Therefore, it is important for you to follow this procedure carefully.

1. You must be off any mineral oil compound for three days prior to start of your stool collection.

2. Start the collection at any time that is convenient for you.

3. Collect stool into collection “hat” and transfer to the specimen container provided.

4. Do not fill the container more than half full. You may request another collection container from the Alliance Lab staff.

5. Keep the specimen container refrigerated during the collection time period.

6. Seal the lid securely and deliver the container(s) along with this form to the Alliance Lab as soon as possible (preferably the same day).

**Note:**

- Store the container in the refrigerator during the collection period.

- **DO NOT DISCARD ANY STOOL SPECIMEN DURING THE COLLECTION TIME FRAME.**

**Patient Name:** ____________________________

**Patient Medical Record Number:** ____________________________

**Patient Date of Birth:** ____________________________

**Date Started:** _____/_____/_____

**Date Completed:** _____/_____/_____

**Time Started:** ____________________________

**Time Completed:** ____________________________

---
Alliance Laboratory

Stool Collection Instructions

You have been asked by the medical team to obtain a stool specimen. We ask that you collect the specimen according to the following instructions.

- **NOTE:** Antacids, barium bismuth, anti-diarrhea medication or oily laxatives should not be used prior to collection.
- **Containers should be labeled prior to collection with the patient’s name and either the date of birth or the MRN (the U number).**

1. Stool sample containers and a collection device (hat shaped white plastic) have been provided to you.
2. The stool sample should not be contaminated with urine or toilet paper.
3. Collect stool in the white plastic container (the hat) that is provided:
   a. Lift the toilet seat.
   b. Place the device over the toilet bowl.
   c. Place the toilet seat down.
   d. Pass the stool into the white plastic (hat) container without it being contaminated with urine.

4. Once stool is in the hat, use a wooden stick (or pour) to remove portions of the stool and place it into the containers provided, collecting any mucus or blood with the specimen. **Depending on the tests ordered by your provider, you may receive one or all of the containers below:**
   a. For *C. difficile* and/or virology tests, place a portion of the stool sample into separate sterile clear containers without additive.
   b. For bacterial culture, place stool into the Para-Pak C&S Orange Cap container to the fill line, tighten the cap, and shake firmly to ensure that the specimen is adequately mixed.
   c. For Ova and Parasite Exam, place stool into the Para-Pak EcoFix Green Cap container to the fill line, tighten the cap, and shake firmly to ensure that the specimen is adequately mixed.

5. **Verify the containers are labeled correctly with your name and another identifier.**
6. Place the containers into the biohazard bag and seal the bag.
7. Remove gloves and wash hands

Note: The specimen should be delivered to the Alliance Laboratory drop-off window within 24 hours after collection. **Samples collected in preservative should be kept at room temperature. Samples collected without preservative should be refrigerated.**

**Lab Hours:**
- Monday – Friday: 7am – 8pm
- Saturday & Sunday: 8am – 4:30pm
- Holidays: 8am – 4:30pm
This table provides additional information for tests performed in the SCCA Alliance Laboratory. *Note:* several tests that were formerly listed in these tables have been removed from this list because they are performed elsewhere (UWMC, HMC). Additional information is available on the UWMC Online Test Guide: [http://menu.labmed.washington.edu/oltg](http://menu.labmed.washington.edu/oltg)

**Turnaround times are 60 minutes except as noted under Comments.** Turnaround time is defined as the time from specimen draw to result reporting. Not included in the turnaround time are specimen transport time, blood draw waiting time, and blood draw time. These may also delay results.

### CHEMISTRY PANELS

<table>
<thead>
<tr>
<th>TEST MNEMONIC</th>
<th>DESCRIPTION</th>
<th>TESTS INCLUDED</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMP</td>
<td>Basic Metabolic Panel</td>
<td>Na, K, Cl, CO₂, Glu, BUN, Creat, Ca, calculated glomerular filtration rate</td>
<td></td>
</tr>
<tr>
<td>LYT</td>
<td>Electrolytes</td>
<td>Na, K, Cl, CO₂</td>
<td></td>
</tr>
<tr>
<td>LIPID</td>
<td>Lipid Panel</td>
<td>Chol, HDL, Trigs, LDL</td>
<td></td>
</tr>
<tr>
<td>HFPA</td>
<td>Hepatic Function Panel</td>
<td>ALT, AST, ALK, Albumin, Bili T/D, Total protein</td>
<td></td>
</tr>
<tr>
<td>SHFL</td>
<td>Hepatic Function Panel + LD</td>
<td>ALT, AST, ALK, Albumin, Bili T/D, Total protein, LD</td>
<td></td>
</tr>
<tr>
<td>RENFP</td>
<td>Renal Function Panel</td>
<td>Albumin, Ca, CO₂, Cl, Creat, Glu, Phosphorus, Na, K, BUN, calculated glomerular filtration rate</td>
<td></td>
</tr>
<tr>
<td>SRFM</td>
<td>Renal Function Panel + Mg</td>
<td>Albumin, Ca, CO₂, Cl, Creat, Glu, Phosphorus, Na, K, BUN, Mg, calculated glomerular filtration rate</td>
<td></td>
</tr>
<tr>
<td>SCOMP</td>
<td>SCCA Comprehensive Metabolic Panel with calc. for globulin and A/G ratio</td>
<td>Na, K, Cl, CO₂, Glu, BUN, Creat, Ca, Total Protein, Albumin, ALT, AST, ALK, T Bili, Globulin, A/G ratio, calculated glomerular filtration rate</td>
<td></td>
</tr>
<tr>
<td>SCOMP with HSCT subgroup</td>
<td>SCOMP with D Bili, GGT, Mg, Phosphorus, Uric Acid, Cholesterol, Triglycerides</td>
<td>Na, K, Cl, CO₂, Glu, BUN, Creat, Ca, Total Protein, Albumin, ALT, AST, ALK, T Bili, Globulin, A/G ratio, D Bili, GGT, Mg, Phosphorus, Uric Acid, Cholesterol, Trigs, calculated glomerular filtration rate</td>
<td></td>
</tr>
</tbody>
</table>
### CHEMISTRY INDIVIDUAL TESTS

<table>
<thead>
<tr>
<th>TEST MNEMONIC</th>
<th>DESCRIPTION</th>
<th>TESTS INCLUDED</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALB</td>
<td>Albumin</td>
<td>Albumin</td>
<td></td>
</tr>
<tr>
<td>ALK</td>
<td>Alkaline Phosphatase</td>
<td>Alkaline Phosphatase</td>
<td></td>
</tr>
<tr>
<td>AST</td>
<td>AST</td>
<td>AST</td>
<td></td>
</tr>
<tr>
<td>BIL</td>
<td>Bilirubin, Total</td>
<td>Bilirubin, Total</td>
<td></td>
</tr>
<tr>
<td>BILT/D</td>
<td>Bilirubin, Total/Direct</td>
<td>Bilirubin, Total/Direct</td>
<td></td>
</tr>
<tr>
<td>BUN</td>
<td>BUN</td>
<td>BUN</td>
<td></td>
</tr>
<tr>
<td>CA</td>
<td>Calcium, Total</td>
<td>Calcium, Total</td>
<td></td>
</tr>
<tr>
<td>SRIC</td>
<td>Calcium, Ionized, Serum</td>
<td>Calcium, Ionized, Serum</td>
<td></td>
</tr>
<tr>
<td>CEA</td>
<td>Carcinoembryonic Antigen</td>
<td>Carcinoembryonic antigen</td>
<td>90 minutes TAT</td>
</tr>
<tr>
<td>CHOL</td>
<td>Cholesterol, Total</td>
<td>Cholesterol, Total</td>
<td></td>
</tr>
<tr>
<td>CK</td>
<td>Creatine Kinase</td>
<td>Creatine Kinase</td>
<td></td>
</tr>
<tr>
<td>CREG</td>
<td>Creatinine</td>
<td>Creatinine, calculated glomerular filtration rate</td>
<td></td>
</tr>
<tr>
<td>GGT</td>
<td>GGT</td>
<td>GGT</td>
<td></td>
</tr>
<tr>
<td>GLU</td>
<td>Glucose</td>
<td>Glucose</td>
<td></td>
</tr>
<tr>
<td>GLUF</td>
<td>Glucose, Fasting</td>
<td>Glucose, Fasting</td>
<td></td>
</tr>
<tr>
<td>HDL</td>
<td>HDL cholesterol</td>
<td>HDL cholesterol</td>
<td></td>
</tr>
<tr>
<td>PGSTAT</td>
<td>Qualitative Serum Pregnancy</td>
<td>Positive or negative pregnancy test</td>
<td></td>
</tr>
<tr>
<td>LD</td>
<td>LD</td>
<td>LD</td>
<td></td>
</tr>
<tr>
<td>LDL</td>
<td>LDL cholesterol</td>
<td>Calculation must be run with Lipid Panel</td>
<td></td>
</tr>
<tr>
<td>MG</td>
<td>Magnesium</td>
<td>Magnesium</td>
<td></td>
</tr>
<tr>
<td>P</td>
<td>Phosphorus</td>
<td>Phosphorus</td>
<td></td>
</tr>
<tr>
<td>PLNH3</td>
<td>Ammonia, Plasma</td>
<td>Ammonia</td>
<td></td>
</tr>
<tr>
<td>K</td>
<td>Potassium</td>
<td>Potassium</td>
<td></td>
</tr>
<tr>
<td>PSA</td>
<td>Total</td>
<td>Total</td>
<td>90 minutes TAT</td>
</tr>
</tbody>
</table>
### ALLIANCE LAB - CHEMISTRY INDIVIDUAL TESTS (cont.)

<table>
<thead>
<tr>
<th>TEST MNEMONIC</th>
<th>DESCRIPTION</th>
<th>TESTS INCLUDED</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>TP</td>
<td>Total Protein</td>
<td>Total Protein</td>
<td></td>
</tr>
<tr>
<td>NA</td>
<td>Sodium</td>
<td>Sodium</td>
<td></td>
</tr>
<tr>
<td>SOCULT</td>
<td>Stool Occult Blood</td>
<td>Stool occult blood</td>
<td></td>
</tr>
<tr>
<td>TRIG</td>
<td>Triglycerides</td>
<td>Triglycerides</td>
<td></td>
</tr>
<tr>
<td>URIC</td>
<td>Uric Acid</td>
<td>Uric Acid</td>
<td></td>
</tr>
</tbody>
</table>

### HEMATOLOGY

<table>
<thead>
<tr>
<th>TEST MNEMONIC</th>
<th>DESCRIPTION</th>
<th>TESTS INCLUDED</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBC</td>
<td>Hemogram</td>
<td>HCT, HB, WBC, RBC, Platelet &amp; RBC indices</td>
<td></td>
</tr>
<tr>
<td>CBANC</td>
<td>Hemogram and Abs Neutrophil Count</td>
<td>HCT, HB, WBC, RBC, Platelet, RBC indices &amp; Abs Neutrophil count</td>
<td></td>
</tr>
<tr>
<td>CBD</td>
<td>CBC w/ Diff/Smear Eval</td>
<td>HCT, HB, WBC, RBC, Platelets &amp; RBC indices w/ Diff</td>
<td></td>
</tr>
<tr>
<td>HBHCT</td>
<td>Hemoglobin and Hematocrit</td>
<td>Hemoglobin, Hematocrit</td>
<td></td>
</tr>
<tr>
<td>PLTG</td>
<td>Platelet</td>
<td>Platelet</td>
<td></td>
</tr>
<tr>
<td>RETIC</td>
<td>Reticulocyte</td>
<td>Reticulocyte</td>
<td></td>
</tr>
<tr>
<td>ESR</td>
<td>Erythrocyte Sedimentation Rate</td>
<td>90 minutes TAT</td>
<td></td>
</tr>
</tbody>
</table>
### ALLIANCE LAB - COAGULATION

<table>
<thead>
<tr>
<th>TEST MNEMONIC</th>
<th>DESCRIPTION</th>
<th>TESTS INCLUDED</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRO</td>
<td>Prothrombin Time</td>
<td>Prothrombin Time</td>
<td></td>
</tr>
<tr>
<td>TT</td>
<td>Thrombin time</td>
<td>Thrombin Time</td>
<td></td>
</tr>
<tr>
<td>PTT</td>
<td>Activated Partial Thromboplastin Time</td>
<td>Activated Partial Thromboplastin Time</td>
<td></td>
</tr>
<tr>
<td>FIBCL</td>
<td>Fibrinogen</td>
<td>Fibrinogen</td>
<td></td>
</tr>
<tr>
<td>DDI</td>
<td>D-Dimer</td>
<td>D-Dimer</td>
<td></td>
</tr>
</tbody>
</table>

### URINES

<table>
<thead>
<tr>
<th>TEST MNEMONIC</th>
<th>DESCRIPTION</th>
<th>TESTS INCLUDED</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>UAWK</td>
<td>Urinalysis, workup</td>
<td>Urine dipstick tests, microscopic performed if macroscopic abnormal</td>
<td></td>
</tr>
<tr>
<td>UAC</td>
<td>Urinalysis, complete</td>
<td>Urine dipstick tests, microscopic</td>
<td></td>
</tr>
<tr>
<td>UCLEAR</td>
<td>Creatinine clearance</td>
<td>Urine creatinine</td>
<td>Serum creatinine level required</td>
</tr>
<tr>
<td>UTP</td>
<td>Protein</td>
<td>Urine total protein</td>
<td></td>
</tr>
<tr>
<td>UPG</td>
<td>Urine Pregnancy</td>
<td></td>
<td>Positive or negative pregnancy test</td>
</tr>
<tr>
<td>UPCRAT</td>
<td>Protein/Creatinine Ratio</td>
<td>Urine Protein, Urine Creatinine &amp; Calculated Ratio</td>
<td></td>
</tr>
</tbody>
</table>

### CEREBRAL SPINAL FLUID

<table>
<thead>
<tr>
<th>TEST MNEMONIC</th>
<th>DESCRIPTION</th>
<th>TESTS INCLUDED</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCCNT</td>
<td>Cell Count</td>
<td>WBC, RBC</td>
<td></td>
</tr>
<tr>
<td>CGLU</td>
<td>Glucose</td>
<td>Glucose</td>
<td></td>
</tr>
<tr>
<td>CTP</td>
<td>Total Protein</td>
<td>Total Protein</td>
<td></td>
</tr>
<tr>
<td>CCFUGE</td>
<td>CSF Cell evaluation by Hematopathologist</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# BLOOD GASES

<table>
<thead>
<tr>
<th>TEST MNEMONIC</th>
<th>DESCRIPTION</th>
<th>TESTS INCLUDED</th>
<th>STAT TAT</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AG</td>
<td>Arterial blood gas</td>
<td>pH, pCO₂, pO₂, HCO₃</td>
<td>30 minutes</td>
<td>COOX performed at HMC</td>
</tr>
<tr>
<td>VG</td>
<td>Venous blood gas</td>
<td>pH, pCO₂, pO₂, HCO₃</td>
<td>30 minutes</td>
<td>COOX performed at HMC</td>
</tr>
</tbody>
</table>
## Laboratory Critical Results

<table>
<thead>
<tr>
<th>Serum or Plasma</th>
<th>Less than</th>
<th>Greater than</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Na</td>
<td>120</td>
<td>160</td>
<td>mEq/L</td>
</tr>
<tr>
<td>K</td>
<td>3.0</td>
<td>6.0</td>
<td>mEq/L</td>
</tr>
<tr>
<td>HCO₃/CO₂</td>
<td>10</td>
<td>40</td>
<td>mEq/L</td>
</tr>
<tr>
<td>Glucose</td>
<td>50</td>
<td>500</td>
<td>mg/dl</td>
</tr>
<tr>
<td>Ca</td>
<td>6.0</td>
<td>13.0</td>
<td>mg/dl</td>
</tr>
<tr>
<td>Phosphate</td>
<td>1.0</td>
<td>none</td>
<td>mg/dl</td>
</tr>
<tr>
<td>Mg</td>
<td>1.2</td>
<td>4.7</td>
<td>mg/dl</td>
</tr>
<tr>
<td>Ionized Calcium, Serum &amp; Plasma</td>
<td>0.78</td>
<td>1.58</td>
<td>mmol/L</td>
</tr>
<tr>
<td>CSF glucose</td>
<td>20</td>
<td>N/A</td>
<td>mg/dl</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Arterial Blood Gases</th>
<th>Less than</th>
<th>Greater than</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>7.20</td>
<td>7.58</td>
<td></td>
</tr>
<tr>
<td>pCO₂</td>
<td>9</td>
<td>65</td>
<td>mmHg</td>
</tr>
<tr>
<td>pO₂</td>
<td>40</td>
<td>N/A</td>
<td>mmHg</td>
</tr>
<tr>
<td>HCO₃</td>
<td>10</td>
<td>40</td>
<td>mEq/L</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hematology</th>
<th>Less than</th>
<th>Greater than</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Absolute neutrophils</td>
<td>0.5</td>
<td>N/A</td>
<td>x 10⁹/uL</td>
</tr>
<tr>
<td>Hematocrit</td>
<td>20</td>
<td>none</td>
<td>%</td>
</tr>
<tr>
<td>Platelet</td>
<td>20</td>
<td>1000</td>
<td>x 10⁹/uL</td>
</tr>
<tr>
<td>Hemoglobin</td>
<td>6.0</td>
<td>none</td>
<td>mg/dl</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Coagulation</th>
<th>Less than</th>
<th>Greater than</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prothrombin Time</td>
<td>N/A</td>
<td>5</td>
<td>INR</td>
</tr>
<tr>
<td>aPTT</td>
<td>N/A</td>
<td>120</td>
<td>Sec</td>
</tr>
<tr>
<td>Fibrinogen</td>
<td>100</td>
<td>N/A</td>
<td>mg/dL</td>
</tr>
</tbody>
</table>

*Critical ANC: The first time that a patient is seen, the critical value applies, and this count must be called to the appropriate individual on the 3rd, 4th, 5th, 6th floor or Apheresis.

- All patients are monitored, and careful attention paid to previous counts. If there is a clinically significant fall in platelets, as determined by a Medical Laboratory Scientist/Technician trained in Hematology, the appropriate nurse is called.

- If a patient’s ANC has remained stable but is at or below the critical value (0.5 x 10⁹/uL) the result does not need to be called.
### ALLIANCE LAB REFERENCE RANGES

#### HEMATOLOGY

**WBC** Units: **THOU / uL**

<table>
<thead>
<tr>
<th>Female/Male</th>
<th>Age</th>
<th>Range</th>
<th>Age</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6 m – 1 y</td>
<td>6.0 – 17.0</td>
<td>6 m – 1 y</td>
<td>6.0 – 17.0</td>
</tr>
<tr>
<td></td>
<td>2 y – 3 y</td>
<td>6.0 – 15.5</td>
<td>2 y – 5 y</td>
<td>5.5 – 14.5</td>
</tr>
<tr>
<td></td>
<td>6 y – 11 y</td>
<td>4.5 – 13.5</td>
<td>6 y – 11 y</td>
<td>4.5 – 13.5</td>
</tr>
<tr>
<td></td>
<td>≥ 12 y</td>
<td>4.3 – 10.0</td>
<td>18 y –</td>
<td>4.3 – 10.0</td>
</tr>
</tbody>
</table>

**MCH** Units: **pg**

<table>
<thead>
<tr>
<th>Female/Male</th>
<th>Age</th>
<th>Range</th>
<th>Age</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6 m – 1 y</td>
<td>23.0 – 31.0</td>
<td>6 m – 1 y</td>
<td>23.0 – 31.0</td>
</tr>
<tr>
<td></td>
<td>2 y – 5 y</td>
<td>24.0 – 30.0</td>
<td>2 y – 5 y</td>
<td>24.0 – 30.0</td>
</tr>
<tr>
<td></td>
<td>6 y – 11 y</td>
<td>25.0 – 33.0</td>
<td>6 y – 11 y</td>
<td>25.0 – 33.0</td>
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<tr>
<td></td>
<td>≥ 12 y</td>
<td>25.0 – 35.0</td>
<td>≥ 12 y</td>
<td>25.0 – 35.0</td>
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<tr>
<td></td>
<td>18 y –</td>
<td>27.3 – 33.6</td>
<td>18 y –</td>
<td>27.3 – 33.6</td>
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</tbody>
</table>

**RBC** Units: **mil / uL**

<table>
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<tr>
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<th>Age</th>
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<th>Age</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>3.70 – 5.30</td>
<td>6 m – 1 y</td>
<td>3.70 – 5.30</td>
</tr>
<tr>
<td></td>
<td>2 y – 5 y</td>
<td>3.90 – 5.30</td>
<td>2 y – 5 y</td>
<td>3.90 – 5.30</td>
</tr>
<tr>
<td></td>
<td>6 y – 11 y</td>
<td>4.00 – 5.20</td>
<td>6 y – 11 y</td>
<td>4.00 – 5.20</td>
</tr>
<tr>
<td></td>
<td>≥ 12 y</td>
<td>4.10 – 5.10</td>
<td>≥ 12 y</td>
<td>4.10 – 5.10</td>
</tr>
</tbody>
</table>

**MCHC** Units: **g / dL**

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<th>Age</th>
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</thead>
<tbody>
<tr>
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<td>3.70 – 5.30</td>
<td>6 m – 1 y</td>
<td>3.70 – 5.30</td>
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<tr>
<td></td>
<td>2 y – 5 y</td>
<td>3.90 – 5.30</td>
<td>2 y – 5 y</td>
<td>3.90 – 5.30</td>
</tr>
<tr>
<td></td>
<td>6 y – 11 y</td>
<td>4.00 – 5.20</td>
<td>6 y – 11 y</td>
<td>4.00 – 5.20</td>
</tr>
<tr>
<td></td>
<td>≥ 12 y</td>
<td>4.10 – 5.10</td>
<td>≥ 12 y</td>
<td>4.10 – 5.10</td>
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</tbody>
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**Hemoglobin** Units: **g / dL**

<table>
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<th>Age</th>
<th>Range</th>
<th>Age</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6 m – 1 y</td>
<td>10.5 – 13.5</td>
<td>6 m – 1 y</td>
<td>10.5 – 13.5</td>
</tr>
<tr>
<td></td>
<td>2 y – 5 y</td>
<td>11.5 – 13.5</td>
<td>2 y – 5 y</td>
<td>11.5 – 13.5</td>
</tr>
<tr>
<td></td>
<td>6 y – 11 y</td>
<td>11.5 – 15.5</td>
<td>6 y – 11 y</td>
<td>11.5 – 15.5</td>
</tr>
<tr>
<td></td>
<td>≥ 12 y</td>
<td>12.0 – 15.5</td>
<td>≥ 12 y</td>
<td>12.0 – 15.5</td>
</tr>
<tr>
<td></td>
<td>18 y –</td>
<td>11.5 – 15.5</td>
<td>18 y –</td>
<td>11.5 – 15.5</td>
</tr>
</tbody>
</table>

**Hematocrit** Units: **%**

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<thead>
<tr>
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<th>Age</th>
<th>Range</th>
<th>Age</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6 m – 1 y</td>
<td>33 – 39</td>
<td>6 m – 1 y</td>
<td>33 – 39</td>
</tr>
<tr>
<td></td>
<td>2 y – 5 y</td>
<td>34 – 40</td>
<td>2 y – 5 y</td>
<td>34 – 40</td>
</tr>
<tr>
<td></td>
<td>6 y – 11 y</td>
<td>35 – 45</td>
<td>6 y – 11 y</td>
<td>35 – 45</td>
</tr>
<tr>
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<td>≥ 12 y</td>
<td>36 – 45</td>
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<td>36 – 45</td>
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<tr>
<td></td>
<td>18 y –</td>
<td>36 – 45</td>
<td>18 y –</td>
<td>36 – 45</td>
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</tbody>
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**MCV** Units: **fL**

<table>
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<th>Age</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6 m – 1 y</td>
<td>70 – 86</td>
</tr>
<tr>
<td></td>
<td>2 y – 5 y</td>
<td>75 – 87</td>
</tr>
<tr>
<td></td>
<td>6 y – 11 y</td>
<td>77 – 95</td>
</tr>
<tr>
<td></td>
<td>≥ 12 y</td>
<td>9.4 – 12.3</td>
</tr>
</tbody>
</table>

**RDW-CV** Units: **%**

<table>
<thead>
<tr>
<th>Female/Male</th>
<th>Age</th>
<th>Range</th>
<th>Age</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>≥ 6 m</td>
<td>11.6 – 14.4</td>
<td>≥ 6 m</td>
<td>11.6 – 14.4</td>
</tr>
</tbody>
</table>

**MPV** Units: **fL**

<table>
<thead>
<tr>
<th>Female/Male</th>
<th>Age</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>9.4 – 12.3</td>
<td>9.4 – 12.3</td>
</tr>
</tbody>
</table>

(Continued)
ALLIANCE LAB REFERENCE RANGES

HEMATOLOGY (Continued)

**Neutrophils** Units: THOU / uL

<table>
<thead>
<tr>
<th>Female/Male</th>
<th>Age</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6m – 11m</td>
<td>1.50 – 5.00</td>
</tr>
<tr>
<td></td>
<td>1y – 3y</td>
<td>1.50 – 5.00</td>
</tr>
<tr>
<td></td>
<td>4y – 9y</td>
<td>1.50 – 7.50</td>
</tr>
<tr>
<td></td>
<td>10y – 11y</td>
<td>1.80 – 7.00</td>
</tr>
<tr>
<td></td>
<td>12y –</td>
<td>1.80 – 7.00</td>
</tr>
</tbody>
</table>

**Eosinophils** Units: THOU / uL

<table>
<thead>
<tr>
<th>Female/Male</th>
<th>Age</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6m – 11m</td>
<td>0 – 0.80</td>
</tr>
<tr>
<td></td>
<td>1y – 3y</td>
<td>0 – 0.50</td>
</tr>
<tr>
<td></td>
<td>4y – 9y</td>
<td>0 – 0.50</td>
</tr>
<tr>
<td></td>
<td>10y – 11y</td>
<td>0 – 0.50</td>
</tr>
<tr>
<td></td>
<td>12y –</td>
<td>0 – 0.50</td>
</tr>
</tbody>
</table>

**Lymphocytes** Units: THOU / uL

<table>
<thead>
<tr>
<th>Female/Male</th>
<th>Age</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6m – 11m</td>
<td>3.00 – 7.00</td>
</tr>
<tr>
<td></td>
<td>1y – 3y</td>
<td>1.50 – 8.50</td>
</tr>
<tr>
<td></td>
<td>4y – 9y</td>
<td>1.50 – 5.00</td>
</tr>
<tr>
<td></td>
<td>10y – 11y</td>
<td>1.20 – 5.00</td>
</tr>
<tr>
<td></td>
<td>12y –</td>
<td>1.00 – 4.80</td>
</tr>
</tbody>
</table>

**Basophils** Units: THOU / uL

<table>
<thead>
<tr>
<th>Female/Male</th>
<th>Age</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6m – 11m</td>
<td>0 – 0.20</td>
</tr>
<tr>
<td></td>
<td>1y – 3y</td>
<td>0 – 0.20</td>
</tr>
<tr>
<td></td>
<td>4y – 9y</td>
<td>0 – 0.20</td>
</tr>
<tr>
<td></td>
<td>10y – 11y</td>
<td>0 – 0.20</td>
</tr>
<tr>
<td></td>
<td>12y –</td>
<td>0 – 0.20</td>
</tr>
</tbody>
</table>

**Monocytes** Units: THOU / uL

<table>
<thead>
<tr>
<th>Female/Male</th>
<th>Age</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6m – 11m</td>
<td>0 – 0.60</td>
</tr>
<tr>
<td></td>
<td>1y – 3y</td>
<td>0 – 0.80</td>
</tr>
<tr>
<td></td>
<td>4y – 9y</td>
<td>0 – 0.80</td>
</tr>
<tr>
<td></td>
<td>10y – 11y</td>
<td>0 – 0.80</td>
</tr>
<tr>
<td></td>
<td>12y –</td>
<td>0 – 0.80</td>
</tr>
</tbody>
</table>

CSF Cell Count Units: /µL

- Red Blood Cells 0
- Mononuclear Cells 0 - 5

CSF Differential Units: %

- Neutrophils 2 ± 4
- Lymphocytes 60 ± 20
- Monocytes 30 ± 15

**Erythrocyte Sedimentation Rate (ESR)** Units: mm / hr

<table>
<thead>
<tr>
<th>Female</th>
<th>Age</th>
<th>Range</th>
<th>Male</th>
<th>Age</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6m – 11y</td>
<td>0 – 10</td>
<td>6m-11y</td>
<td>0 – 10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12y –</td>
<td>0 – 20</td>
<td>12y –</td>
<td>0 – 15</td>
<td></td>
</tr>
</tbody>
</table>

**Differentials** Units: %

- Neutrophils Adult 42 – 70
- Neutrophils Child (2y-9y) 35 – 75
- Lymphocytes Adult 23 – 48
- Lymphocytes Child (2y-9y) 23 – 75
- Monocytes 0 – 8
- Eosinophils 0 – 5
- Basophils 0 – 2
- Immature Granulocytes 0 – 1
- Blast 0

**COAGULATION**

<table>
<thead>
<tr>
<th>TEST</th>
<th>Reference Range</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prothrombin time (PT)</td>
<td>10.7-15.6</td>
<td>Seconds</td>
</tr>
<tr>
<td>INR</td>
<td>0.8 - 1.3</td>
<td></td>
</tr>
<tr>
<td>Activated Partial Thromboplastin Time (APTT)</td>
<td>22-35</td>
<td>Seconds</td>
</tr>
<tr>
<td>Fibrinogen</td>
<td>150-450</td>
<td>mg/dL</td>
</tr>
<tr>
<td>Thrombin Time</td>
<td>16-25</td>
<td>Seconds</td>
</tr>
<tr>
<td>D-Dimer</td>
<td>0-0.59</td>
<td>µg/mL FEU</td>
</tr>
</tbody>
</table>
### ALLIANCE LAB REFERENCE RANGES: CHEMISTRY

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Reference Range</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Na (Sodium)</td>
<td>135-145</td>
<td>mEq/L</td>
</tr>
<tr>
<td>K (Potassium)</td>
<td>3.6-5.2</td>
<td>mEq/L</td>
</tr>
<tr>
<td>Cl (Chloride)</td>
<td>98-108</td>
<td>mEq/L</td>
</tr>
<tr>
<td>CO₂ (Bicarbonate)</td>
<td>22-32</td>
<td>mEq/L</td>
</tr>
<tr>
<td>Ion Gap</td>
<td>4-12</td>
<td></td>
</tr>
<tr>
<td>Creatine Kinase</td>
<td>Male 62-325 Female 43-274</td>
<td>U/L</td>
</tr>
<tr>
<td>Creatinine</td>
<td>Female &gt;18yrs 0.38-1.02 Male &gt;18 yrs 0.51-1.18 Male or Female &lt;18 yrs 0.20-1.10</td>
<td>mg/dL</td>
</tr>
<tr>
<td>BUN</td>
<td>8-21</td>
<td>mg/dL</td>
</tr>
<tr>
<td>Glucose</td>
<td>62-125</td>
<td>mg/dL</td>
</tr>
<tr>
<td>Ca (Calcium)</td>
<td>8.9-10.2</td>
<td>mg/dL</td>
</tr>
<tr>
<td>P (Phosphorus)</td>
<td>2.5-4.5 Child &lt;12 years: 4.5-6.0</td>
<td>mg/dL</td>
</tr>
<tr>
<td>Albumin</td>
<td>3.5-5.2</td>
<td>g/dL</td>
</tr>
<tr>
<td>Mg (Magnesium)</td>
<td>1.8-2.4</td>
<td>mg/dL</td>
</tr>
<tr>
<td>Total Bilirubin</td>
<td>0.2-1.3</td>
<td>mg/dL</td>
</tr>
<tr>
<td>Direct Bilirubin</td>
<td>0.0-0.3</td>
<td>mg/dL</td>
</tr>
<tr>
<td>AST</td>
<td>9-38</td>
<td>U/L</td>
</tr>
<tr>
<td>ALT</td>
<td>Male Age 0-49 Female 7-33 10-64 10-48</td>
<td>U/L</td>
</tr>
<tr>
<td>CK (total)</td>
<td>Male: 62-325 Female: 43-274</td>
<td>U/L</td>
</tr>
<tr>
<td>GGT</td>
<td>0-55</td>
<td>U/L</td>
</tr>
<tr>
<td>LD</td>
<td>&lt;210</td>
<td>U/L</td>
</tr>
<tr>
<td>Total Protein</td>
<td>6.0-8.2</td>
<td>g/dL</td>
</tr>
<tr>
<td>Uric Acid</td>
<td>Male 3.9-7.6 Female 2.6-6.8</td>
<td>mg/dL</td>
</tr>
<tr>
<td>Cholesterol</td>
<td>Desirable &lt;200 Borderline 200-239 High &gt;239</td>
<td>mg/dL</td>
</tr>
<tr>
<td>HDL-Cholesterol</td>
<td>&gt;39 Desirable &gt;59 Acceptable 40-59 Low &lt;40</td>
<td>mg/dL</td>
</tr>
<tr>
<td>Triglyceride</td>
<td>Desirable &lt;150 Borderline 150-199 High 200-499 Very High &gt;500</td>
<td>mg/dL</td>
</tr>
<tr>
<td>Ammonia</td>
<td>27-90</td>
<td>µg/dL</td>
</tr>
<tr>
<td>Ionized Calcium, Serum &amp; Plasma</td>
<td>≥ 1 year 1.18-1.38 &lt; 1 year 1.16-1.45</td>
<td>mmol/L</td>
</tr>
<tr>
<td>Prostate Specific Antigen</td>
<td>Male: 0.00-4.00</td>
<td>ng/mL</td>
</tr>
<tr>
<td>CEA</td>
<td>0.0-5.0</td>
<td>ng/mL</td>
</tr>
<tr>
<td>CSF Glucose</td>
<td>40-80</td>
<td>mg/dL</td>
</tr>
<tr>
<td>CSF Protein</td>
<td>15-45</td>
<td>mg/dL</td>
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ALLIANCE LAB REFERENCE RANGES

ALKALINE PHOSPHATASE

<table>
<thead>
<tr>
<th>AGE</th>
<th>MALE</th>
<th>FEMALE</th>
<th>UNITS</th>
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<tbody>
<tr>
<td>75</td>
<td>52-227</td>
<td>49-199</td>
<td>U/L</td>
</tr>
<tr>
<td>65</td>
<td>36-161</td>
<td>38-172</td>
<td>U/L</td>
</tr>
<tr>
<td>55</td>
<td>37-159</td>
<td>31-132</td>
<td>U/L</td>
</tr>
<tr>
<td>45</td>
<td>39-139</td>
<td>34-121</td>
<td>U/L</td>
</tr>
<tr>
<td>35</td>
<td>36-122</td>
<td>25-112</td>
<td>U/L</td>
</tr>
<tr>
<td>25</td>
<td>35-109</td>
<td>25-100</td>
<td>U/L</td>
</tr>
<tr>
<td>18</td>
<td>42-136</td>
<td>26-98</td>
<td>U/L</td>
</tr>
<tr>
<td>14</td>
<td>72-400</td>
<td>43-226</td>
<td>U/L</td>
</tr>
<tr>
<td>12</td>
<td>119-426</td>
<td>89-285</td>
<td>U/L</td>
</tr>
<tr>
<td>10</td>
<td>115-324</td>
<td>132-366</td>
<td>U/L</td>
</tr>
<tr>
<td>0</td>
<td>115-324</td>
<td>111-281</td>
<td>U/L</td>
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</table>

BLOOD GASES

<table>
<thead>
<tr>
<th>Blood gas, Arterial (Adult)</th>
<th>Reference Range</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>7.35-7.45</td>
<td></td>
</tr>
<tr>
<td>pCO₂</td>
<td>33-48</td>
<td>mmHg</td>
</tr>
<tr>
<td>pO₂</td>
<td>80-104</td>
<td>mmHg</td>
</tr>
<tr>
<td>Bicarbonate</td>
<td>24-31</td>
<td>mEq/L</td>
</tr>
<tr>
<td>O₂ Saturation</td>
<td>95-99</td>
<td>%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Blood gas, Venous (Adult)</th>
<th>Reference Range</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>7.32-7.40</td>
<td></td>
</tr>
<tr>
<td>pCO₂</td>
<td>42-50</td>
<td>mmHg</td>
</tr>
<tr>
<td>pO₂</td>
<td>35-40</td>
<td>mmHg</td>
</tr>
<tr>
<td>Bicarbonate</td>
<td>23-27</td>
<td>mEq/L</td>
</tr>
<tr>
<td>O₂ Saturation</td>
<td>70-75</td>
<td>%</td>
</tr>
</tbody>
</table>
### ALLIANCE LAB REFERENCE RANGES

#### URINALYSIS

<table>
<thead>
<tr>
<th>Test (Dipstick)</th>
<th>Reference Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>5.0-8.0</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.005-1.030</td>
</tr>
<tr>
<td>Protein</td>
<td>negative</td>
</tr>
<tr>
<td>Glucose</td>
<td>negative</td>
</tr>
<tr>
<td>Ketone</td>
<td>negative</td>
</tr>
<tr>
<td>Bilirubin</td>
<td>negative</td>
</tr>
<tr>
<td>Blood</td>
<td>negative</td>
</tr>
<tr>
<td>Nitrite</td>
<td>negative</td>
</tr>
<tr>
<td>Urobilinogen</td>
<td>0.1-1.9 Ehrlich units</td>
</tr>
<tr>
<td>Leucocyte esterase</td>
<td>negative</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test (Microscopic)</th>
<th>Reference Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>WBC/hpf</td>
<td>0-5</td>
</tr>
<tr>
<td>RBC/hpf</td>
<td>0-2</td>
</tr>
<tr>
<td>Casts/lpf</td>
<td>0</td>
</tr>
<tr>
<td>Crystals/lpf</td>
<td>0</td>
</tr>
<tr>
<td>Bacteria/hpf</td>
<td>0</td>
</tr>
<tr>
<td>Squamous epithelial cells/lpf</td>
<td>0-5 (neg)</td>
</tr>
<tr>
<td>Renal/transitional epithelial cells/hpf</td>
<td>&lt;3 (neg)</td>
</tr>
</tbody>
</table>

#### Analyte

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Reference Range</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urine Total Protein</td>
<td>0-14 (random specimen) 0.050-0.080 (24-hour specimen)</td>
<td>mg/dL g/24hour</td>
</tr>
<tr>
<td>Urine Creatinine</td>
<td>Child 0-9 years 700 - 1800 Male &gt; 9 years 1000 - 2000 Female &gt; 9 Years 700 - 1800</td>
<td>mg/24 hours</td>
</tr>
<tr>
<td>Creatinine Clearance</td>
<td>Newborn 40-60 Male 75-120 Female 65-105</td>
<td>mL/min/m² mL/min mL/min</td>
</tr>
</tbody>
</table>
CD34 ASSAY

**Lab**  Cellular Therapy, 1100 Eastlake Avenue E, E1-419
**Request Form**  SCCA CTL Test Requisition/Billing form – for Peripheral Blood
**Leucocytes (PBL)**  For SCCA Ambulatory Clinic, CPOE requisition will be generated for those lab tests requiring a requisition form.
**Phone**  606-1200
**Availability**  M – F Lab Hours 7am – 8pm
**Processing Hours**  7am – 5pm
**Weekends & Holidays**  Lab Hours 9am – 6pm
**Processing Hours**  9am – 3pm
**Turnaround Time**  Three hours after sample received or lab start-up

**Specimen**  Peripheral Blood
**Volume**  2 - 4 mL
**Pediatric Volume**  2 - 4 mL
**Container**  EDTA (2.0 mL purple top)
**Collection**  Routine venipuncture or line draw
**Special Handling**  Room temperature, label as STAT

**Causes for Rejection**  Misidentified specimens and requisitions, specimen QNS, improperly stored specimen, specimen clotted

**Reference Ranges**  No normal values established for mobilized specimens
**After Hours**  Draw a fresh specimen in the morning (no after-hours specimen handling).
BLOOD GAS, ARTERIAL

Related Terms
Arterial blood gas, Blood gas, ABG, Gases

Panel includes
Measured parameters include pH, pCO₂ and pO₂;
Calculated parameters include HCO₃, base excess, and oxygen saturation

Lab
Alliance Lab, Room G1-500

Request Form
SCCA Clinical Lab Request: fill out completely, including ICD codes
Pulmonary Function Testing (PFT) staff will print a CPOE requisition to accompany the specimen.

Phone
606-1088

Testing Frequency
Daily

Availability
STAT or routine

Specimen
Arterial Blood

Volume
3mL; minimum volume is 300 µL (0.3mL) in a tuberculin syringe

Pediatric Volume
See Capillary Blood Gases

Container
Blood should be drawn into gas-tight plastic syringe using 1000-units sodium or lithium heparin. Other anticoagulants are not acceptable.

Patient Preparation
Acknowledging that patients requiring blood gas analysis may be unstable, the patient should be as physiologically stable as possible when the arterial blood specimen is collected. Ideally, a patient’s ventilation should be stable during specimen collection. Therefore, a patient breathing spontaneously should be at rest at least 5 minutes or, if possible, for as long as it takes for the ventilation pattern to become stable.

Collection
Collect samples in airtight plastic syringe. Completely wet the inside of the barrel of the syringe. The sodium heparin acts as an anticoagulant. Place a needle on the syringe and expel the sodium heparin to fill the dead space of the syringe and needle. Draw samples anaerobically, without introducing air bubbles in the syringe, and cap the syringe. If bubbles develop during sample collection, remove them immediately.
Special Instructions
Requisition must indicate time drawn, type of sample (arterial, venous, or capillary), FiO₂ and ventilatory support type, and patient temperature. Notifying the lab of a pending sample is helpful. Deliver to the lab immediately following collection.

Causes for Rejection
Large air bubbles will cause all values to be erroneous. The magnitude of error will be determined by the size of the air bubble, sample and sample air bubble interface, length of time bubble was in contact with sample before analysis and the gradient between sample gas tensions and room air gas tensions. Small bubbles, if immediately expelled, will generally not cause any significant error. Samples with large (more than 0.2 mL) bubbles should be discarded and a new, anaerobic sample obtained. Needle attached, sample clotted, specimen received more than 1 hour after collection.

Reference Ranges/Critical Values

<table>
<thead>
<tr>
<th></th>
<th>Reference Range</th>
<th>Critical Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>7.35 – 7.45</td>
<td>&lt;7.20 or &gt;7.58</td>
</tr>
<tr>
<td>pCO₂</td>
<td>33 – 48 mm Hg</td>
<td>&lt;9 or &gt;65 mm Hg</td>
</tr>
<tr>
<td>pO₂</td>
<td>80 – 104 mm Hg</td>
<td>&lt;40 mm Hg (&lt;20 mm Hg venous)</td>
</tr>
<tr>
<td>HCO₃</td>
<td>24-31 mEq/L</td>
<td>&lt;10 or &gt;40 mEq/L</td>
</tr>
<tr>
<td>O₂ Saturation</td>
<td>95-99%</td>
<td></td>
</tr>
</tbody>
</table>
BASIC METABOLIC PANEL

Related Terms  
BMP

Panel includes  
Sodium, potassium, chloride, carbon dioxide, glucose, urea nitrogen (BUN), creatinine, calcium, calculated glomerular filtration rate

Ion Gap is calculated:  \( \text{Gap} = \text{Na} - (\text{Cl} + \text{CO}_2) \)

Glomerular filtration rate (GFR) is calculated by the Modification of Diet in Renal Disease (MDRD) Study equation, which is reasonably accurate in non-hospitalized patients with chronic kidney disease but tends to underestimate GFR in other populations. It is inaccurate in patients with rapidly changing renal function. See NEJM 2006;354:2473.

Lab  
Alliance Lab, Room G1-500
Immunotherapy Lab, Room G6-097
GI Oncology Lab, Room G7-220

Request Form  
SCCA Clinical Lab Request: fill out completely, including ICD codes
CPOE orders will be interfaced to Sunquest upon order activation in ORCA.

Phone  
606-1088

Testing Frequency  
Daily

Availability  
STAT or routine

Specimen  
Plasma or Serum

Volume  
2 mL

Pediatric Volume  
Pediatric capillary collection: 500 µL (0.5 mL) serum collected in microtube or "bullet" tube

Container  
5 mL lime top PST, green top, red top, gold top SST or orange top RST

Collection  
Routine venipuncture or line draw

Causes for Rejection  
See individual tests

Reference Range  
See individual tests

Critical Values  
See individual tests
# COMPREHENSIVE METABOLIC PANEL WITH HSCT SUBGROUP

**Panel includes**

- Sodium, potassium, chloride, carbon dioxide, calculation for Ion Gap, glucose, urea nitrogen (BUN), calcium, creatinine, alanine aminotransferase (ALT), alkaline phosphatase (ALP), aspartate aminotransferase (AST), bilirubin (total), total protein, albumin, calculation for globulin and albumin/globulin ratio, calculated glomerular filtration rate

Ion Gap = Na – (Cl + CO₂)

Globulin = TP – Alb

Albumin/Globulin Ratio = Alb/Globulin

Glomerular filtration rate (GFR) is calculated by the Modification of Diet in Renal Disease (MDRD) Study equation, which is reasonably accurate in non-hospitalized patients with chronic kidney disease but tends to underestimate GFR in other populations. It is inaccurate in patients with rapidly changing renal function. See *NEJM* 2006;354:2473.

**HSCT subgroup** *(Can be ordered individually or as group)*

- Magnesium, phosphorus, uric acid, bilirubin (direct), gamma glutamyl transferase (GGT), lactate dehydrogenase (LD), cholesterol, triglycerides

**Lab**

- Alliance Lab, Room G1-500
- Immunotherapy Lab, Room G6-097
- GI Oncology Lab, Room G7-220

**Request Form**

SCCA Clinical Lab Request: fill out completely, including ICD codes

CPOE orders will be interfaced to Sunquest upon order activation in ORCA.

**Phone**

606-1088

**Testing Frequency**

Daily

**Availability**

Routine

**Specimen**

Plasma or Serum

**Volume**

2 mL

**Pediatric volume**

Pediatric capillary collection: 500 µL serum collected in microtube or "bullet" tube

(Continued)
Comprehensive Metabolic Panel with HSCT Subgroup, continued

<table>
<thead>
<tr>
<th><strong>Container</strong></th>
<th>5 mL lime top PST, green top, red top, gold top SST or orange top RST tube</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Collection</strong></td>
<td>Routine venipuncture or line draw</td>
</tr>
<tr>
<td><strong>Causes for Rejection</strong></td>
<td>See individual tests</td>
</tr>
<tr>
<td><strong>Reference Ranges</strong></td>
<td>See individual tests</td>
</tr>
<tr>
<td><strong>Critical Values</strong></td>
<td>See individual tests</td>
</tr>
</tbody>
</table>
SCCA COMPREHENSIVE METABOLIC PANEL
With Calculations for Globulin and Albumin/Globulin Ratio

**Related Terms**
- SCOMP

**Panel includes**
- Sodium, potassium, chloride, carbon dioxide, calculation for Ion Gap, glucose, urea nitrogen (BUN), calcium, creatinine, alanine aminotransferase (ALT), alkaline phosphatase (ALP), aspartate aminotransferase (AST), bilirubin (total), total protein, albumin, calculation for globulin and albumin/globulin ratio, calculated glomerular filtration rate

\[
\text{Ion Gap} = \text{Na} - (\text{Cl} + \text{CO}_2)
\]

\[
\text{Globulin} = \text{TP} - \text{Alb}
\]

\[
\text{Albumin/Globulin Ratio} = \frac{\text{Alb}}{\text{Globulin}}
\]

Glomerular filtration rate (GFR) is calculated by the Modification of Diet in Renal Disease (MDRD) Study equation, which is reasonably accurate in non-hospitalized patients with chronic kidney disease but tends to underestimate GFR in other populations. It is inaccurate in patients with rapidly changing renal function. See *NEJM* 2006;354:2473

**Lab**
- Alliance Lab, Room G1-500
- Immunotherapy Lab, Room G6-097
- GI Oncology Lab, Room G7-220

**Request Form**
- SCCA Clinical Lab Request: fill out completely, including ICD codes
- CPOE orders will be interfaced to Sunquest upon order activation in ORCA.

**Phone**
- 606-1088

**Testing Frequency**
- Daily

**Availability**
- STAT or routine

**Specimen**
- Plasma or Serum

**Volume**
- 1 mL

**Pediatric Volume**
- Pediatric capillary collection: 500 µL serum collected in microtube or "bullet" tube

**Container**
- 5 mL lime top PST, green top, red top, gold top SST or orange top RST tube

**Collection**
- Routine venipuncture or line draw

**Causes for Rejection**
- See individual tests

**Reference Ranges**
- See individual tests

**Critical Values**
- See individual tests
# ELECTROLYTES

<table>
<thead>
<tr>
<th>Related Terms</th>
<th>Lytes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Panel includes</strong></td>
<td>Sodium, potassium, chloride, CO₂</td>
</tr>
<tr>
<td><strong>Ion Gap is calculated:</strong></td>
<td>Gap = Na – (Cl + CO₂)</td>
</tr>
<tr>
<td><strong>Lab</strong></td>
<td>Alliance Lab, Room G1-500</td>
</tr>
<tr>
<td></td>
<td>Immunotherapy Lab, Room G6-097</td>
</tr>
<tr>
<td></td>
<td>GI Oncology Lab, Room G7-220</td>
</tr>
<tr>
<td><strong>Request Form</strong></td>
<td>SCCA Clinical Lab Request: fill out completely, including ICD codes</td>
</tr>
<tr>
<td></td>
<td>CPOE orders will be interfaced to Sunquest upon order activation in</td>
</tr>
<tr>
<td><strong>Phone</strong></td>
<td>606-1088</td>
</tr>
<tr>
<td><strong>Testing Frequency</strong></td>
<td>Daily</td>
</tr>
<tr>
<td><strong>Availability</strong></td>
<td>STAT or routine</td>
</tr>
<tr>
<td><strong>Specimen</strong></td>
<td>Plasma or Serum</td>
</tr>
<tr>
<td><strong>Volume</strong></td>
<td>2 mL</td>
</tr>
<tr>
<td><strong>Pediatric Volume</strong></td>
<td>500 µL (0.5 mL) serum collected in microtube or &quot;bullet&quot; tube</td>
</tr>
<tr>
<td><strong>Container</strong></td>
<td>5 mL lime top PST, green top, red top, gold top SST or orange top RST tube</td>
</tr>
<tr>
<td><strong>Collection</strong></td>
<td>Routine venipuncture or line draw</td>
</tr>
<tr>
<td><strong>Causes for Rejection</strong></td>
<td>See individual tests</td>
</tr>
<tr>
<td><strong>Reference Ranges</strong></td>
<td>See individual tests</td>
</tr>
<tr>
<td><strong>Critical Values</strong></td>
<td>See individual tests</td>
</tr>
</tbody>
</table>
HEPATIC FUNCTION PANEL

**Related Terms**
Liver Panel, Liver Studies, Hepatic Function, LFT, Liver Function Tests, Hepatic Profile

**Panel includes**
- Alanine aminotransferase (ALT), alkaline phosphatase (ALP), aspartate aminotransferase (AST), bilirubin (total & direct), total protein, albumin

**Lab**
- Alliance Lab, Room G1-500
- Immunotherapy Lab, Room G6-097
- GI Oncology Lab, Room G7-220

**Request Form**
SCCA Clinical Lab Request: fill out completely, including ICD codes
CPOE orders will be interfaced to Sunquest upon order activation in ORCA.

**Phone**
606-1088

**Testing Frequency**
Daily

**Availability**
STAT or routine

**Specimen**
Plasma or Serum

**Volume**
1 mL

**Pediatric Volume**
Pediatric capillary collection: 500 µL (0.5 mL) serum collected in microtube or "bullet" tube

**Container**
- 5 mL lime top PST, green top, red top, gold top SST or orange top RST tube

**Collection**
Routine venipuncture or line draw

**Causes for Rejection**
See individual tests

**Reference Ranges**
See individual tests

**Critical Values**
See individual tests
# HEPATIC FUNCTION PANEL WITH LACTATE DEHYDROGENASE

**Related Terms**
Liver Panel, Liver Studies, Hepatic Function, LFT, Liver Function Tests, Hepatic Profile

**Panel includes**
- Alanine aminotransferase (ALT), alkaline phosphatase (ALP), aspartate aminotransferase (AST), bilirubin (total & direct), total protein, albumin, lactate dehydrogenase (LD)

**Lab**
- Alliance Lab, Room G1-500
- Immunotherapy Lab, G6-097
- GI Oncology Lab, Room G7-220

**Request Form**
SCCA Clinical Lab Request: fill out completely, including ICD codes
CPOE orders will be interfaced to Sunquest upon order activation in ORCA.

**Phone**
606-1088

**Testing Frequency**
Daily

**Availability**
STAT or routine

**Specimen**
Plasma or Serum

**Volume**
1 mL

**Pediatric Volume**
Pediatric capillary collection: 500 μL (0.5 mL) serum collected in microtube or "bullet" tube

**Container**
5 mL lime top PST, green top, red top, gold top SST or orange top RST tube

**Collection**
Routine venipuncture or line draw

**Causes for Rejection**
See individual tests

**Reference Ranges**
See individual tests

**Critical Values**
See individual tests
# LIPID PANEL

**Related Terms** Lipid Profile

**Panel includes** Cholesterol, triglycerides, HDL cholesterol, calculated LDL cholesterol, non-HDL Cholesterol, Cholesterol/HDL Ratio

- LDL = Chol – (Trig/5) – HDL
- Non-HDL Cholesterol = Cholesterol – HDL
- Cholesterol/HDL Ratio = Cholesterol/HDL

**Lab**
- Alliance Lab, Room G1-500
- Immunotherapy Lab, Room G6-097
- GI Oncology Lab, Room G7-220

**Request Form**
- SCCA Clinical Lab Request: fill out completely, including ICD codes
- CPOE orders will be interfaced to Sunquest upon order activation in ORCA.

**Phone** 606-1088

**Testing Frequency** Daily

**Availability** Routine

**Specimen** Plasma or Serum

**Volume** 1 mL

**Pediatric Volume** Pediatric capillary collection; 500µL (0.5mL) serum collected in microtube or “bullet” tube

**Container** 5mL lime top PST, green top, red top, gold top SST or orange top RST tube

**Collection** Routine venipuncture or line draw

**Causes for Rejection** See individual tests

**Reference Ranges** See individual tests

**Critical Values** See individual tests
RENAL FUNCTION PANEL

Panel includes 
Sodium, potassium, chloride, carbon dioxide, calculation for Ion Gap, glucose, urea nitrogen (BUN), creatinine, calcium, phosphorus, albumin, calculated glomerular filtration rate

Ion Gap is calculated: \[ \text{Gap} = \text{Na} - (\text{Cl} + \text{CO}_2) \]

Glomerular filtration rate (GFR) is calculated by the Modification of Diet in Renal Disease (MDRD) Study equation, which is reasonably accurate in non-hospitalized patients with chronic kidney disease but tends to underestimate GFR in other populations. It is inaccurate in patients with rapidly changing renal function. See NEJM 2006;354:2473.

Lab 
Alliance Lab, Room G1-500
Immunotherapy Lab, Room G6-097
GI Oncology Lab, Room G7-220

Request Form 
SCCA Clinical Lab Request: fill out completely, including ICD codes
CPOE orders will be interfaced to Sunquest upon order activation in ORCA.

Phone 
606 -1088

Testing Frequency 
Daily

Availability 
Stat or Routine

Specimen 
Plasma or Serum

Volume 
1 mL

Pediatric Volume 
Pediatric capillary collection; 500µL (0.5 mL) serum collected in microtube or “bullet” tube

Container 
5 mL lime top PST, green top, red top, gold top SST or orange top RST tube

Collection 
Routine venipuncture or line draw

Causes for Rejection 
See individual tests

Reference Ranges 
See individual tests

Critical Values 
See individual tests
RENAL FUNCTION PANEL WITH MAGNESIUM

Panel includes
Sodium, potassium, chloride, carbon dioxide, calculation for Ion Gap, glucose, urea nitrogen (BUN), creatinine, calcium, phosphorus, albumin, magnesium, calculated glomerular filtration rate

Ion Gap = Na – (Cl + CO₂)

Glomerular filtration rate (GFR) is calculated by the Modification of Diet in Renal Disease (MDRD) Study equation, which is reasonably accurate in non-hospitalized patients with chronic kidney disease but tends to underestimate GFR in other populations. It is inaccurate in patients with rapidly changing renal function. See NEJM 2006;354:2437

Lab
Alliance Lab, Room G1-500
Immunotherapy Lab, Room G6-097
GI Oncology Lab, Room G7-220

Request Form
SCCA Clinical Lab Request: fill out completely, including ICD codes
CPOE orders will be interfaced to Sunquest upon order activation in ORCA.

Phone
606-1088

Testing Frequency
Daily

Availability
Stat or Routine

Specimen
Plasma or Serum

Volume
1 mL

Pediatric Volume
Pediatric capillary collection; 500µL (0.5 mL) serum collected in microtube or “bullet” tube

Container
5 mL lime top PST, green top, red top, gold top SST or orange top RST tube

Collection
Routine venipuncture or line draw

Causes for Rejection
See individual tests

Reference Ranges
See individual tests

Critical Values
See individual tests
URINALYSIS

Related Terms: UA
Panel includes: Color, appearance, bilirubin, leukocyte esterase, nitrite, specific gravity, pH, protein, glucose, ketones, blood and microscopic analysis if ordered or indicated by chemistries.

Lab: Alliance Lab, Room G1-500
Request Form: SCCA Clinical Lab Request: fill out completely, including ICD codes. CPOE orders will be interfaced to Sunquest upon order activation in ORCA.

Phone: 606-1088
Testing Frequency: Daily
Availability: STAT or routine
Specimen: Random Urine
Volume: 12 mL, can be done on <12 mL in extenuating instances such as infants
Container: Plastic urine container
Collection: Freshly voided clean-catch random urine or catheterized specimen
Storage Instructions: A fresh voiding should be examined within 1 hour, or it should be refrigerated (2-8°C).

Causes for Rejection: Specimens contaminated with feces, less than 1 mL of urine or specimens that are >1 hour old and have not been refrigerated.

Reference Ranges: Urinalysis macroscopic:
- color straw-dark yellow; appearance clear-hazy; pH 5-8; specific gravity 1.005-1.030; protein negative; glucose negative; ketones negative; bilirubin negative; blood negative; nitrite negative; urobilinogen 0.1-1 Ehrlich units; leucocyte esterase: negative.
- Urinalysis microscopic: RBC 0-2/hpf; WBC 0-5/hpf; casts negative.
ALANINE AMINOTRANSFERASE (ALT)

**Related Terms**
ALT, SGPT

**Test included in these panels**
- Hepatic Function Panel, Hepatic Function Panel with LD
- Comprehensive Metabolic Panel with HSCT subgroup
- Comprehensive Metabolic Panel with calc. for albumin and A/G ratio

**Lab**
Alliance Lab, Room G1-500
Immunotherapy Lab, Room G6-097
GI Oncology Lab, Room G7-220

**Request Form**
SCCA Clinical Lab Request: fill out completely, including ICD codes
CPOE orders will be interfaced to Sunquest upon order activation in ORCA.

**Phone**
606-1088

**Testing Frequency**
Daily

**Availability**
STAT or routine

**Specimen**
Plasma or Serum

**Volume**
0.5 mL

**Pediatric Volume**
Pediatric capillary collection: 200µL (0.2 mL) serum collected in microtube or "bullet" tube

**Container**
5 mL lime top PST, green top, red top, gold top SST or orange top RST; NO EDTA samples

**Collection**
Routine venipuncture or line draw

**Special Handling**
Serum must be separated from red cells as soon as possible after collection. Erythrocytes contain 3x – 5x more ALT than does serum.

**Causes for Rejection**
Hemolysis, lipemia, bilirubin, misidentified specimens and requisitions, specimen QNS

**Reference Ranges**

<table>
<thead>
<tr>
<th>Age</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 49</td>
<td>10 - 64 U/L</td>
<td>7-33U/L</td>
</tr>
<tr>
<td>≥ 50</td>
<td>10 - 48 U/L</td>
<td>7-33U/L</td>
</tr>
</tbody>
</table>
ALBUMIN

Test is included in these panels:
- Hepatic Function Panel, Hepatic Function Panel with LD
- Renal Function Panel
- Renal Function Panel with Mg
- Comprehensive Metabolic Panel with calc. for globulin and A/G ratio
- Comprehensive Metabolic Panel with HSCT subgroup

Lab
Alliance Lab, Room G1-500
Immunotherapy Lab, Room G6-097
GI Oncology Lab, Room G7-220

Request Form
SCCA Clinical Lab Request: fill out completely, including ICD codes
CPOE orders will be interfaced to Sunquest upon order activation in ORCA.

Phone
606-1088

Testing Frequency
Daily

Availability
STAT or routine

Specimen
Plasma or Serum

Volume
0.5 mL

Pediatric Volume
Pediatric capillary collection: 200 µL (0.2 mL) serum collected in microtube or "bullet" tube

Container
5 mL lime top PST, green top, red top, gold top SST or orange top RST

Collection
Routine venipuncture or line draw

Causes for Rejection
Gross hemolysis, lipemia or bilirubin, misidentified specimens and requisitions, specimen QNS

Reference Ranges
3.5 – 5.2 g/dL
ALKALINE PHOSPHATASE (ALK)

Related Terms: ALK, Alk Phos, ALP, Phosphatase, Alkaline

Test included in these panels:
- Hepatic Function Panel
- Hepatic Function Panel with LD
- Comprehensive Metabolic Panel with calc. for globulin and A/G ratio
- Comprehensive Metabolic Panel with HSCT subgroup

Lab
- Alliance Lab, Room G1-500
- Immunotherapy Lab, G6-097
- GI Oncology Lab, Room G7-220

Request Form
- SCCA Clinical Lab Request: fill out completely, including ICD codes
- CPOE orders will be interfaced to Sunquest upon order activation in ORCA.

Phone
- 606-1088

Testing Frequency
- Daily

Availability
- STAT or routine

Specimen
- Plasma or Serum

Volume
- 0.5 mL

Pediatric Volume
- Pediatric capillary collection: 200 µL (0.2mL) serum collected in microtube or “bullet” tube

Container
- 5 mL lime top PST, green top, red top, gold top SST or orange top RST; NO EDTA or oxalate samples

Collection
- Routine venipuncture or line draw

Causes for Rejection
- Hemolysis, misidentified specimens and requisitions, specimen QNS, serum not separated from cells within 2 hours after collection

(Continued)
### Alkaline Phosphatase, continued

#### Reference Ranges

<table>
<thead>
<tr>
<th>Age</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>75 years</td>
<td>52-227 U/L</td>
<td>49-199 U/L</td>
</tr>
<tr>
<td>65 years</td>
<td>36-161 U/L</td>
<td>38-172 U/L</td>
</tr>
<tr>
<td>55 years</td>
<td>37-159 U/L</td>
<td>31-132 U/L</td>
</tr>
<tr>
<td>45 years</td>
<td>39-139 U/L</td>
<td>34-121 U/L</td>
</tr>
<tr>
<td>35 years</td>
<td>36-122 U/L</td>
<td>25-112 U/L</td>
</tr>
<tr>
<td>25 years</td>
<td>35-109 U/L</td>
<td>25-100 U/L</td>
</tr>
<tr>
<td>18 years</td>
<td>42-136 U/L</td>
<td>26-98 U/L</td>
</tr>
<tr>
<td>14 years</td>
<td>72-400 U/L</td>
<td>43-226 U/L</td>
</tr>
<tr>
<td>12 years</td>
<td>119-426 U/L</td>
<td>89-285 U/L</td>
</tr>
<tr>
<td>10 years</td>
<td>115-324 U/L</td>
<td>132-366 U/L</td>
</tr>
<tr>
<td>0 years</td>
<td>115-324 U/L</td>
<td>111-281 U/L</td>
</tr>
</tbody>
</table>
ASPARTATE AMINOTRANSFERASE (AST)

**Related Terms**  
AST, GOT, Serum Glutamic Oxaloacetic Transaminase, SGOT

**Test included in these panels**
- Hepatic Function Panel
- Hepatic Function Panel with LD
- Comprehensive Metabolic Panel with calc. for globulin and A/G ratio
- Comprehensive Metabolic Panel with HSCT subgroup

**Lab**  
Alliance Lab, Room G1-500  
Immunotherapy, Room G6-097  
GI Oncology Lab, Room G7-220

**Request Form**  
SCCA Clinical Lab Request: fill out completely, including ICD codes
CPOE orders will be interfaced to Sunquest upon order activation in ORCA.

**Phone**  
606-1088

**Testing Frequency**  
Daily

**Availability**  
STAT or routine

**Specimen**  
Plasma or Serum

**Volume**  
0.5 mL

**Pediatric Volume**  
Pediatric capillary collection: 200µL (0.2mL) serum collected in microtube or "bullet" tube

**Container**  
5 mL lime top PST, green top, red top, gold top SST or orange top RST

**Collection**  
Routine venipuncture or line draw

**Special Handling**  
The concentration of AST in red cells is roughly 15x that of normal serum, therefore, hemolysis should be avoided.

**Causes for Rejection**  
Hemolysis, misidentified specimens and requisitions, specimen QNS

**Reference Ranges**  
9-38 U/L
AMMONIA, PLASMA

**Related Terms**
Ammonia, PLNH3

**Lab**
Alliance Lab, Room G1-500

**Request Form**
SCCA Clinical Lab Request: fill out completely, including ICD codes
CPOE orders will be interfaced to Sunquest upon order activation in ORCA.

**Phone**
606-1088

**Testing Frequency**
Daily

**Availability**
STAT or routine

**Specimen**
Plasma ON ICE

**Volume**
2 mL plasma, minimum 0.2mL plasma. Ideal to have tube completely filled

**Pediatric Volume**
Same as above

**Container**
Lime or Green top refrigerated or on ice

**Collection**
Routine venipuncture or line draw

**Causes for Rejection**
Samples older than 3 hours old at 2-4 degrees C or 24 hours at -20 C, QNS, Hemolysis, misidentified specimens

**Reference Ranges**

<table>
<thead>
<tr>
<th>Age</th>
<th>Range</th>
<th>Age</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1d-13d</td>
<td>110-180</td>
<td>1d-13d</td>
<td>110-180</td>
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<tr>
<td>14d-29d</td>
<td>95-155</td>
<td>14d-29d</td>
<td>95-155</td>
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<tr>
<td>1m-11y</td>
<td>35-85</td>
<td>1m-11y</td>
<td>35-85</td>
</tr>
<tr>
<td>12y-</td>
<td>0-65</td>
<td>12y-</td>
<td>0-65</td>
</tr>
</tbody>
</table>
UREA NITROGEN

**Related Terms**

Blood Urea Nitrogen, BUN

**Test included in these panels**

- Basic Metabolic Panel
- Comprehensive Metabolic Panel with calc. for globulin and A/G ratio
- Comprehensive Metabolic Panel with HSCT subgroup
- Renal Function Panel
- Renal Function Panel with Mg

**Lab**

- Alliance Lab, Room G1-500
- Immunotherapy Lab, G6-097
- GI Oncology Lab, Room G7-220

**Request Form**

SCCA Clinical Lab Request: fill out completely, including ICD codes

CPOE orders will be interfaced to Sunquest upon order activation in ORCA.

**Phone**

606-1088

**Testing Frequency**

Daily

**Availability**

STAT or routine

**Specimen**

Plasma or Serum

**Volume**

0.5 mL

**Pediatric Volume**

Pediatric capillary collection: 200µL (0.2mL) serum collected in microtube or "bullet" tube

**Container**

5 mL lime top PST, green top, red top, gold top SST or orange top RST

**Collection**

Routine venipuncture or line draw

**Causes for rejection**

Gross hemolysis, misidentified specimens and requisitions, specimen QNS

**Reference Ranges**

8 – 21 mg/dL
CALCIUM

Related Terms  Ca++
Test included in these panels

- Basic Metabolic Panel
- Comprehensive Metabolic Panel with calc. for globulin and A/G ratio
- Comprehensive Metabolic Panel with HSCT subgroup
- Renal Function Panel
- Renal Function Panel with Mg

Lab  Alliance Lab, Room G1-500
     Immunotherapy Lab, Room G6-097
     GI Oncology Lab, Room G7-220
Phone  606-1088
Testing Frequency  Daily
Availability  STAT or routine
Specimen  Plasma or Serum
Volume  0.5 mL
Pediatric Volume  Pediatric capillary collection: 200µL (0.2mL) serum collected in microtube or "bullet" tube
Container  5 mL lime top PST, green top, red top, gold top SST or orange top RST
Collection  Routine venipuncture or line draw
Causes for rejection  Gross hemolysis, specimen QNS, misidentified specimens and requisitions
Reference Range  8.9 – 10.2 mg/dL
Critical Values  <6.0 mg/dL or >13.0 mg/dL
# CARCINOEMBRYONIC ANTIGEN

<table>
<thead>
<tr>
<th><strong>Related Terms</strong></th>
<th>CEA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lab</strong></td>
<td>Alliance Lab, Room G1-500</td>
</tr>
<tr>
<td><strong>Request Form</strong></td>
<td>SCCA Clinical Lab Request: fill out completely, including ICD codes. CPOE orders will be interfaced to Sunquest upon order activation in ORCA.</td>
</tr>
<tr>
<td><strong>Phone</strong></td>
<td>606-1088</td>
</tr>
<tr>
<td><strong>Testing Frequency</strong></td>
<td>Daily</td>
</tr>
<tr>
<td><strong>Availability</strong></td>
<td>STAT or routine</td>
</tr>
<tr>
<td><strong>Specimen</strong></td>
<td>Serum</td>
</tr>
<tr>
<td><strong>Volume</strong></td>
<td>2.0 mL, minimum 0.8</td>
</tr>
<tr>
<td><strong>Container</strong></td>
<td>5 mL orange top tube preferred; or gold top or SST or red top tube SST</td>
</tr>
<tr>
<td><strong>Collection</strong></td>
<td>Routine venipuncture or line draw</td>
</tr>
<tr>
<td><strong>Interfering Substances</strong></td>
<td>Gross hemolysis, lipemia or bilirubin, misidentified specimens and requisitions, specimen QNS</td>
</tr>
<tr>
<td><strong>Reference Ranges</strong></td>
<td>0.0-5.0 ng/mL</td>
</tr>
</tbody>
</table>
# CEREBRAL SPINAL FLUID GLUCOSE

<table>
<thead>
<tr>
<th><strong>Related Terms</strong></th>
<th>CSF glucose</th>
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</thead>
<tbody>
<tr>
<td><strong>Lab</strong></td>
<td>Alliance Lab, Room G1-500</td>
</tr>
<tr>
<td><strong>Request Form</strong></td>
<td>SCCA Clinical Lab Request: fill out completely, including ICD codes CPOE orders will be interfaced to Sunquest upon order activation in ORCA.</td>
</tr>
<tr>
<td><strong>Phone</strong></td>
<td>606-1088</td>
</tr>
<tr>
<td><strong>Testing Frequency</strong></td>
<td>Daily</td>
</tr>
<tr>
<td><strong>Availability</strong></td>
<td>STAT or routine</td>
</tr>
<tr>
<td><strong>Specimen</strong></td>
<td>Cerebral spinal fluid</td>
</tr>
<tr>
<td><strong>Volume</strong></td>
<td>1 mL</td>
</tr>
<tr>
<td><strong>Minimum Volume</strong></td>
<td>0.4 mL</td>
</tr>
<tr>
<td><strong>Container</strong></td>
<td>Plastic tube with tight-fitting lid, orange top tube</td>
</tr>
<tr>
<td><strong>Collection</strong></td>
<td>Lumbar Puncture</td>
</tr>
<tr>
<td><strong>Causes for Rejection</strong></td>
<td>Insufficient quantity, misidentified specimens and requisitions</td>
</tr>
<tr>
<td><strong>Reference Ranges</strong></td>
<td>40-80 mg/dL</td>
</tr>
<tr>
<td><strong>Critical Values</strong></td>
<td>Less than 20 mg/dL</td>
</tr>
</tbody>
</table>
CEREBRAL SPINAL FLUID PROTEIN

Related Terms          CSF protein
Lab                   Alliance Lab, Room G1-500
Request Form          SCCA Clinical Lab Request: fill out completely, including ICD codes
                      CPOE orders will be interfaced to Sunquest upon order activation in
                      ORCA.
Phone                 606-1088
Testing Frequency     Daily
Availability          STAT or routine
Specimen              Cerebral spinal fluid
Volume                1 mL
Minimum Volume        0.4 mL
Container             Plastic tube with tight-fitting lid
Collection           Lumbar Puncture
Causes for Rejection  Insufficient quantity, misidentified specimens and requisitions
Reference Ranges      15-45 mg/dL
CHLORIDE

Related Terms
Cl-

Test included in these panels:
• Electrolytes
• Basic Metabolic Panel
• Comprehensive Metabolic Panel with calc. for globulin and A/G ratio
• Comprehensive Metabolic Panel with HSCT subgroup
• Renal Function Panel.
• Renal Function Panel with Mg

Lab
Alliance Lab, Room G1-500
Immunotherapy Lab, G6-097
GI Oncology Lab, Room G7-220

Request Form
SCCA Clinical Lab Request: fill out completely, including ICD codes
CPOE orders will be interfaced to Sunquest upon order activation in
ORCA.

Phone
606-1088

Testing Frequency
Daily

Availability
STAT or routine

Specimen
Plasma or Serum

Volume
0.5 mL

Pediatric Volume
Pediatric capillary collection: 200µL (0.2mL) serum collected in microtube or "bullet" tube

Container
5 mL lime top PST, green top, red top, gold top SST or orange top RST

Collection
Routine venipuncture or line draw

Special Handling
Centrifuge the specimen to separate serum from red cells within 2 hours of collection. Store refrigerated at 2–8°C.

Causes for Rejection
Gross hemolysis, misidentified specimens and requisitions, specimen QNS

Reference Ranges
98 – 108 mEq/L
CHOLESTEROL

Test included in this panel: Lipid panel
Lab
Alliance Lab, Room G1-500
Immunotherapy Lab, Room G6-097
GI Oncology Lab, Room G7-220
Request Form
SCCA Clinical Lab Request: fill out completely, including ICD codes
CPOE orders will be interfaced to Sunquest upon order activation in ORCA.
Phone 606-1088
Testing Frequency Daily
Availability Routine
Specimen Plasma or Serum
Volume 1 mL
Pediatric Volume Pediatric capillary collection: 500µL(0.5mL) serum collected in microtube or “bullet tube”
Container 5 mL lime top PST, green top, red top, gold top SST or orange top RST
Collection Routine venipuncture or line draw
Causes for Rejection Misidentified specimens and requisitions, specimen QNS, improperly stored specimen, gross hemolysis
Reference Ranges
Desirable <200 mg/dL
Acceptable 200-239 mg/dL
High >239 mg/dL
CO₂ (BICARBONATE)

**Related Terms**  
TCO₂, Total CO₂, CO₂, HCO₃⁻

**Test included in these panels**
- Electrolytes
- Basic Metabolic Panel
- Comprehensive Metabolic Panel with calc. for globulin and A/G ratio
- Comprehensive Metabolic Panel with HSCT subgroup

**Lab**
- Alliance Lab, Room G1-500
- Immunotherapy Lab, Room G-6-097
- GI Oncology Lab, Room G7-220

**Request Form**
- SCCA Clinical Lab Request: fill out completely, including ICD codes
- CPOE orders will be interfaced to Sunquest upon order activation in ORCA.

**Phone**  606-1088

**Testing Frequency**  Daily

**Availability**  STAT or routine

**Specimen**  Plasma or Serum

**Volume**  0.5 mL

**Pediatric volume**  Pediatric capillary collection: 200µL (0.2mL) serum collected in microtube or "bullet" tube

**Container**  5 mL lime top PST, green top, red top, gold top SST or orange top RST; NO EDTA, oxalate, or citrate

**Collection**  Routine venipuncture or line draw

**Causes for Rejection**
- Gross hemolysis, misidentified specimens and requisitions, specimen QNS

**Reference Ranges**  22 – 32 mEq/L

**Critical Values**  <10 mEq/L or >40 mEq/L
CREATINE KINASE

**Related terms**  CK, CK-Total, CPK  
**Lab**  Alliance Lab, Room G1-500  
**Request Form**  SCCA Clinical Lab Request: fill out completely, including ICD codes  
CPOE orders will be interfaced to Sunquest upon order activation in ORCA.  
**Phone**  606-1088  
**Testing Frequency**  Daily  
**Availability**  STAT or routine  
**Specimen**  Plasma or Serum  
**Volume**  0.5 mL  
**Pediatric volume**  Pediatric capillary collection: 200μL (0.2mL) serum collected in microtube or "bullet" tube  
**Container**  5 mL lime top PST, green top, red top, gold top SST or orange top RST; NO EDTA, citrate, or oxalate.  
**Collection**  Routine venipuncture or line draw  
**Special handling**  Separated serum or plasma should not remain at room temp longer than 4 hours. If assays are not completed within 4 hours, serum or plasma should be stored at 2°C to 8°C for up to one week.  
**Cause for rejection**  Misidentified specimens and requisitions, specimen QNS  
**Reference Ranges**

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>62-325 U/L</td>
<td>43-274 U/L</td>
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</tbody>
</table>
CREATININE

Test included in these panels:
- Basic Metabolic Panel
- Comprehensive Metabolic Panel with calc. for globulin and A/G ratio
- Comprehensive Metabolic Panel with HSCT subgroup
- Renal Function Panel
- Renal Function Panel with Mg

Test includes
Creatinine, calculated glomerular filtration rate

Glomerular filtration rate (GFR) is calculated by the Modification of Diet in Renal Disease (MDRD) Study equation, which is reasonably accurate in non-hospitalized patients with chronic kidney disease but tends to underestimate GFR in other populations. It is inaccurate in patients with rapidly changing renal function. See NEJM 2006;354:2473

Lab
Alliance Lab, Room G1-500
Immunotherapy Lab, Room G6-097
GI Oncology Lab, Room G7-220

Request Form
SCCA Clinical Lab Request: fill out completely, including ICD codes
CPOE orders will be interfaced to Sunquest upon order activation in ORCA.

Phone
606-1088

Testing Frequency
Daily

Availability
STAT or routine

Specimen
Plasma or Serum

Volume
0.5 mL

Pediatric volume
Pediatric capillary collection: 200µL (0.2mL) serum collected in microtube or "bullet" tube

Container
5 mL lime top PST, green top, red top, gold top SST or orange top RST

Collection
Routine venipuncture or line draw

Causes for Rejection
Hemolysis, misidentified specimens and requisitions, specimen QNS

Reference Range

<table>
<thead>
<tr>
<th>Age</th>
<th>Female Range</th>
<th>Male Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;=18 yrs</td>
<td>0.38-1.02</td>
<td>&gt;=18 yrs 0.51-1.18</td>
</tr>
</tbody>
</table>

DIRECT BILIRUBIN
Related Terms
Conjugated Bilirubin

Test included in these panels
- Hepatic Function Panel
- Hepatic Function Panel with LD
- Comprehensive Metabolic Panel with HSCT subgroup

Lab
Alliance Lab, Room G1-500
Immunotherapy, Room G6-097
GI Oncology Lab, Room G7-220

Request Form
SCCA Clinical Lab Request: fill out completely, including ICD codes
CPOE orders will be interfaced to Sunquest upon order activation in ORCA.

Phone
606-1088

Testing Frequency
Daily

Availability
STAT or routine

Specimen
Plasma or Serum

Volume
0.5 mL

Pediatric Volume
Pediatric capillary collection: 200µL (0.2mL) serum collected in microtube or "bullet" tube

Container
5 mL lime top PST, green top, red top, gold top SST or orange top RST

Collection
Routine venipuncture or line draw

Special Handling
Protect specimen from light. Direct exposure can decrease direct bilirubin values in specimens by 50% in one hour.

Causes for Rejection
Hemolysis, misidentified specimens and requisitions, specimen QNS

Reference Ranges
0.0 – 0.3 mg/dL
# GAMMA GLUTAMYL TRANSFERASE

**Related Terms**
- GGT

**Test included in this panel:**
- Comprehensive Metabolic Panel with HSCT subgroup

**Lab**
- Alliance Lab, Room G1-500
- Immunotherapy, G6-097
- GI Oncology Lab, Room G7-220

**Request Form**
- SCCA Clinical Lab Request: fill out completely, including ICD codes
- CPOE orders will be interfaced to Sunquest upon order activation in ORCA.

**Phone**
- 606-1088

**Testing Frequency**
- Daily

**Availability**
- Routine

**Specimen**
- Plasma or Serum

**Volume**
- 1 mL

**Pediatric Volume**
- Pediatric capillary collection: 500µL (0.5mL) serum collected in microtube or “bullet tube”

**Container**
- 5 ml lime top PST, green top, red top, gold top SST or orange top RST. No EDTA, citrate, oxalate, or fluoride.

**Collection**
- Routine venipuncture or line draw

**Interfering Substances**
- Some anti-epileptic drugs (phenytoin, barbiturates), as well as heavy alcohol consumption before specimen collection may result in falsely elevated GGT values

**Causes for Rejection**
- Misidentified specimens and requisitions, specimen QNS, improperly stored specimen, gross hemolysis

**Reference Ranges**
- 0 – 55 U/L
GLUCOSE

Related Terms
Blood sugar, sugar

Test included in these panels:
- Basic Metabolic Panel
- Comprehensive Metabolic Panel with calc. for globulin and A/G ratio
- Comprehensive Metabolic Panel with HSCT subgroup
- Renal Function Panel
- Renal Function Panel with Mg

Lab
Alliance Lab, Room G1-500
Immunotherapy, Room G6-097
GI Oncology Lab, Room G7-220

Request Form
SCCA Clinical Lab Request: fill out completely, including ICD codes
CPOE orders will be interfaced to Sunquest upon order activation in ORCA.

Phone
606-1088

Testing Frequency
Daily

Availability
STAT or routine

Specimen
Plasma or Serum

Volume
0.5 mL

Pediatric Volume
Pediatric capillary collection: 200µL (0.2mL) serum collected in microtube or "bullet" tube

Container
5 mL lime top PST, green top, red top, gold top SST or orange top RST. EDTA or fluoride acceptable.

Collection
Routine venipuncture or line draw;
do not draw specimen from an arm receiving intravenous transfusion

Specimen Handling
Separate plasma or serum from cells as soon as possible
to minimize loss of glucose through glycolysis

Causes for Rejection
Hemolysis, misidentified specimens and requisitions, specimen QNS

Reference Ranges
Glucose, fasting: 62–125 mg/dL

Critical Values
<45 mg/dL or >500 mg/dL
## HDL CHOLESTEROL

<table>
<thead>
<tr>
<th>Related Terms</th>
<th>HDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test included in this panel</td>
<td>Lipid Panel</td>
</tr>
</tbody>
</table>
| Lab | Alliance Lab, Room G1-500  
Immunotherapy, Room G6-097  
GI Oncology Lab, Room G7-220 |
| Request Form | SCCA Clinical Lab Request: fill out completely, including ICD codes  
CPOE orders will be interfaced to Sunquest upon order activation in ORCA. |
| Phone | 606-1088 |
| Testing Frequency | Daily |
| Availability | Routine |
| Specimen | Plasma or Serum |
| Volume | 1 mL |
| Pediatric Volume | Pediatric capillary collection: 500μL (0.5mL) serum collected in microtube or “bullet tube” |
| Container | 5 mL lime top PST, green top, red top, gold top SST or orange top RST. No citrate or oxalate. |
| Collection | Routine venipuncture or line draw |
| Causes for Rejection | Misidentified specimens and requisitions, specimen QNS, improperly stored specimen |
| Reference Ranges | >39  
Desirable >59 mg/dL  
Acceptable 40-59 mg/dL  
Low <40 mg/dL |
# IONIZED CALCIUM, SERUM & PLASMA

**Test includes**  
Ionized Calcium

**Lab**  
Alliance Lab, Room G1-500

**Request Form**  
SCCA Clinical Lab Request: fill out completely, including ICD codes  
CPOE orders will be interfaced to Sunquest upon order activation in ORCA.

**Phone**  
606-1088

**Testing Frequency**  
Daily

**Availability**  
STAT or routine

**Specimen**  
Serum & Plasma

**Volume**  
1 mL

**Pediatric Volume**  
0.5 mL

**Container**  
Gold top SST™ tube for serum  
Lime green top PST tube for plasma

**Collection**  
Routine venipuncture or line draw

**Storage Instructions**  
**DO NOT OPEN TUBE.** Use only PST/SST™ (gel barrier) tube if ordering additional tests and specimen cannot reach laboratory within 2 hours of collection. Spin PST/SST™ (gel barrier) tube to separate serum or plasma. Serum or plasma in stoppered and spun PST/SST™ tube is stable 24 hours at 4°C. If stored >24 hours, freeze serum in cryo tube at −20° or −70°C.

**Causes for Rejection**  
Misidentified specimens and requisitions, specimen QNS, any tube that has been opened and exposed to air, gross hemolysis

**Reference Ranges**  
- > 1 year: 1.18 mmol/L - 1.38 mmol/L
- < 1 year: 1.16 mmol/L - 1.45 mmol/L

**Critical Values**  
- < 0.78 mmol/L or > 1.58 mmol/L
LACTATE DEHYDROGENASE

Related Terms  LD, LDH

Test included in these panels:
- Comprehensive Metabolic Panel with HSCT subgroup
- Hepatic Function Panel with LD

Lab  Alliance Lab, Room G 1-500
Immunotherapy Lab, G6-097
GI Oncology Lab, Room G7-220

Request Form  SCCA Clinical Lab Request: fill out completely, including ICD codes
CPOE orders will be interfaced to Sunquest upon order activation in ORCA.

Phone  606-1088

Testing Frequency  Daily

Availability  STAT or routine

Specimen  Plasma or Serum

Volume  0.5 mL

Pediatric Volume  Pediatric capillary collection: 200μL (0.2mL) serum collected in microtube or "bullet" tube

Container  5 mL lime top PST, green top, red top, gold top SST or orange top RST. No citrate or oxalate.

Collection  Routine venipuncture or line draw

Special Handling  Do not refrigerate specimens

Causes for Rejection  Misidentified specimens and requisitions, specimen QNS

Reference Range  <210 U/L
LDL CHOLESTEROL

Related Terms: LDL
Test Included in this panel: Lipid Panel

This test is a calculation and it cannot be ordered as an individual test.
Refer to Lipid Panel

LDL = Chol – (Trig/5) - HDL

Lab
Alliance Lab, Room G1-500
Immunotherapy Lab, Room G6-097
GI Oncology Lab, Room G7-220

Request Form
SCCA Clinical Lab Request: fill out completely, including ICD codes
CPOE orders will be interfaced to Sunquest upon order activation in ORCA.

Phone
606-1088

Testing Frequency
Daily

Availability
Routine

Specimen
Plasma or Serum

Volume
1 mL

Pediatric Volume
Pediatric capillary collection: 500µL (0.5mL) serum collected in microtube or “bullet tube”

Container
5 mL lime top PST, green top, red top, gold top SST or orange top RST.

Collection
Routine venipuncture or line draw

Special Handling
Serum or plasma must be separated from cells within 2 hours

Causes for Rejection
Misidentified specimens and requisitions, specimen QNS, improperly stored specimen, gross hemolysis

Reference Ranges
<130
MAGNESIUM

Related Terms  Mg++

Test included in these panels:

- Comprehensive Metabolic Panel with HSCT subgroup
- Renal Function Panel with Mg

Lab

- Alliance Lab, Room G1-500
- Immunotherapy Lab, Room G6-097
- GI Oncology Lab, Room G7-220

Request Form

SCCA Clinical Lab Request: fill out completely, including ICD codes
CPOE orders will be interfaced to Sunquest upon order activation in ORCA.

Phone  606-1088

Testing Frequency  Daily

Availability  STAT or routine

Specimen  Plasma or Serum

Volume  0.5 mL

Pediatric volume  Pediatric capillary collection: 200µL (0.2mL) serum collected in microtube or "bullet" tube

Container  5 mL lime top PST, green top, red top, gold top SST or orange top RST. No EDTA, citrate or oxalate.

Collection  Routine venipuncture or line draw

Note  Erythrocytes contain 3x the magnesium concentration of serum

Special Handling  Draw without venous stasis

Causes for Rejection

Hemolysis, misidentified specimens and requisitions, specimen QNS

Reference Ranges  1.8 – 2.4 mg/dL

Critical Values  <1.2 or >4.7 mg/dL
PHOSPHORUS

**Related Terms**  Phos, PO₄, Inorganic phosphorus

**Test included in these panels:**
- Comprehensive Metabolic Panel with HSCT subgroup
- Renal Function Panel
- Renal Function Panel with Mg

**Lab**
- Alliance Lab, Room G1-500
- Immunotherapy, Room G6-097
- GI Oncology Lab, Room G7-220

**Request Form**
- SCCA Clinical Lab Request: fill out completely, including ICD codes
- CPOE orders will be interfaced to Sunquest upon order activation in ORCA.

**Phone**  606-1088

**Testing Frequency**  Daily

**Availability**
- STAT or routine

**Specimen**
- Plasma or Serum

**Volume**
- 0.5 mL

**Pediatric Volume**
- Pediatric capillary collection: 200µL (0.2mL) serum collected in microtube or "bullet" tube

**Container**
- 5 mL lime top PST, green top, red top, gold top SST or orange top RST. No EDTA, citrate or oxalate.

**Collection**
- Routine venipuncture or line draw

**Special Handling**
- Hemolysis must be avoided, as phosphate may be split off from labile esters in the erythrocytes.

**Causes for Rejection**
- Hemolysis, misidentified specimens and requisitions, specimen QNS

**Reference Ranges**
- Adult  2.5 – 4.5 mg/dL
- Child <12 years  4.5 – 6.0 mg/dL

**Critical Values**
- < 1.0 mg/dL
POTASSIUM

**Related Terms**
K+, K, Serum Potassium

**Test included in these panels**
- Electrolytes
- Basic Metabolic Panel
- Comprehensive Metabolic Panel with calc. for globulin and A/G ratio
- Comprehensive Metabolic Panel with HSCT subgroup
- Renal Function Panel; Renal Function Panel with Mg

**Lab**
Alliance Lab, Room G1-500
Immunotherapy, Room G6-097
GI Oncology Lab, Room G7-220

**Request Form**
SCCA Clinical Lab Request: fill out completely, including ICD codes
CPOE orders will be interfaced to Sunquest upon order activation in ORCA.

**Phone**
606-1088

**Testing Frequency**
Daily

**Availability**
STAT or routine

**Specimen**
Plasma or Serum

**Volume**
0.5 mL

**Pediatric Volume**
Pediatric capillary collection: 200µL (0.2mL) serum collected in microtube or "bullet" tube

**Container**
5 mL lime top PST, green top, red top, gold top SST or orange top RST

**Collection**
Routine venipuncture or line draw, do not draw specimen from an arm receiving intravenous transfusion. Avoid hemolysis, as it can lead to falsely elevated K+ levels.

**Causes for Rejection**
Hemolysis, misidentified specimens and requisitions, specimen QNS

**Reference Ranges**
3.6 – 5.2 mEq/L

**Critical Values**
<3.0 mEq/L or >6.0 mEq/L
# URINE PREGNANCY TEST

<table>
<thead>
<tr>
<th><strong>Lab</strong></th>
<th>Alliance Lab, Room G1-500</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Request Form</strong></td>
<td>SCCA Clinical Lab Request: fill out completely, including ICD codes CPOE orders will be interfaced to Sunquest upon order activation in ORCA.</td>
</tr>
<tr>
<td><strong>Phone</strong></td>
<td>606-1088</td>
</tr>
<tr>
<td><strong>Testing Frequency</strong></td>
<td>Daily</td>
</tr>
<tr>
<td><strong>Availability</strong></td>
<td>STAT or routine</td>
</tr>
<tr>
<td><strong>Specimen</strong></td>
<td>Random Urine, first morning specimen preferred for best results</td>
</tr>
<tr>
<td><strong>Volume</strong></td>
<td>10 mL</td>
</tr>
<tr>
<td><strong>Container</strong></td>
<td>Plastic urine container</td>
</tr>
<tr>
<td><strong>Collection</strong></td>
<td>Freshly voided random urine</td>
</tr>
<tr>
<td><strong>Storage Instructions</strong></td>
<td>Specimen can be refrigerated (2-8°C).</td>
</tr>
<tr>
<td><strong>Causes for Rejection</strong></td>
<td>Specimens contaminated with feces or less than 1 mL of urine.</td>
</tr>
<tr>
<td></td>
<td>Specimens that are &gt;1 hour old and have not been refrigerated.</td>
</tr>
<tr>
<td><strong>Reporting</strong></td>
<td>Qualitative results, positive or negative</td>
</tr>
<tr>
<td><strong>Reference Ranges</strong></td>
<td>Negative, positive results will be called to the ordering provider</td>
</tr>
</tbody>
</table>
# SERUM PREGNANCY TEST (QUALITATIVE)

<table>
<thead>
<tr>
<th><strong>Lab</strong></th>
<th>Alliance Lab, Room G1-500</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GI Oncology Lab, Room G7-220</td>
</tr>
<tr>
<td><strong>Request Form</strong></td>
<td>SCCA Clinical Lab Request: fill out completely, including ICD codes</td>
</tr>
<tr>
<td></td>
<td>CPOE orders will be interfaced to Sunquest upon order activation in ORCA.</td>
</tr>
<tr>
<td><strong>Phone</strong></td>
<td>606-1088</td>
</tr>
<tr>
<td><strong>Testing Frequency</strong></td>
<td>Daily</td>
</tr>
<tr>
<td><strong>Availability</strong></td>
<td>STAT or routine</td>
</tr>
<tr>
<td><strong>Specimen</strong></td>
<td>Serum</td>
</tr>
<tr>
<td><strong>Volume</strong></td>
<td>5 mL</td>
</tr>
<tr>
<td><strong>Container</strong></td>
<td>4ml orange top RST, gold top SST, red top tube</td>
</tr>
<tr>
<td></td>
<td><em>Not acceptable:</em> lime or green top tube</td>
</tr>
<tr>
<td><strong>Collection</strong></td>
<td>Routine venipuncture or line draw</td>
</tr>
<tr>
<td><strong>Causes for Rejection</strong></td>
<td>Collected in tube with anticoagulant, QNS, misidentified specimens and requisitions</td>
</tr>
<tr>
<td><strong>Reporting</strong></td>
<td>Qualitative results, positive or negative</td>
</tr>
<tr>
<td><strong>Reference Ranges</strong></td>
<td>Negative, positive results will be called to the ordering provider</td>
</tr>
</tbody>
</table>


PROSTATE SPECIFIC ANTIGEN

**Related Terms**
- PSA, PSA monitor, PSA screen, ultrasensitive PSA

**Lab**
- Alliance Lab, Room G1-500

**Request Form**
- SCCA Clinical Lab Request: fill out completely, including ICD codes
  - CPOE orders will be interfaced to Sunquest upon order activation in ORCA.

**Phone**
- 606-1088

**Testing Frequency**
- Daily

**Availability**
- STAT or routine

**Specimen**
- Serum

**Volume**
- 2.0 mL, minimum 0.8

**Container**
- 5 mL orange top tube preferred; or gold top SST, red top tube, SST

**Collection**
- Routine venipuncture or line draw

**Interfering Substances**
- Gross hemolysis, lipemia, or bilirubin; misidentified specimens and requisitions; specimen QNS

**Reference Ranges**
- 0.00-4.00 ng/mL
SODIUM

**Related Terms**  
Na+

**Test included in these panels:**  
- Electrolytes  
- Basic Metabolic Panel  
- Comprehensive Metabolic Panel with calc. for globulin and A/G ratio  
- Comprehensive Metabolic Panel with HSCT subgroup  
- Renal Function Panel; Renal Function Panel with Mg

**Lab**  
Alliance Lab, Room G1-500  
Immunotherapy, Room G6-097  
GI Oncology Lab, Room G7-220

**Request Form**  
SCCA Clinical Lab Request: fill out completely, including ICD codes  
CPOE orders will be interfaced to Sunquest upon order activation in ORCA.

**Phone**  
606-1088

**Testing Frequency**  
Daily

**Availability**  
STAT or routine

**Specimen**  
Plasma or Serum

**Volume**  
0.5 mL

**Pediatric Volume**  
Pediatric capillary collection: 200µL (0.2mL) serum collected in microtube or "bullet" tube

**Container**  
5 mL lime top PST, green top, red top, gold top SST or orange top RST

**Collection**  
Routine venipuncture or line draw; do not draw specimen from an arm receiving intravenous transfusion.

**Causes for Rejection**  
Gross hemolysis, misidentified specimens and requisitions, specimen QNS

**Reference Ranges**  
135 – 145 mEq/L

**Critical Values**  
<120 mEq/L or >160 mEq/L
STOOL OCCULT BLOOD

**Related Terms**  
Fecal Occult Blood, Stool Guiac, Occult Blood

**Lab**  
Alliance Lab, Room G1-500

**Request Form**  
SCCA Clinical Lab Request: fill out completely, including ICD codes; include date and time of specimen collection

CPOE orders will be interfaced to Sunquest upon order activation in ORCA.

**Phone**  
606-1088

**Testing Frequency**  
Daily

**Specimen**  
Send Hemoccult® card with stool specimen already applied, up to three cards can be sent at one time; three cards or a card with 3 samples are the same charge as one card

**Causes for Rejection**  
Misidentified specimens and requisitions, specimen QNS, improperly prepared Hemoccult® card, refrigerated Hemoccult® cards

**Reference Range**  
Negative
TOTAL BILIRUBIN

Related Terms
Bilirubin

Test included in these panels
- Comprehensive Metabolic Panel with calc. for globulin and A/G Ratio
- Comprehensive Metabolic Panel with HSCT subgroup
- Hepatic Function Panel
- Hepatic Function Panel with LD

Lab
Alliance Lab, Room G1-500
Immunotherapy, Room G6-097
GI Oncology Lab, Room G7-220

Request Form
SCCA Clinical Lab Request: fill out completely, including ICD codes
CPOE orders will be interfaced to Sunquest upon order activation in ORCA.

Phone
606-1088

Testing Frequency
Daily

Availability
STAT or routine

Specimen
Plasma or Serum

Volume
0.5 mL

Pediatric Volume
Pediatric capillary collection: 200 µL serum collected in microtube or "bullet" tube

Container
5 mL lime top PST, green top, red top, gold top SST or orange top RST

Collection
Routine venipuncture or line draw

Special Handling
Protect specimen from light; direct exposure can decrease bilirubin values in specimens by 50% in 1 hour

Causes for Rejection
Hemolysis, misidentified specimens and requisitions, specimen QNS

Reference Ranges
0.2 – 1.3 mg/dL
TOTAL PROTEIN

Related Terms  Protein
Test included in these panels:
  • Comprehensive Metabolic Screen with calc. for globulin and A/G ratio
  • Comprehensive Metabolic Screen with HSCT subgroup
  • Hepatic Function Panel
  • Hepatic Function Panel with LD

Lab  Alliance Lab, Room G1-500
     Immunotherapy Lab, Room G6-097
     GI Oncology Lab, Room G7-220
Request Form  SCCA Clinical Lab Request: fill out completely, including ICD codes
              CPOE orders will be interfaced to Sunquest upon order activation in ORCA.
Phone  606-1088
Testing Frequency  Daily
Availability  STAT or routine
Specimen  Plasma or serum. Plasma samples will exhibit slightly higher total protein levels due to the presence of fibrinogen. Heparin is the recommended anticoagulant for plasma samples.
Volume  0.5 mL
Pediatric Volume  Pediatric capillary collection: 200 µL (0.2mL) serum collected in microtube or "bullet" tube
Container  5 mL lime top PST, green top, red top, gold top SST or orange top RST
Collection  Routine venipuncture or line draw
Interfering Substances  Gross hemolysis, lipemia, or bilirubin
Causes for Rejection  Misidentified specimens and requisitions, specimen QNS
Reference Ranges  6.0 – 8.2 g/dL
# URINE TOTAL PROTEIN

<table>
<thead>
<tr>
<th><strong>Related Terms</strong></th>
<th>Urine protein, Urine total protein</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lab</strong></td>
<td>Alliance Lab, Room G1-500</td>
</tr>
<tr>
<td><strong>Request Form</strong></td>
<td>SCCA Clinical Lab Request: write UPCRAT in the OTHER REQUEST section. Fill out completely, including ICD codes. CPOE orders will be interfaced to Sunquest upon order activation in ORCA.</td>
</tr>
<tr>
<td><strong>Phone</strong></td>
<td>606-1088</td>
</tr>
<tr>
<td><strong>Testing Frequency</strong></td>
<td>Daily</td>
</tr>
<tr>
<td><strong>Availability</strong></td>
<td>STAT or routine</td>
</tr>
<tr>
<td><strong>Specimen</strong></td>
<td>24-hour urine collection, random specimen also acceptable</td>
</tr>
<tr>
<td><strong>Volume</strong></td>
<td>1 mL</td>
</tr>
<tr>
<td><strong>Minimum Volume</strong></td>
<td>0.4 mL</td>
</tr>
<tr>
<td><strong>Container</strong></td>
<td>24-hour urine collection container, or plastic urine cup w/ tight-fitting lid</td>
</tr>
<tr>
<td><strong>Causes for Rejection</strong></td>
<td>Insufficient quantity, misidentified specimens and requisitions</td>
</tr>
<tr>
<td><strong>Reference Ranges</strong></td>
<td>0-14 mg/dL (random specimen)</td>
</tr>
<tr>
<td></td>
<td>0.05-0.08 g/24 hours (24-hour collection)</td>
</tr>
</tbody>
</table>
# TRIGLYCERIDES

**Related Terms**  
Trigs

**Test included in this panel**  
Lipid panel

**Lab**  
- Alliance Lab, Room G1-500  
- Immunotherapy, G6-097  
- GI Oncology Lab, Room G7-220

**Request Form**  
SCCA Clinical Lab Request: fill out completely, including ICD codes  
CPOE orders will be interfaced to Sunquest upon order activation in ORCA.

**Phone**  
606-1088

**Testing Frequency**  
Daily

**Availability**  
Routine

**Specimen**  
Plasma or Serum

**Volume**  
1 mL

**Pediatric Volume**  
Pediatric capillary collection: 500µL (0.5mL) serum collected in microtube or “bullet tube”

**Container**  
5 mL lime top PST, green top, red top, gold top SST or orange top RST

**Collection**  
Routine venipuncture or line draw

**Causes for Rejection**  
Misidentified specimens and requisitions, specimen QNS, improperly stored specimen, hemolysis, not fasting for at least 12 hours

**Reference Ranges**  

<table>
<thead>
<tr>
<th>Category</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desirable</td>
<td>&lt;150 mg/dL</td>
</tr>
<tr>
<td>Borderline</td>
<td>150-199 mg/dL</td>
</tr>
<tr>
<td>High</td>
<td>200-499 mg/dL</td>
</tr>
<tr>
<td>Very High</td>
<td>&gt;500 mg/dL</td>
</tr>
</tbody>
</table>
URIC ACID

Test included in this panel: Comprehensive Metabolic Panel with HSCT subgroup
Lab
  Alliance Lab, Room G1-500
  Immunotherapy, Room G6-097
  GI Oncology Lab, Room G7-220
Request Form
  SCCA Clinical Lab Request: fill out completely, including ICD codes
  CPOE orders will be interfaced to Sunquest upon order activation in ORCA.
Phone 606-1088
Testing Frequency Daily
Availability STAT or routine
Specimen Plasma or Serum
Volume 0.5 mL
Pediatric Volume Pediatric capillary collection: 200μL (0.2mL) serum collected in microtube or "bullet" tube
Container 5 mL lime top PST, green top, red top, gold top SST or orange top
RSTNO EDTA
Collection Routine venipuncture or line draw
Causes for Rejection Misidentified specimens and requisitions, specimen QNS
Reference Ranges

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>3.9 – 7.6 mg/dL</td>
<td>2.6-6.8 mg/dL</td>
</tr>
</tbody>
</table>
URINE CREATININE
CREATININE CLEARANCE

Test included in:

- Urine Creatinine
- Creatinine clearance
- Urine Protein/Creatinine ratio

Lab
Alliance Lab, Room G1-500

Request Form
SCCA Clinical Lab Request: fill out completely, including ICD codes
CPOE orders will be interfaced to Sunquest upon order activation in ORCA.

Phone
606-1088

Testing Frequency
Daily

Availability
STAT or routine

Specimen: Urine for Urine Creatinine
Aliquot of 4, 12 or 24-hour urine and a serum creatinine level within
48 hours of urine collection for a Creatinine Clearance

Volume
0.5 mL min.

Container
Clean, leakproof container.

Collection
No preservative needed, but if needed for other analytes, only Thymol or Toluene should be used.

Creatinine Clearance Patient Preparation

- Hydrate the patient by administering a minimum of 600 ml water.
  Withhold tea, coffee, and drugs on the day of collection.
- Have the patient void and discard that specimen. Note the time
  and begin the urine collection period.
- Save all urine from this time on.

(Continued)
Urine Creatinine, Creatinine Clearance, continued

- Collect a 4, 12, or 24-hour specimen and record exact times of starting and completion of collection. A precisely timed specimen is required. At the end of the collection period, the patient is to empty their bladder and add the urine to the collection container. Do not add any additional urine to the container after the collection period.
- Refrigerate the sample during collection.

Causes for Rejection
Incomplete collections for timed periods

Reference Ranges

<table>
<thead>
<tr>
<th>Test</th>
<th>Description</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urine Creatinine</td>
<td>Child 0-9 yrs</td>
<td>700-1800 mg/24 hrs</td>
</tr>
<tr>
<td></td>
<td>Male &gt; 9 yrs</td>
<td>1000-2000 mg/24 hrs</td>
</tr>
<tr>
<td></td>
<td>Female &gt; 9 yrs</td>
<td>700-1800 mg/24 hrs</td>
</tr>
<tr>
<td>Creatinine Clearance</td>
<td>Newborn</td>
<td>40 –60 mL/min/m²</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>75-120 mL/min</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>65-105 mL/min</td>
</tr>
</tbody>
</table>
URINE PROTEIN/URINE CREATININE RATIO

**Related Terms**  Urine Total Protein, Urine Creatinine

**Test included**  Urine Total Protein, Urine Creatinine, calculated ratio

**Lab**  Alliance Lab, Room G1-500

**Request Form**  SCCA Clinical Lab Request; write UPCRAT in the OTHER REQUEST section. Fill out completely, including ICD codes

CPOE orders will be interfaced to Sunquest upon order activation in ORCA.

**Phone**  606-1088

**Testing Frequency**  Daily

**Availability**  STAT or routine

**Specimen**  Random urine sample

**Volume**  1.0 mL

**Container**  Urine specimen cup

**Causes for Rejection**  Misidentified specimens and requisitions, specimen QNS

**Calculation**  
\[
\text{Urine Protein value} \div \text{Urine Creatininine value} = \text{Ratio}
\]
HLA TYPING

Related Terms
Histocompatibility Testing, HLA DNA, Serology

Lab
Clinical Immunogenetics Lab, 188 E. Blaine, Suite 250

Request Form
HLA Typing Requisition and New Admit.doc.

Fill out completely, including date, time and ICD codes.
Label and request must have two patient/donor identifiers.
For SCCA Ambulatory Clinic, a CPOE requisition will be generated for those lab tests requiring a requisition form.

Phone
606-7700 Lab Coordinator Office

FAX
606-1169

Availability
M – F 8:30am – 5pm. After 2:30 please call 606-7700 to alert lab of blood draws or late specimens. Specimens must arrive in CIL before 4pm on Friday or the day before a holiday.

Turnaround Time
See ‘CIL Turn Around Time Chart’

Specimen
Peripheral Blood

Volume/ Container
5 mL blood in red top tube and 30 mL blood in green top tubes (sodium heparin) (lithium heparin unacceptable)

Collection
Routine venipuncture or line draw

Special Handling
Room temperature, deliver to CIL immediately

Causes for Rejection
Misidentified specimens and requisitions, specimen QNS, improperly stored specimen or broken tubes.

After hours
Draw sample and keep specimen at room temperature.
Deliver to lab the next working day.

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CHIMERISM TESTING

Related Terms:  AMP-FLP (Amplified Fragment Length Polymorphism, Engraftment and Monitoring), STR (Short Tandem Repeat); VNTR (Variable Number Tandem Repeat).

Lab:  Clinical Immunogenetics Lab, 188 E. Blaine, Suite 250

Request Form:  Bone Marrow Procedure Order/Multiple Lab Requisition or Blood & Other Samples Physician's Order/Multiple Lab Requisition or Long Term Follow Up/Multiple Lab Request Form (for mail-in specimens)

Fill out completely, including date, time and ICD codes.
Label and request must have two patient/donor identifiers.

For SCCA Ambulatory Clinic, a CPOE requisition will be generated for those lab tests requiring a requisition form.

Phone:  606-1139 or 606-7700, FAX 606-1169

Availability:  M – F  8:30am – 5pm.  After 2:30 please call 606-7700 to alert lab of blood draws or late specimens.  Specimens must arrive in CIL before 4pm on Friday or the day before a holiday.

Turnaround Time:  See ‘CIL Turnaround Time Chart’

Specimen:  Peripheral Blood, Bone Marrow or Flow Cytometry Sorted White Cell subsets

Cell Sorting:  Send specimens to the Hematopathology Laboratory, using the appropriate request form listed above, when testing of lineage specific white blood cell subsets (such as CD3+ and CD33+) is required.  The Hematopathology Laboratory will isolate the requested cell fractions and forward them to the Clinical Immunogenetics Laboratory for chimerism testing.

Volume:  For peripheral blood 10mL; for bone marrow 1-2mL

Pediatric Volume:  Peripheral blood 5mL

Container:  Heparin – 20 units/mL of blood or bone marrow

Collection:  Routine venipuncture, line draw or bone marrow aspiration

Special Handling:  Room temperature, deliver to CIL immediately

Causes for Rejection:  Misidentified specimens and requisitions, specimen QNS, improperly stored specimen

After Hours:  Draw sample and keep at room temperature.  Deliver to lab the next working day.
CIL TURNAROUND TIMES
FOR HLA ADMIT WORKUPS AND CHIMERISM TESTING

<table>
<thead>
<tr>
<th>Patient/Donor Status</th>
<th>Specimen Rec'd by 2pm on:</th>
<th>Results faxed to Ambulatory Clinics and/or Unit by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matched family donor w/previous SCCA typing</td>
<td>Monday, Tuesday, Wednesday, Thursday, Friday</td>
<td>5pm on: Within 4-10 working days</td>
</tr>
<tr>
<td>URD or Mismatched family donor w/previous SCCA typing</td>
<td>Monday, Tuesday, Wednesday, Thursday, Friday</td>
<td>10am on: Within 4-10 working days</td>
</tr>
<tr>
<td>Matched/Mismatched No previous SCCA typing</td>
<td>Monday, Tuesday, Wednesday, Thursday, Friday</td>
<td>Within 6-10 working days</td>
</tr>
</tbody>
</table>

**Chimerism Testing**

Results faxed to source of test request and current attending 1-3 days of sample receipt.
D-DIMER

Related Terms
DDI

Lab
Alliance Lab, Room G1-500

Request Form
SCCA Clinical Lab Request: fill out completely, including ICD codes
CPOE orders will be interfaced to Sunquest upon order activation in
ORCA.

Phone
606-1088

Testing Frequency
Daily

Availability
STAT or routine

Specimen
Blood

Volume
4.5 mL

Pediatric volume
2.7 mL

Container
Blue top 3.2 % (sodium citrate) tube

Collection
If multiple tests are being drawn, draw coagulation studies second. If only a fibrinogen is being drawn, draw 1-2 mL into another Vacutainer®, discard, and then collect the fibrinogen tube. This procedure avoids contamination of the specimen with tissue thromboplastin. When it is necessary to obtain blood from indwelling arterial or venous catheters, the heparinized fluid infusion should be stopped, and the first 15 mL blood obtained through the indwelling catheter should not be utilized for any coagulation studies. The appropriate volume of blood for the needed coagulation studies should be withdrawn from the catheter and the heparin infusion resumed after obtaining the sample. Samples obtained from a catheter should be so indicated. It should be understood that all coagulation specimens should be obtained without heparin contamination. All coagulation tests are, to some extent, sensitive to heparin contamination. Transport to the laboratory as soon as possible. Specimen MUST be processed by Lab within 24 hrs of blood collection.

Causes for Rejection
Specimen clotted, hemolyzed, contaminated with heparin, specimen received more than 2 hours after collection, tubes under-filled or overfilled, misidentified specimens and requisitions

Reference Ranges
0-0.59 ug/mL FEU

Critical Values
none

After Hours
For preparation to send to UW: Centrifuge for 10 minutes. Remove plasma and re-spin plasma for 10 minutes. Decant and freeze. Send frozen on dry ice.

FIBRINOGEN
Related Terms
FIBCL
Lab
Alliance Lab, Room G1-500
Request Form
SCCA Clinical Lab Request: fill out completely, including ICD codes
CPOE orders will be interfaced to Sunquest upon order activation in ORCA.
Phone
606-1088
Testing Frequency
Daily
Availability
STAT or routine
Specimen
Blood
Volume
4.5 mL
Pediatric volume
2.7 mL
Container
Blue top 3.2 % (sodium citrate) tube
Collection
If multiple tests are being drawn, draw coagulation studies second. If only a fibrinogen is being drawn, draw 1-2 mL into another Vacutainer®, discard, and then collect the fibrinogen tube. This procedure avoids contamination of the specimen with tissue thromboplastin. When it is necessary to obtain blood from indwelling arterial or venous catheters, the heparinized fluid infusion should be stopped, and the first 15 mL blood obtained through the indwelling catheter should not be utilized for any coagulation studies. The appropriate volume of blood for the needed coagulation studies should be withdrawn from the catheter and the heparin infusion resumed after obtaining the sample. Samples obtained from a catheter should be so indicated. It should be understood that all coagulation specimens should be obtained without heparin contamination. All coagulation tests are, to some extent, sensitive to heparin contamination. Transport to the laboratory as soon as possible. Specimen MUST be processed by Lab within 24 hrs of blood collection.

(Continued)
Fibrinogen, continued

**Causes for Rejection**  Specimen clotted, hemolyzed, contaminated with heparin, specimen received more than 2 hours after collection, tubes under-filled or overfilled, misidentified specimens and requisitions

**Reference Ranges**  150 – 400 mg/dL

**Critical Values**  <100 mg/dL, possible effect, hemorrhage

**After Hours**  Centrifuge for 10 minutes. Remove plasma and re-spin plasma for 10 minutes. Decant and freeze. Send frozen on dry ice.
PARTIAL THROMBOPLASTIN TIME

**Related Terms**
Activated Partial Thromboplastin Time, aPTT, PTT

**Lab**
Alliance Lab, Room G1-500

**Request Form**
SCCA Clinical Lab Request: fill out completely, including ICD codes
CPOE orders will be interfaced to Sunquest upon order activation in
ORCA.

**Phone**
606-1088

**Testing Frequency**
Daily

**Availability**
STAT or routine

**Specimen**
Blood

**Volume**
4.5 mL

**Pediatric Volume**
2.7 mL

**Container**
Blue top (3.2 % sodium citrate) tube

**Collection**
Routine venipuncture or line draw. If multiple tests are being drawn, draw coagulation studies second. If only a partial thromboplastin time (PTT) is being drawn, draw 1-2 mL into another Vacutainer®, discard, and then collect the PTT. This collection procedure avoids contamination of the specimen with tissue thromboplastins or heparin. Must be processed within 6 hrs.

*Note:* For Heparin monitoring, MUST DRAW 5 mL BLUE TOP and process in 1hr.

**Causes for Rejection**
Specimen clotted, gross hemolysis, received more than 2 hours after collection, tubes under-filled or overfilled, misidentified specimens and requisitions

**Reference Ranges**
22 – 35 seconds

**Therapeutic Range**
60 – 100 seconds for patient on heparin therapy.

**Critical Value**
>120 seconds

**After Hours**
Centrifuge for 10 minutes. Remove plasma and re-spin plasma for 10 minutes. Decant and freeze. Send frozen on dry ice.
PROTHROMBIN TIME

**Related Terms**  
Protime, PT, PRO, ACCINR*

**Test includes**  
Prothrombin Time and International Normalization Ratio (INR)  
(*ACCINR includes INR result, only)

**Lab**  
Alliance Lab, Room G1-500

**Request Form**  
SCCA Clinical Lab Request: fill out completely, including ICD codes  
CPOE orders will be interfaced to Sunquest upon order activation in ORCA.

**Phone**  
606-1088

**Testing Frequency**  
Daily

**Availability**  
STAT or routine

**Specimen**  
Blood

**Volume**  
4.5 mL

**Pediatric Volume**  
2.7 mL

**Container**  
Blue top (3.2% sodium citrate) tube

**Collection**  
Routine venipuncture or line draw. If multiple tests are being drawn, draw coagulation studies second. If only a Prothrombin Time is being drawn, draw 1-2 mL into another Vacutainer®, discard, and then collect the Prothrombin Time. This collection procedure avoids contamination of the specimen with tissue thromboplastins or heparin. Specimen MUST be processed by Lab within 24 hrs of blood collection.

**Causes for Rejection**  
Specimen clotted, gross hemolysis, tubes under-filled or overfilled, misidentified specimens and requisitions.

**Reference Range**  
INR  0.8 – 1.3  
PRO 10.7 – 15.6 secs

**Therapeutic Range**  
INR  2.0 – 3.5; INR is applicable only to patients on stable coumadin therapy.

*(Continued)*
Prothrombin Time, continued

**Critical Values**
Non-anticoagulated patient, more than 44 seconds, possible effect is hemorrhage.
Anticoagulated patient, more than three times normal mean, possible effect is hemorrhage.
Critical Prothrombin Time is the PT that generates >5.0 INR.

**After Hours**
Centrifuge for 10 minutes. Remove plasma and re-spin plasma for 10 minutes. Decant and freeze. Send frozen on dry ice.
# THROMBIN TIME

<table>
<thead>
<tr>
<th><strong>Test includes</strong></th>
<th>Thrombin time</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lab</strong></td>
<td>Alliance Lab, Room G1-500</td>
</tr>
<tr>
<td><strong>Request Form</strong></td>
<td>SCCA Clinical Lab Request: fill out completely, including ICD codes CPOE orders will be interfaced to Sunquest upon order activation in ORCA.</td>
</tr>
<tr>
<td><strong>Phone</strong></td>
<td>606-1088</td>
</tr>
<tr>
<td><strong>Testing Frequency</strong></td>
<td>Daily</td>
</tr>
<tr>
<td><strong>Availability</strong></td>
<td>STAT or routine</td>
</tr>
<tr>
<td><strong>Specimen</strong></td>
<td>Blood</td>
</tr>
<tr>
<td><strong>Volume</strong></td>
<td>4.5 mL</td>
</tr>
<tr>
<td><strong>Pediatric Volume</strong></td>
<td>2.7 mL</td>
</tr>
<tr>
<td><strong>Container</strong></td>
<td>Blue top (3.2% sodium citrate) tube</td>
</tr>
<tr>
<td><strong>Collection</strong></td>
<td>Routine venipuncture or line draw. If multiple tests are being drawn, draw coagulation studies second. If only a Thrombin Time is being drawn, draw 1-2 mL into another Vacutainer®, discard, and then collect the Thrombin Time. This collection procedure avoids contamination of the specimen with tissue thromboplastins or heparin. Specimen MUST be processed by Lab within 6 hrs of blood collection.</td>
</tr>
<tr>
<td><strong>Causes for Rejection</strong></td>
<td>Specimen clotted, severely hemolyzed specimens, tubes under-filled or overfilled, misidentified specimens and requisitions.</td>
</tr>
<tr>
<td><strong>Reference Range</strong></td>
<td>16-25 seconds</td>
</tr>
</tbody>
</table>
## CYTOGENETICS STUDIES – CHROMOSOME ANALYSIS AND FISH

### Related Terms
- Molecular Cytogenetics, Chromosome Analysis,
- FISH (fluorescence in situ hybridization)

### Test includes
- Chromosome analysis or fluorescence in situ hybridization (FISH)

### Lab
- Cytogenetics Lab, Blaine, BL-103

### Request Form
- Bone Marrow Procedure Order/Multiple Lab Requisition

For Long Term Follow Up/Multiple Lab Request Form (for mail-in specimens)
- Fill out completely, including date, time and ICD codes.
- Label and request must have two patient/donor identifiers.

For SCCA Ambulatory Clinic, a CPOE requisition will be generated for those lab tests requiring a requisition form.

See [http://menu.labmed.washington.edu/oltg?action=search&search_type=text&search_text=evaluate&search_as_component=yes&search_cross_reference=yes&search_include_non_orderables](http://menu.labmed.washington.edu/oltg?action=search&search_type=text&search_text=evaluate&search_as_component=yes&search_cross_reference=yes&search_include_non_orderables) for additional information on ordering EVALHD testing.

### Phone
- 206-606-1390 main line

### Availability
- M – F  8am – 5pm
- After hours: on call 9am – 5pm weekends and holidays,
- Pager 206-340-7207

### Turnaround Time
- See ‘Cytogenetics Turnaround Time Table’

### Specimen
- Bone Marrow, Peripheral Blood, or Flow Cytometry Sorted

### White Cell subsets
- Cell Sorting: Send specimens to the UW Hematopathology Laboratory, using the appropriate request form listed above, when testing of lineage specific white blood cell subsets (such as CD3+ and CD33+) is required. The Hematopathology Laboratory will isolate the requested cell fractions and forward them to the Cytogenetics Laboratory for FISH testing.

### Volume
- For bone marrow 1-2mL; peripheral blood 5mL

### Pediatric volume
- For blood, infants 1-2mL.

### Container
- Sodium heparin (green top tube)

(Continued)
Cytogenetics Studies – Chromosome Analysis and FISH, continued

**Collection**  
Routine venipuncture line draw, or bone marrow aspiration.

**Special Handling**  
Room temperature; deliver promptly to Cytogenetics Lab.  
For cell sorting, then FISH testing, send to Alliance Lab for delivery to University of Washington Hematopathology Lab.

**Causes for Rejection**  
Misidentified specimens and requisitions, improperly stored specimens, severely clotted specimens, leaking specimens that pose a risk to technologist, specimens of questionable integrity.

**After Hours**  
Store specimens at room temperature until delivery to lab during day shift or on-call hours.

DO NOT HOLD SPECIMENS OVER THE WEEKEND - CONTACT PAGER. Pager: 206-340-7207

(On call weekends and holidays 9am – 5pm: Pager: 206-340-7207)
CYTOGENETICS STUDIES – GENOMIC ARRAY

Related Terms
CGAT, Array CGH, SNP array, DNA Microarray

Test includes
Genomic Array (CGAT)

Lab
Cytogenetics Lab, Blaine, BL-103

Request Form
ORCA generated order or 
Bone Marrow Procedure Order/Multiple Lab Requisition 
or 
Long Term Follow Up/Multiple Lab Request Form (for mail-in specimens). Fill out completely, including date, time and ICD codes. Label and request must have two patient/donor identifiers. 
For SCCA Ambulatory Clinic, a CPOE requisition will be generated for those lab tests requiring a requisition form.

http://menu.labmed.washington.edu/oltg?action=search&search_type=text&search_text=evaluate&search_as_component=yes&search_cross_reference=yes&search_include_non_orderables for additional information on ordering EVALHD testing.

Phone
206-606-1390 main line

Availability
M – F 8am – 5pm

After hours:
on call 9am – 5pm weekends and holidays, Pager: 206-340-7207

Turnaround Time
See ‘Cytogenetics Turnaround Time Table’

Specimen
Bone Marrow, Peripheral Blood, Tissue (fresh, frozen, or FFPE)

Volume
For bone marrow 1-2mL; peripheral blood 3-5mL, tissue (contact lab)

Container
Marrow and Blood: Put in an EDTA (purple top) tube. Sodium heparin (green top), Sodium citrate (blue top) and Acid citrate dextrose (yellow top) are also acceptable. After marrow is put into tubes, the tubes must be mixed well to prevent clotting. Tissue: contact lab

Collection
Routine venipuncture, line draw or bone marrow aspiration; surgical excision for tissue

Special Handling
Deliver immediately to Cytogenetics Lab. Keep refrigerated if delivery delayed. Room temperature OK if delivered within a few hours of draw.

Causes for Rejection
Misidentified specimens and requisitions, frozen or heated marrow or blood, severely clotted specimens, any specimen possibly exposed to contaminating DNA or RNA, leaking specimens that pose a risk to technologist, and specimens of questionable integrity.

(Continued)
Cytogenetics Studies-Genomic Array, continued

**After Hours**

Store specimens refrigerated or at 2-8°C until delivery to lab during day shift or on-call hours.

DO NOT HOLD SPECIMENS OVER THE WEEKEND - CONTACT PAGER. Pager: 206-340-7207

(On call weekends and holidays 9am – 5pm: Pager: 206-340-7207)
TURNAROUND TIMES  
CYTOGENETICS

TURNAROUND TIMES  Chromosome Analysis and FISH

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Results by:***</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromosome Analysis and FISH</td>
<td>5–10 working days with day 1 as day of receipt. Pretransplant samples are prioritized for day 5 completion. Samples requiring mitogen stimulation and or cultures longer than 24 hours may not be completed by day 5.</td>
</tr>
</tbody>
</table>

Please indicate special circumstances on requisition form and/or call 206-606-1390.

Unusual circumstances may cause a delay in availability of results. During times of heavy workload, samples will be prioritized according to known clinical urgency. If results are needed sooner than the above stated time frame, please indicate this on requisition form and/or call 206-606-1390.

TURNAROUND TIMES  Genomic Array

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Results by:***</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genomic Array</td>
<td>5–10 working days with day 1 as day of receipt; up to 15 days for FFPE samples.</td>
</tr>
</tbody>
</table>

Please indicate special circumstances on requisition form and/or call 206-606-1390.

Unusual circumstances may cause a delay in availability of results. During times of heavy workload, samples will be prioritized according to known clinical urgency. If results are needed sooner than the above stated time frame, please indicate this on requisition form and/or call 206-606-1390.

*** Unexpected abnormal results are reported to the attending physician or primary provider. All reports are uploaded to Mindscape/ORCA. Reports are also faxed to patient locations without Mindscape/ORCA access.
## CEREBRAL SPINAL FLUID CELL COUNT

<table>
<thead>
<tr>
<th>Related Terms</th>
<th>CSF cell count</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Test Includes</strong></td>
<td>White blood cell count, red blood cell count, white blood cell differential (includes all nucleated cells observed on concentrated smear). Smears also sent to UWMC Hematopathology for microscopic examination.</td>
</tr>
<tr>
<td><strong>Lab</strong></td>
<td>Alliance Lab, Room G1-500</td>
</tr>
<tr>
<td><strong>Request Form</strong></td>
<td>SCCA Clinical Lab Request: fill out completely, including ICD codes. CPOE orders will be interfaced to Sunquest upon order activation in ORCA.</td>
</tr>
<tr>
<td><strong>Phone</strong></td>
<td>606-1088</td>
</tr>
<tr>
<td><strong>Testing Frequency</strong></td>
<td>Daily</td>
</tr>
<tr>
<td><strong>Availability</strong></td>
<td>STAT or routine</td>
</tr>
<tr>
<td><strong>Specimen</strong></td>
<td>Cerebral spinal fluid</td>
</tr>
<tr>
<td><strong>Volume</strong></td>
<td>1 mL</td>
</tr>
<tr>
<td><strong>Minimum Volume</strong></td>
<td>0.5 mL</td>
</tr>
<tr>
<td><strong>Container</strong></td>
<td>Sterile Tube; EDTA (lavender-top tube) if bloody</td>
</tr>
<tr>
<td><strong>Collection</strong></td>
<td>Lumbar puncture</td>
</tr>
<tr>
<td><strong>Causes for Rejection</strong></td>
<td>Insufficient quantity, misidentified specimens and requisitions</td>
</tr>
<tr>
<td><strong>Reference Ranges</strong></td>
<td>0 rbc/uL</td>
</tr>
<tr>
<td></td>
<td>0-5 mononuclear (lymphocytes and/or monocytes) cells/uL</td>
</tr>
<tr>
<td></td>
<td>Differential</td>
</tr>
<tr>
<td></td>
<td>Neutrophils 2% +/- 4%</td>
</tr>
<tr>
<td></td>
<td>Lymphocytes 60% +/- 20%</td>
</tr>
<tr>
<td></td>
<td>Monocytes 30% +/- 15%</td>
</tr>
</tbody>
</table>
COMPLETE BLOOD COUNT AND DIFFERENTIAL

Related Terms        CBC, Complete CBC

Panels Available     CBC (Hemogram) = WBC, RBC, Hgb, HCT, MCV, MCH, MCHC &
                      platelets

CBANC = CBC & Absolute Neutrophil Count

CBD = CBC & differential

Panels Include

Measured Parameters       Hemoglobin (Hgb), platelets (PLT), red blood cells (RBC), white blood
                          cells (WBC), and hematocrit (HCT).

Calculated Parameters   Mean corpuscular volume (MCV), mean corpuscular hemoglobin
                          (MCH), mean corpuscular hemoglobin concentration (MCHC), red blood cell distribution width
                          (RDW), and mean platelet volume (MPV).

Auto Differential         Lymphocytes, Neutrophils, Monocytes, Eosinophils, and Basophils
                          expressed as Absolute Number and % of total WBC.

Manual Differential      Cells in auto diff plus metamyelocytes, myelocytes, promyelocytes,
                          blasts, plasma cells, hairy cells, unclassified cells (description provided) and nRBCs.

Lab                      Alliance Lab, Room G1-500
                          Immunotherapy, G6-097
                          GI Oncology Lab, Room G7-220

Request Form             SCCA Clinical Lab Request: fill out completely, including ICD codes
                          CPOE orders will be interfaced to Sunquest upon order activation in
                          ORCA.

Phone                    606-1088

Testing Frequency       Daily

Availability            STAT or routine

Specimen                Blood

Volume                  2 – 3 mL

Pediatric Volume        One properly filled Microtainer™ (EDTA) tube for pediatric capillary
                        collection.
                        (Continued)
Complete Blood Count and Differential, continued

Storage Instructions For best results, deliver to lab within 1 hour. Accepted if <24 hours from time of draw and sample was refrigerated or if less than 8 hours from the time of draw and sample not refrigerated.

Container EDTA Vacutainer® tube

Collection Routine venipuncture or line draw

Causes for Rejection Clotted specimen, insufficient quantity, old specimen, hemolysis, and misidentified specimens and requisitions

Reference Ranges Click here

Critical Values See table below

<table>
<thead>
<tr>
<th>Critical Values</th>
<th>Less than</th>
<th>Greater than</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absolute neutrophils</td>
<td>0.5</td>
<td>N/A</td>
<td>(10^5/\mu L)</td>
</tr>
<tr>
<td>Hematocrit</td>
<td>20</td>
<td>None</td>
<td>%</td>
</tr>
<tr>
<td>Platelet</td>
<td>20</td>
<td>1000</td>
<td>(10^3/\mu L)</td>
</tr>
</tbody>
</table>

Interfering Substances High WBC counts, sickle cells, RBC fragments, cold agglutinins, elevated lipids, elevated chylomicrons, elevated bilirubin, nucleated red blood cells, circulating micro-megakaryocytes, elevated serum urea nitrogen, clumped platelets, and inappropriate anticoagulant.
ERYTHROCYTE SEDIMENTATION RATE

**Related Terms**  
ESR, Sed Rate

**Lab**  
Alliance Lab, Room G1-500

**Request Form**  
SCCA Clinical Lab Request: fill out completely, including ICD codes  
CPOE orders will be interfaced to Sunquest upon order activation in ORCA.

**Phone**  
606-1088

**Testing Frequency**  
Daily

**Availability**  
STAT or routine

**Specimen**  
Blood

**Volume**  
2mL

**Container**  
2.4 mL black top Vacutainer® tube  
2.4 mL lavender top Vacutainer® tube  
*Unacceptable*: any Microtainer tube

**Storage Instructions**  
Black top (citrate) within 2 hours  
Lavender top (EDTA) at room temperature within 4 hours  
Lavender top (EDTA) refrigerated within 12 hours

**Collection**  
Routine venipuncture or line draw

**Causes for Rejection**  
Clotted specimen, insufficient quantity, misidentified specimens and requisitions

**Reference Ranges**

<table>
<thead>
<tr>
<th>Age</th>
<th>Female Range</th>
<th>Male Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>6m - 11y</td>
<td>0-10 mm/hr</td>
<td>6m - 11y</td>
</tr>
<tr>
<td>12y-</td>
<td>0-20 mm/hr</td>
<td>12y-</td>
</tr>
</tbody>
</table>
HEMATOCRIT

**Related Terms**  Hct, Crit

**Test included in these panels**
- CBC
- CBANC
- CBD
- HBHCT

**Lab**  
- Alliance Lab, Room G1-500
- Immunotherapy, Room G6-097
- GI Oncology Lab, Room G7-220

**Request Form**  
SCCA Clinical Lab Request: fill out completely, including ICD codes

**CPOE orders will be interfaced to Sunquest upon order activation in ORCA.**

**Phone**  606-1088

**Testing Frequency**  Daily

**Availability**  STAT or routine

**Specimen**  Blood

**Volume**  2 mL

**Pediatric Volume**  One properly filled Microtainer™ (EDTA) tube for pediatric capillary collection.

**Container**  Lavender top (EDTA) tube

**Collection**  Routine venipuncture or line draw

**Causes for Rejection**  Clotted specimen, insufficient quantity, old specimen, hemolysis, misidentified specimens and requisitions

**Reference Ranges**  see Complete Blood Count

**Critical Values**  see Complete Blood Count

---

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PLATELET COUNT

Related Terms. Platelets, Thrombocyte Count

Test included in these panels
  • CBC
  • CBANC
  • CBD

Lab
  Alliance Lab, Room G1-500
  Immunotherapy, Room G6-097
  GI Oncology Lab, Room G7-220

Request Form
  SCCA Clinical Lab Request: fill out completely, including ICD codes
  CPOE orders will be interfaced to Sunquest upon order activation in ORCA.

Phone
  606-1088

Testing Frequency
  Daily

Availability
  STAT or routine

Specimen
  Blood

Volume
  2 mL

Pediatric Volume
  One properly filled Microtainer™ (EDTA) tube for pediatric capillary collection.

Container
  Lavender top (EDTA) tube.
  May also be drawn in blue top (citrate) if platelet clumps are present (Platelet values will be corrected for the dilution factor).

Collection
  Routine venipuncture or line draw

Causes for Rejection
  Clotted specimen, insufficient quantity, old specimen, hemolysis, misidentified specimens and requisitions

Reference Ranges
  see Complete Blood Count

Critical Values
  see Complete Blood Count
RETICULOCYTE COUNT

**Related Terms**
- Retic Count

**Test Includes**
- An Absolute Reticulocyte count and Reticulocytes expressed as a percentage in a total of 1000 RBCs

**Lab**
- Alliance Lab, Room G1-500
- Immunotherapy, Room G6-097
- GI Oncology Lab, Room G7-220

**Request Form**
- SCCA Clinical Lab Request: fill out completely, including ICD codes
- CPOE orders will be interfaced to Sunquest upon order activation in ORCA.

**Phone**
- 606-1088

**Testing Frequency**
- Daily

**Availability**
- STAT or routine

**Specimen**
- Blood

**Volume**
- 2mL

**Pediatric Volume**
- One properly filled Microtainer™ (EDTA) tube for pediatric capillary collection

**Container**
- Lavender top (EDTA) tube

**Collection**
- Routine venipuncture or line draw

**Causes for Rejection**
- Clotted specimen, insufficient quantity, old specimen, hemolysis, misidentified specimens and requisitions

**Reference Ranges**

**Retic**

<table>
<thead>
<tr>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Range</td>
</tr>
<tr>
<td>6 mos-</td>
<td>0.5 – 1.7</td>
</tr>
</tbody>
</table>

**Retic Absolute**

<table>
<thead>
<tr>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Range</td>
</tr>
<tr>
<td>15y –</td>
<td>20 – 65</td>
</tr>
</tbody>
</table>

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# BONE MARROW ASPIRATE / BIOPSY

**Related Terms**
Bone marrow, iliac crest, bone marrow core

**Test Includes**
Gross and microscopic examination with diagnosis, other laboratory tests as ordered

**Lab**
Alliance Lab staff assists with Bone Marrow procedures and distributes specimens to other laboratories including Hematology, Pathology, UW Hematopathology, Microbiology and Virology.

**Request Form**
SCCA Requisition(s) specific for above laboratories
Fill out completely, including ICD codes
For SCCA Ambulatory Clinic, a CPOE requisition will be generated for those lab tests requiring a requisition form.

**Phone**
606-1088

**Availability**
M – F 8am – 4:30pm

**Turnaround Time**
If the specimen is placed in fixative by 1pm and delivered to Pathology by 3pm the same day, results are provided the second business day. If time frames are not met, results are provided the third business day. Holidays may extend result times. Refer to other entries, for turnaround times of other testing.

Pathology hours are:
Monday 9am – 6:30pm,
Tuesday-Friday 6:00am – 6:30pm
Saturday 6am – 2:30pm
Sundays and after hours if STAT processing is required, contact the on-call SCCA Pathology Technologist at 573-0892.

**Specimen**
Approximately 2 cc of bone marrow aspirate collected in syringe with no additive to be placed in a 6mL lavender EDTA tube. Invert tube 8-10 times to coat the walls of the tube to ensure adequate mixing of additive with aspirate. Pour the aspirate into a petri dish or watch glass to make 12 aspirate coverslips. After cover slips are made, place 1cc of aspirate back into the 6mL lavender top tube for Flow Cytometry, the rest of the sample to be sent to Pathology as requested. Place 3cc bone marrow aspirate collected in syringe with no additive into a 4mL lavender top tube for Molecular. Place 3cc bone marrow aspirate collected in Preservative-free Heparin syringe for Cytogenetics in a 4 mL green top tube.

*(Continued)*
Bone Marrow Aspirate/Biopsy, continued

If cultures for bacteria, fungus and/or AFB are requested, 1-3cc of bone marrow aspirate is placed into a SPS or AFB tube.

For viral cultures, 1-3cc of bone marrow aspirate is placed into an EDTA tube. Bone Marrow aspirate (1-2cc) for CMV PCR is placed into an EDTA tube.

If a bone marrow biopsy is obtained, make 3-4 touch preps and then place the bone marrow core removed for biopsy diagnostic interpretation into 10% buffered formalin.

If there is a special request or special handling is needed, contact the Bone Marrow Lead at 606-1088 or page 206-540-3431.

**Container**  
Well-constructed container with 10% buffered formalin with secure lid and sealed plastic bag for the bone biopsy.

**Collection**  
Bone marrow aspirate and bone marrow core biopsy

**Causes for Rejection**  
Improper handling, misidentified specimens and requisitions

**After Hours**  
To arrange for a bone marrow tech to assist after available hours

M – F (8am – 4:30pm) call the Specimen Processing staff at 606-1088.

For all testing done at UW, contact UW Hematopathology Lab at 598-6231 to arrange specimen processing.
BRONCHOALVEOLAR LAVAGE

Related Terms
BAL, Bronchial Aspirate, Bronchial Wash

Test Includes
Detection of abnormal cells, malignant cells, infectious agents

Lab
SCCA Pathology, Room G7-910

Request Form
Anatomic Pathology Specimen Request Form.
Complete a Lab Medicine Microbiology and/or Virology Request if ordered. Fill out completely, including ICD codes

Phone
606-1355

Availability
Monday 9am – 6:30pm
Tuesday – Friday 6:00am – 6:30pm
Saturday 6:00am – 2:30pm

Sundays and all other times; if STAT processing is required, contact the on-call Pathology Technologist at 573-0892.

Turnaround Time
Preliminary results are available within 3.5 hours of specimen receipt at SCCA Pathology; final report is provided the next business day.

Specimen
Bronchial wash fluid or bronchoalveolar lavage fluid

Specimen Collection:
Bronchial Washings Pass the bronchoscope transnasally or transorally in nonintubated patients or via the endotracheal tube in intubated patients. Wedge the tip of the bronchoscope in a segmental bronchus. Inject sterile nonbacteriostatic saline (generally 5- to 20-ml aliquots) from a syringe through a biopsy channel of the bronchoscope. Gently suction the saline into a sterile container before administering the next aliquot. Keep aliquots separate during collection. Send to laboratory immediately. Refrigerate if delay is unavoidable.

(Continued)
Bronchoalveolar Lavage, continued

Bronchial Brushing  Pass the bronchoscope transnasally or transorally in nonintubated patients or via the endotracheal tube in intubated patients. Insert a telescoping double catheter plugged with polyethylene glycol at the distal end (to prevent contamination of the bronchial brush) through the biopsy channel of the bronchoscope. Once the brushing is obtained, cut off the brush end and send it to the laboratory in physiological saline. Send to laboratory immediately. Refrigerate if delay is unavoidable.

**Volume**  Minimum volume is 5 mL

**Container**  Well-constructed, sterile container with secure lid and sealed plastic bag

**Specimen Handling**

<table>
<thead>
<tr>
<th>Collection from a Patient at SCCA Ambulatory Clinic</th>
</tr>
</thead>
<tbody>
<tr>
<td>▶ Notify SCCA Pathology in advance of procedure by calling 606-1355. Outside normal business hours contact the on-call Pathology Technologist at 573-0892.</td>
</tr>
<tr>
<td>▶ Pathology specimens should be sent immediately, unfixed, and at ambient temperature to the SCCA Pathology Laboratory.</td>
</tr>
<tr>
<td>▶ Pulmonary physicians will divide the specimen for Microbiology and Virology culture.</td>
</tr>
<tr>
<td>▶ Specimens for culture should be delivered to the Alliance Laboratory for transport to the Microbiology and Virology Labs.</td>
</tr>
<tr>
<td>▶ Specimen delivered by courier to SCCA Pathology (G7-910)</td>
</tr>
<tr>
<td>▶ SCCA Histology Tech accesses the specimen in the computer immediately. If there is a need to evaluate the specimen for malignancy it will be sent to Harborview Medical Center Cytology.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Collection from a Patient at UWMC for infection</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>7am to 4:30pm Mon – Fri</strong>  <strong>4:30pm to 7am Mon – Fri</strong></td>
</tr>
<tr>
<td><strong>Business Hours</strong>  <strong>Weekends &amp; Holidays</strong></td>
</tr>
<tr>
<td>▶ Call the SCCA Pathology Department IN ADVANCE at 606-1355. Call the in-house courier at 598-8603 for a STAT pick-up.</td>
</tr>
<tr>
<td><strong>Saturdays</strong> follow the procedure below except between 6:00am to 2pm - during these hours notify the Saturday Tech in the SCCA Pathology Department at 606-1355.</td>
</tr>
</tbody>
</table>

(Continued)
Bronchoalveolar Lavage, continued

- BAL specimens are routed to Microbiology for dividing and distributed to Pathology and Virology Labs.
- In ADVANCE contact the SCCA Pathology Tech at 573-0892
- BAL specimens are routed to Microbiology for dividing and distributed to Pathology and Virology Labs.
- Specimen delivered by courier to SCCA Pathology (G7-910)
- Transport all Pathology specimens in shipping containers at ambient temperature.
- Send to SCCA Pathology Lab, Room G7-910.
- Call SCCA Pathology Tech and tell them the specimen is being shipped.

<table>
<thead>
<tr>
<th>Collection on a Patient at UWMC for malignancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Specimen delivered by UWMC courier or Pulmonary staff to UWMC Pathology (EC 239)</td>
</tr>
<tr>
<td>- UWMC Histology Tech accession the specimen in the computer and sends the specimen to Harborview Medical Center for processing.</td>
</tr>
</tbody>
</table>

**Causes for Rejection**  Delayed delivery of fresh specimens, misidentified specimens and requisitions, insufficient pertinent clinical history.
ENDOSCOPY

**Test includes**  Gross and microscopic exam with diagnosis  
**Lab**  SCCA Pathology, Room G7-910  
**Request Form**  Anatomic Pathology Specimen Request Form  
Complete a Lab Medicine Microbiology and/or Virology Request if ordered. Fill out completely, including ICD codes  
For SCCA Ambulatory Clinic, a CPOE requisition will be generated for those lab tests requiring a requisition form.  
**Phone**  606-1355  
**Availability**  Monday  9:00am – 6:30pm  
Tuesday-Friday  6:00am – 6:30pm  
Saturday  6:00am – 2:30pm  
Sundays and all other times, if STAT processing is required, contact the on-call Pathology Technologist at 573-0982.  
**Turnaround Time**  If specimen is placed in fixative by 1pm and delivered to SCCA Pathology by 3pm, results will be provided the second business day.  
If the time frame is not met, results are provided on the third business day. Holidays may extend result times.  
**Container**  Well-constructed container with 10% buffered formalin fixative with secure lid and sealed plastic bag.  
**Specimen Handling**  
<table>
<thead>
<tr>
<th>Collection on a Patient at SCCA Ambulatory Clinic</th>
</tr>
</thead>
</table>
| ➤ Place biopsies for morphology in 10% Buffered formalin, noting on the bottle the date and time of placement in the fixative.  
➤ Deliver to SCCA Pathology.  
➤ Biopsies for culture should be placed in transport media and taken to the Alliance Laboratory for transport to the Microbiology and Virology Labs. |

(Continued)
### Endoscopy, continued

#### Collection on a HSCT Patient at UWMC

<table>
<thead>
<tr>
<th>7am to 4:30pm Mon – Fri Business Hours</th>
<th>4:30pm to 7am Mon – Fri Weekends &amp; Holidays</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tissue for culture should be sent directly from the procedure room to UWMC Microbiology and/or Virology.</td>
<td><strong>Saturdays</strong> follow the procedure below except between 6am to 2pm During these hours notify the Saturday Tech in the SCCA Pathology Department at 606-1355</td>
</tr>
<tr>
<td>Place Pathology specimens in 10% buffered formalin fixative.</td>
<td>▶ In ADVANCE contact the SCCA Pathology Tech at 573-0892</td>
</tr>
<tr>
<td>Accession specimen</td>
<td>▶ Tissue for culture should be sent directly from the procedure room to UWMC Microbiology and/or Virology.</td>
</tr>
</tbody>
</table>

- Package specimen for transport. Transport all Pathology specimens in shipping containers at ambient temperature.
- Send to SCCA Pathology Lab, Room G7-910.
- Use a courier to transport the package to the commodities box.

**After hours: do not send the specimen to UWMC Pathology Department.**

#### Collection of SCCA GenOnc/Heme or UWMC Patients at UWMC

- Specimen in 10% buffered formalin fixative delivered by UWMC courier or Pulmonary staff to UWMC Pathology (EC 239).

**Causes for Rejection** Improper handling, misidentified specimens and requisitions.
FINE NEEDLE ASPIRATIONS

Related Terms  
FNAs

Test Includes  
Gross and microscopic exam with diagnosis

Lab  
Harborview Cytology

Request Form  
University of Washington Medical Centers/Harborview Medical Center Cytology Request. Fill out completely, including ICD codes. For SCCA Ambulatory Clinic, a CPOE requisition will be generated for those lab tests requiring a requisition form.

Phone  
Harborview Cytology  744-4279

Availability  
Monday – Friday 8am – 5pm

Specimen Collection  
Fine Needle Aspirate (FNA)

For deep aspirates, sterile technique is required for cleansing of the skin and local anesthetic is usually required. A quick motion should be used in passing the needle through the skin. The needle is then advanced through the subcutaneous tissue into the mass. With the needle in the mass, the needle tip should be moved in short motions initially to loosen cells within the mass. Negative pressure is then applied by pulling back on the plunger of the syringe. If blood or material appears in the hub of the needle, the aspiration should be stopped. Prior to withdrawing the needle, negative pressure must be released to prevent suction of the material into the barrel of the syringe when the needle exits the skin. The fluid may be used to prepare smears. These slides should be immediately fixed in 95% ethanol. The fluid may also be deposited into the vial of CytoLyt solution.

(Continued)
**Fine Needle Aspirations, continued**

**Specimen Handling**

<table>
<thead>
<tr>
<th>Collection at SCCA Ambulatory Clinic</th>
</tr>
</thead>
<tbody>
<tr>
<td>▶ Deliver the specimen to SCCA Pathology.</td>
</tr>
<tr>
<td>▶ SCCA Pathology Tech will accession the specimen. It will be sent via courier to Harborview Cytology.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Collection on a HSCT Patient at UWMC</th>
</tr>
</thead>
</table>
| **7am to 4:30pm Mon – Fri**  
**Business Hours** | **4:30pm to 7am Mon – Fri.**  
**Weekends & Holidays** |
| ▶ Immediately deliver Pathology specimens to UWMC Pathology |
| ▶ All FNAs will be sent to Harborview Cytology for processing. |
| ▶ In ADVANCE page UWMC on-call Histology Tech (663-8098) |
| ▶ Immediately deliver Pathology specimens to UWMC Pathology |
| ▶ All FNAs will be sent by UWMC Pathology to Harborview Cytology |

**Causes for Rejection**  Improper handling, misidentified specimens, and requisitions
LIP OR SKIN BIOPSY

**Test Includes**  Gross and microscopic exam with diagnosis

**Lab**  SCCA Pathology, Room G7-910

**Request Form**  Anatomic Pathology Specimen Request Form

Complete a Lab Medicine Microbiology and/or Virology Request if ordered

Fill out completely, including ICD codes

For SCCA Ambulatory Clinic, a CPOE requisition will be generated for those lab tests requiring a requisition form.

**Phone**  606-1355

**Availability**  Monday 9:00am – 6:30pm  
Tuesday – Friday  6:00am – 6:30pm  
Saturday  6:00am – 2:30pm

Sundays and all other times, if STAT processing is required, contact the on-call Pathology Technologist at 573-0892

**Turnaround Time**  If specimen is placed in fixative by 1pm and delivered to SCCA Pathology by 3pm, results will be provided the second business day.

If the time frame is not met, results are provided on the third business day. Holidays may extend result times.

**Container**  Container with 10% buffered formalin

**Specimen Handling**

<table>
<thead>
<tr>
<th>Collection at SCCA Ambulatory Clinic</th>
</tr>
</thead>
<tbody>
<tr>
<td>▶ If Microbiology and/or Virology culture is requested, place fresh specimen in appropriate transport media.</td>
</tr>
<tr>
<td>▶ Specimens for culture should be delivered to the Alliance Laboratory for transport to the Microbiology and/or Virology Labs.</td>
</tr>
<tr>
<td>▶ Pathology specimens should be placed immediately to 10% buffered formalin at ambient temperature and sent to the SCCA Pathology laboratory.</td>
</tr>
</tbody>
</table>

*(Continued)*
### Collection on a HSCT Patient at UWMC

<table>
<thead>
<tr>
<th>7am to 4:30pm Mon – Fri</th>
<th>4:30pm to 7am Mon – Fri</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Business Hours</strong></td>
<td><strong>Weekends &amp; Holidays</strong></td>
</tr>
</tbody>
</table>

- If fungal or bacterial infection is suspected, fresh tissue for culture should be sent directly from the procedure room to UWMC Microbiology and/or Virology.
- Place specimens in 10% buffered formalin and deliver to UWMC Pathology (EC 239) for routing to SCCA Pathology Lab
- Accession specimen

<table>
<thead>
<tr>
<th>7am to 4:30pm Mon – Fri</th>
<th>4:30pm to 7am Mon – Fri</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Business Hours</strong></td>
<td><strong>Weekends &amp; Holidays</strong></td>
</tr>
</tbody>
</table>

- Saturdays follow the procedure below except between 6am to 2pm
  - During these hours notify the Saturday Tech in the SCCA Pathology Department at 606-1355
  - In ADVANCE contact the SCCA Pathology Tech at 573-0892
  - Place tissue in 10% buffered formalin and deliver from the floor via Delivery Express to the Pathology Department at the SCCA, Room G7-910.

- After hours: do not send the specimen to UWMC Pathology Department.

### Collection of SCCA GenOnc/Heme or UWMC Patients at UWMC

- Specimen in 10% formalin delivered to UWMC Pathology (EC 239)
- UWMC Histology Tech accesses the specimen in the computer for processing at UWMC Anatomical Pathology.

### Causes for Rejection
Improper handling, misidentified specimens and requisitions
LIVER BIOPSY

Test Includes: Gross and microscopic exam with diagnosis
Lab: SCCA Pathology, Room G7-910
Request Form: Anatomic Pathology Specimen Request Form
Complete a Lab Medicine Microbiology Request and/or Virology Request if ordered

Fill out completely, including ICD codes
For SCCA Ambulatory Clinic, a CPOE requisition will be generated for those lab tests requiring a requisition form.
Phone: 606-1355
Availability: Monday 9:00am – 6:30pm
Tuesday- Friday 6:00am – 6:30pm
Saturday 6:00am to 2:30pm

Sundays and all other times, if STAT processing is required, contact the on-call Pathology Technologist at 573-0892.

Turnaround Time: For specimens received in SCCA Pathology by 3pm, results will be provided the second business day. If the time frame is not met, results are provided on the third business day. Holidays may extend result times.
Container: Submit specimens for culture in a sterile container with secure lid.
Biopsies for morphology are placed in 10% buffered formalin.

(Continued)
Liver Biopsy, continued

Specimen Handling

<table>
<thead>
<tr>
<th>Collection on a HSCT Patient at UWMC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>7am to 4:30pm Mon – Fri</strong></td>
</tr>
<tr>
<td><strong>Business Hours</strong></td>
</tr>
<tr>
<td>IN ADVANCE call the SCCA Pathology Department at 606-1355. Call the in-house courier at 598-8603 for a STAT pick-up.</td>
</tr>
<tr>
<td>Place specimens in 10% buffered formalin fixative and deliver to UWMC Pathology (EC 239) immediately for routing to SCCA Pathology Lab.</td>
</tr>
<tr>
<td>If fulminant viral hepatitis or an infectious abscess is suspected, tissue for culture should be sent directly from the procedure room to UWMC Microbiology and/or Virology.</td>
</tr>
<tr>
<td>Accession specimen</td>
</tr>
<tr>
<td>Package specimen for transport. Transport all Pathology specimens in shipping containers at ambient temperature.</td>
</tr>
<tr>
<td>Send to SCCA Pathology Lab, Room G7-910.</td>
</tr>
<tr>
<td>Call SCCA Pathology Tech and tell them the specimen is being shipped.</td>
</tr>
<tr>
<td>Have a courier transport the package to the commodities box.</td>
</tr>
</tbody>
</table>

(Continued)
Liver Biopsy, continued

<table>
<thead>
<tr>
<th>Collection of SCCA GenOnc/Heme or UWMC Patients at UWMC</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Specimen prepared as requested by surgeon.</td>
</tr>
<tr>
<td>• If the procedure is done in the Operating Room, place the specimen in the Operating Room Pathology refrigerator. It will be picked up by UWMC Pathology Tech.</td>
</tr>
<tr>
<td>• If done in Interventional Radiology, specimen delivered by Intervention Radiology staff to UWMC Pathology (EC 239)</td>
</tr>
<tr>
<td>• UWMC Histology Tech accesses the specimen in the computer immediately and sets up for processing at UWMC Anatomical Pathology.</td>
</tr>
</tbody>
</table>

**Causes for Rejection**  Improper handling, misidentified specimens and requisitions
**LUNG BIOPSY**

**Test Includes**  
Gross and microscopic exam with diagnosis

**Lab**  
SCCA Pathology, Room G7-910

**Request Form**  
Anatomic Pathology Specimen Request Form

Fill out completely, including ICD codes  
For SCCA Ambulatory Clinic, a CPOE requisition will be generated for those lab tests requiring a requisition form.

**Phone**  
606-1355

**Availability**  
Monday 9:00am – 6:30pm  
Tuesday – Friday 6:00am – 6:30pm  
Saturday 6:00am to 2:30pm  
Sundays and all other times, if STAT processing is required, contact the on call Pathology Technologist at 573-0982.

**Turnaround Time**  
If specimen is delivered to SCCA Pathology by 3pm, results will be provided the second business day. If the time frame is not met, results are provided the third business day. Holidays may extend result times.  
Final results are provided the following business day. Routine and special stains for malignancies and microorganisms will be performed on frozen sections and touch preps.  
If intra-operative frozen sections are required for any reason, the entire specimen will be retained by the institution of origin for culture and diagnosis.

**Container**  
Well-constructed sterile container with secure lid and sealed plastic bag

**Specimen Handling**

<table>
<thead>
<tr>
<th>Collection on a HSCT Patient at UWMC</th>
</tr>
</thead>
</table>
| **7am to 4:30pm Mon – Fri**  
**Business Hours**  
- IN ADVANCE call the SCCA Pathology Department at 606-1355. Call the in-house courier at 598-8603 for a STAT pick-up. |
| **4:30pm to 7am Mon – Fri**  
**Weekends & Holidays**  
- **Saturdays** follow the procedure below except between 6 am to 2pm  
  During these hours notify the Saturday Tech in the SCCA Pathology Department at 606-1355. |

(Continued)
Lung Biopsy, continued

- The entire unfixed and undissected biopsy is placed in a sterile container and brought immediately to the UWMC Pathology lab (EC 239NW) for routing to SCCA Pathology Lab.
- Appropriate instructions for specimens to be submitted for culture must accompany the specimen.
- Accession specimen
- Package specimen for transport. Transport all Pathology specimens in shipping containers at ambient temperature.
- Send to SCCA Pathology Lab, Room G7-910.
- Call SCCA Pathology Tech and tell them the specimen is being shipped.
- Have a courier transport the package to the commodities box.
- Specimens for culture will be divided and distributed by the SCCA Pathology Lab. The SCCA Tech will be responsible for completing the correct Lab Requisitions to be sent with the specimens to be submitted for culture.

In ADVANCE contact the SCCA Pathology Tech at 573-0892

- The entire unfixed and undissected biopsy is placed in a sterile container and sent by the floor via Delivery Express to the Pathology Department at the SCCA, Room G7-910.
- Appropriate instructions for specimens to be submitted for culture must accompany the specimen.
- Specimens for culture will be divided and distributed by the SCCA Pathology Lab. The SCCA Tech will be responsible for completing the correct Lab Requisitions to be sent with the specimens to be submitted for culture.

After hours: do not send the specimen to UWMC Pathology Department.

Collection of SCCA GenOnc/Heme or UWMC Patients at UWMC

- Place the specimen in the Operating Room Pathology refrigerator. It will be picked up by UWMC Pathology Tech.
- UWMC Histology Tech accesses the specimen in the computer for processing at UWMC Anatomical Pathology.

Causes for Rejection  Improper handling, misidentified specimens and requisitions
LYMPH NODE BIOPSY

Test Includes: Gross and microscopic exam with diagnosis

Lab: SCCA Pathology, Room G7-910

Request Form: Anatomic Pathology Specimen Request Form
Fill out completely, including ICD codes

For SCCA Ambulatory Clinic, a CPOE requisition will be generated for those lab tests requiring a requisition form.

Phone: 606-1355

Availability
- Monday 9:00am – 6:30pm
- Tuesday – Friday 6:00am – 6:30pm
- Saturday 6:00am – 2:30pm

Sundays and all other times, if STAT processing is required, contact the on-call Pathology Technologist at 573-0892.

Turnaround Time: Specimens received in SCCA Pathology by 3pm will have results provided the second business day. If time frame is not met results are provided on the third business day. Holidays may extend result times.

Container: Well-constructed, sterile container with secure lid and sealed plastic bag

Specimen Handling: In advance of procedure, notify SCCA Pathology

<table>
<thead>
<tr>
<th>7am to 4:30pm Mon – Fri</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Hours</td>
</tr>
</tbody>
</table>

- IN ADVANCE call the SCCA Pathology Department at 606-1355. Call the in-house courier at 598-8603 for a STAT pick-up.

(Continued)
Lymph Node Biopsy, continued

- Place entire biopsy in a sterile container and keep moist with a sterile gauze pad soaked with sterile, non-bacteriostatic saline. Transport specimen container immediately to UWMC Pathology (EC 239NW) for routing to SCCA Pathology.
- Specimens for lymphoma or LN Adenopathy will have touch preps made and portions of the tissue placed in RPMI for flow cytometry by UWMC Pathology.
- Accession specimen
- Transport all Pathology specimens in shipping containers at ambient temperature.
- Send to SCCA Pathology Lab, Room G7-910.
- Call SCCA Pathology Tech and tell them the specimen is being shipped.
- Have a courier transport the package to the commodities box.

Collection at SCCA Ambulatory Clinic

- If Microbiology and/or Virology culture is requested, place fresh specimen in appropriate transport media and deliver to the Alliance Laboratory.
- Specimens for flow cytometry should be placed in RPMI and sent to UWMC Hematopathology.
- Pathology specimens should be placed immediately in 10% buffered formalin at ambient temperature and sent to the SCCA Pathology Laboratory.

Causes for Rejection  Improper handling, misidentified specimens and requisitions
THINPREP® PAP TEST COLLECTION

Test includes  Microscopic exam with diagnosis
Lab          HMC Cytology
Request Form Cytology Request Form
Fill out completely, including ICD codes

Post CPOE go-live for SCCA Ambulatory Clinic, for those lab tests requiring a requisition form, a CPOE requisition will be generated.

Phone  744-2166
Availability Monday – Friday  8am – 5pm
Turnaround Time If specimen is delivered to SCCA Pathology by 10am, it is sent to HMC Cytology the same day. If it is not received by 10am, it is sent to HMC Cytology the next business day. Samples are screened the next business day after receipt.

Container  Vial containing PreservCyt® Solution.

Specimen Collection
Label a PreservCyt® vial with patient’s name and medical record number.

With patient in lithotomy position, expose cervix using a vaginal speculum moistened with warm water. Visually examine vaginal mucosa and cervix for lesions, ulceration or discharge. Document findings of the examination on patient’s record and note the relevant clinical findings on the requisition for optimum cytological interpretation.

To collect a specimen from the ectocervix, select contoured end of plastic spatula and rotate it 360º around the entire ectocervical surface. Remove spatula.

Rinse the contoured end of plastic spatula in a vial of PreservCyt® Solution by swirling vigorously ten (10) times. Discard plastic spatula. Place cap on vial.

(Continued)
**Thinprep PAP Test, continued**

Insert Cytobrush® Plus GT device into the endocervix until only the bottom-most bristles are exposed. Slowly rotate ¼ to ½ turn in one direction. Remove device. Do not over-rotate. Additional rotating may cause bleeding and contaminate the specimen.

Rinse the Cytobrush® Plus GT device in the vial of PreservCyt® Solution by rotating the device in the solution ten (10) times while pushing it against the wall of the vial. Swirl the device vigorously to further release the material. Discard device.

Tighten the PreservCyt® vial cap so that the torque line on the cap passes the torque line on the vial.

**Specimen Handling**

<table>
<thead>
<tr>
<th>Collection at SCCA Ambulatory Clinic</th>
</tr>
</thead>
<tbody>
<tr>
<td>▶ Deliver the specimen to SCCA Pathology by 10am for delivery to HMC Cytology the same day</td>
</tr>
<tr>
<td>▶ SCCA pathology Laboratory will accession and transport to HMC Cytology department.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Collection at UWMC</th>
</tr>
</thead>
<tbody>
<tr>
<td>▶ Deliver the specimen to UWMC Anatomic Pathology</td>
</tr>
<tr>
<td>▶ UWMC Anatomic Pathology will accession and transport to HMC Cytology department.</td>
</tr>
</tbody>
</table>

**Causes for Rejection**  Improper handling, misidentified specimens and requisitions
SINUS BIOPSY OR ASPIRATE

Test Includes: Gross and microscopic exam with diagnosis.

Lab: SCCA Pathology, Room G7-910

Request Form: Anatomic Pathology Specimen Request Form

Fill out completely, including ICD codes.

For SCCA Ambulatory Clinic, a CPOE requisition will be generated for those lab tests requiring a requisition form.

Phone: 606-1355

Availability:
- Monday: 9:00am – 6:30pm
- Tuesday – Friday: 6:00am – 6:30pm
- Saturday: 6:00am – 2:30pm

Sundays and all other times, if STAT processing is required, contact the on-call Pathology Technologist at 573-0892.

Turnaround Time: If specimen is delivered to SCCA Pathology by 3pm, results will be provided the second business day. If the time frame is not met, results are provided the third business day. Holidays may extend result times.

Specimen: Sinus biopsy or sinus aspirate removed for diagnostic interpretation

Container: Well-constructed sterile container with secure lid and sealed plastic bag

Specimen Handling:

<table>
<thead>
<tr>
<th>Collection on a HSCT Patient at UWMC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>7am to 4:30pm Mon – Fri Business Hours</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>▶ IN ADVANCE call the SCCA Pathology Department at 606-1355. Call the in-house courier at 598-8603 for a STAT pick-up.</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>During these hours notify the Saturday Tech in the SCCA Pathology Department at 606-1355.</td>
</tr>
</tbody>
</table>

(Continued)
## Sinus Biopsy, continued

- Place **entire biopsy** in a sterile container and keep moist with a sterile gauze pad soaked with sterile, non-bacteriostatic saline.
- Place entire **aspirate** in a sterile container.
- **Specimen** will be divided in SCCA Pathology and distributed to appropriate labs. The SCCA Tech will be responsible for completing the correct Lab Requisitions sent with the specimens to be submitted for culture.
- Deliver Pathology specimens to UWMC Pathology (EC 239) for routing of specimens to SCCA Pathology Lab.
- Accession specimen.
- Package specimen for transport.
- Transport all Pathology specimens in shipping containers at ambient temperature.
- Send to SCCA Pathology Lab, Room G7-910.
- Call SCCA Pathology Tech and tell them the specimen is being sent.
- Use a courier to transport the package to the commodities box.

<table>
<thead>
<tr>
<th>In ADVANCE contact the SCCA Pathology Tech at 573-0892</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Place entire <strong>biopsy</strong> in a sterile container and keep moist with a sterile gauze pad soaked with sterile, non-bacteriostatic saline.</td>
</tr>
<tr>
<td>- Place entire <strong>aspirate</strong> in a sterile container.</td>
</tr>
</tbody>
</table>

### Collection of SCCA GenOnc/Heme or UWMC Patients at UWMC

- Operating Room delivers specimen to Operating Room Pathology refrigerator.
- UWMC Histology Tech accesses the specimen in the computer immediately and sets up for processing at UWMC Anatomical Pathology.

**Causes for Rejection**  Delayed delivery of fresh specimens, misidentified specimens and requisitions, insufficient pertinent clinical history
SURGICAL SPECIMENS

Surgical Specimens  Specimens not specifically described in the Specimen Handling Procedure Manual; e.g., spleen, kidney, thoracentesis, laparoscopy.

Test Includes  Gross and microscopic exam with diagnosis
Lab  SCCA Pathology, Room G7-910
Request Form  Anatomic Pathology Specimen Request Form
Fill out completely, including ICD codes
For SCCA Ambulatory Clinic, a CPOE requisition will be generated for those lab tests requiring a requisition form.

Phone  606-1355
Availability  Monday  9:00am – 6:30pm
Tuesday – Friday  6:00am – 6:30pm
Saturday  6:00am – 2:30pm

Sundays and all other times if STAT processing is required, contact the on-call Pathology Technologist at 573-0892.

Turnaround Time  For specimens received in SCCA Pathology by 3pm, results will be provided the second business day. If the time frame is not met, results are provided on the third business day. Holidays may extend result times.

If intra-operative frozen sections are required for any reason, the entire specimen will be retained by the institution of origin for culture and diagnosis.
Container  See below.
Specimen Handling  The type of container, transport temperature, appropriate transport media, fixative, or other handling details should be determined prior to specimen collection by consulting the appropriate Pathology Laboratory, the on-call Path Tech, or Pathologist.

(Continued)
Collection on a HSCT Patient at UWMC

<table>
<thead>
<tr>
<th>7am to 4:30pm Mon – Fri Business Hours</th>
<th>4:30pm to 7am Mon – Fri Weekends &amp; Holidays</th>
</tr>
</thead>
<tbody>
<tr>
<td>IN ADVANCE call the SCCA Pathology Department at 606-1355 Call the in-house courier at 598-8603 for a STAT pick-up.</td>
<td>Saturdays follow the procedure below except between 6am to 2pm</td>
</tr>
<tr>
<td>Deliver Specimens to UWMC Pathology (EC 239NW) for routing of specimens to SCCA Pathology.</td>
<td>During these hours notify the Saturday Tech in the SCCA Pathology Department at 606-1355</td>
</tr>
<tr>
<td>SCCA Pathology will divide and route specimens to appropriate labs per protocol.</td>
<td></td>
</tr>
<tr>
<td>The SCCA Tech will be responsible for completing the appropriate Lab Requisitions sent with the specimens to be submitted for culture.</td>
<td></td>
</tr>
<tr>
<td>Accession specimen</td>
<td></td>
</tr>
<tr>
<td>Transport all Pathology specimens in shipping containers at ambient temperature.</td>
<td></td>
</tr>
<tr>
<td>Send to SCCA Pathology Lab, Room G7-910.</td>
<td></td>
</tr>
<tr>
<td>Call SCCA Pathology Tech and tell them the specimen is being shipped.</td>
<td></td>
</tr>
<tr>
<td>Have a courier transport the package to the commodities box.</td>
<td></td>
</tr>
</tbody>
</table>

Saturdays follow the procedure below except between 6am to 2pm

During these hours notify the Saturday Tech in the SCCA Pathology Department at 606-1355

In ADVANCE contact the SCCA Pathology Tech at 573-0892

SCCA Pathology will divide and route specimens to appropriate labs per protocol.

The SCCA Tech will be responsible for completing the appropriate Lab Requisitions sent with the specimens to be submitted for culture.

Specimens are sent by the floor via cab to the Pathology Department at the SCCA, Room G7-910.

After hours: do not send the specimen to UWMC Pathology Department.

Collection of SCCA GenOnc/Heme or UWMC Patients at UWMC

Place the specimen in the Operating Room Pathology refrigerator. It will be picked up by UWMC Pathology Tech.

UWMC Histology Tech accessions the specimen in the computer for processing at UWMC Anatomical Pathology.

Causes for Rejection: Improper handling, misidentified specimens and requisitions
## OTHER FLUID SPECIMENS

<table>
<thead>
<tr>
<th><strong>Other Fluids</strong></th>
<th>Specimens not specifically described in the Specimen Handling Procedure Manual; e.g., CSF, Urine.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Test Includes</strong></td>
<td>Gross and microscopic exam with diagnosis</td>
</tr>
<tr>
<td><strong>Lab</strong></td>
<td>Specimens processed by Harborview Cytology</td>
</tr>
<tr>
<td><strong>Request Form</strong></td>
<td>University of Washington Medical Centers/Harborview Medical Center Cytology Request. Fill out completely, including ICD codes. For SCCA Ambulatory Clinic, a CPOE requisition will be generated for those lab tests requiring a requisition form.</td>
</tr>
<tr>
<td><strong>Phone</strong></td>
<td>Harborview Cytology 744-2166</td>
</tr>
<tr>
<td><strong>Availability</strong></td>
<td>Monday – Friday 8am – 5pm</td>
</tr>
</tbody>
</table>

### Specimen Collection

All specimen containers must be labeled with patient name and medical record number or birthdate. They must be accompanied by a completed requisition.

Please note that the following collection procedures are a suggested guideline. Techniques vary based on personal preference, and specific clinical circumstances must be taken into account when deciding on the collection method utilized.

Cerebrospinal Fluid (CSF)

A lumbar puncture is performed with the patient either lying down with knees bent or sitting. After the back is cleaned, an anesthetic is injected into the lower spine. Once the spinal needle is inserted, spinal fluid pressure is measured, and fluid collected. The fresh fluid is highly perishable. Minimum volume needed is 1 ml. Send to laboratory immediately. Refrigerate if delay is unavoidable.

Sputum

Have the patient cough deeply to expectorate sputum directly into the sterile container. Do not contaminate the rim of the container with sputum. Do NOT include any saliva or postnasal discharge. Three consecutive early morning specimens increase the yield of cells. Send to laboratory immediately. Refrigerate if delay is unavoidable.

(Continued)
Other Fluid Specimens, continued

Body Cavity Fluids  Clean and disinfect the needle puncture site to prevent introduction of infection. The physician will aseptically perform percutaneous aspiration to obtain pleural, pericardial, peritoneal, or synovial fluids. Expel any air bubbles from the syringe, and immediately inject the specimen into sterile container. Add 0.5 ml EDTA to the container for each 100 ml collected.

Urine (voided)  First morning urine specimen should not be sent for cytological studies (since the first morning urine is usually made up of degenerative exfoliated cell materials and concentrated urine waste products, which obscure the cellular detail). At least 100 ml of “clean catch” urine is required for cytology. In cases with residual urine problems or with severe urethritis or vaginitis, the urine should be obtained by catheterization. Send to laboratory immediately. Refrigerate if delay is unavoidable.

Urine (catheterized)  This specimen is collected under sterile conditions by passing a hollow tube through the urethra into the bladder. Send to laboratory immediately. Refrigerate if delay is unavoidable.

Bladder Washing  Bladder washing samples are taken by placing a balanced salt solution into the bladder through a catheter (tube) and then removing the solution for microscopic testing. Collect into a sterile container. Send to laboratory immediately. Refrigerate if delay is unavoidable. If delay is more than 24 hours, add an equal volume of 50% ethanol.

Specimen Handling

<table>
<thead>
<tr>
<th>Collection on a HSCT Patient at SCCA Ambulatory Clinic</th>
</tr>
</thead>
<tbody>
<tr>
<td>▶ Deliver the specimen to SCCA Pathology.</td>
</tr>
<tr>
<td>▶ A SCCA Pathology Technician will accession all of these specimens. They will be sent via cab to Harborview Cytology</td>
</tr>
</tbody>
</table>

(Continued)
Other Fluid Specimens, continued

### Collection on a HSCT Patient at UWMC

<table>
<thead>
<tr>
<th>7am to 4:30pm Mon – Fri Business Hours</th>
<th>4:30pm to 7am Mon – Fri Saturdays, Sundays and Holidays</th>
</tr>
</thead>
<tbody>
<tr>
<td>➤ Follow collection guidelines above.</td>
<td>➤ In ADVANCE page UWMC on-call Histology Tech (663-8098).</td>
</tr>
<tr>
<td>➤ Immediately deliver Pathology specimens to UWMC Pathology.</td>
<td>➤ Follow collection guidelines above.</td>
</tr>
<tr>
<td>➤ Fluid specimens will be sent to Harborview Cytology for processing.</td>
<td>➤ Immediately deliver Pathology specimens to UWMC Pathology.</td>
</tr>
<tr>
<td></td>
<td>➤ Fluid specimens will be sent by UWMC Pathology to Harborview Cytology</td>
</tr>
</tbody>
</table>

**Causes for Rejection**  Improper handling, misidentified specimens and requisitions.
SURGICAL SPECIMENS
Collected at SCCA Ambulatory Clinic

**Surgical Specimens** Specimens collected at SCCA Ambulatory Clinic not specifically described in the Specimen Collection and Handling Manual

**Test Includes** Gross and microscopic exam with diagnosis

**Lab** SCCA Pathology, Room G7-910

**Request Form** Anatomic Pathology Specimen Request Form

Fill out completely, including ICD codes
For SCCA Ambulatory Clinic, a CPOE requisition will be generated for those lab tests requiring a requisition form.

**Phone** 606-1355

**Availability**
- Monday 9:00am – 6:30pm
- Tuesday – Friday 6:00am – 6:30pm
- Saturday 6:00am – 2:30pm

Sundays and all other times, if STAT processing is required, contact the on-call Pathology Technologist at 573-0892.

**Turnaround Time** For specimens received in SCCA Pathology by 3pm, results will be provided the second business day. If the time frame is not met, results are provided on the third business day. Holidays may extend result times.

**Container** See below

**Specimen Handling** The type of container, transport temperature, appropriate transport media, fixative, or other handling details should be determined prior to specimen collection by consulting the appropriate Pathology Laboratory, the on-call Path Tech, or Pathologist.

**Collection at SCCA Ambulatory Clinic**

<table>
<thead>
<tr>
<th>Time</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>7am to 4:30pm</td>
<td>Business Hours</td>
</tr>
<tr>
<td>Mon – Fri</td>
<td></td>
</tr>
<tr>
<td>Business hours</td>
<td></td>
</tr>
</tbody>
</table>

- Internal courier delivers the specimen to SCCA Pathology
- If the specimen is from a HSCT or Heme-Onc patient, SCCA Path Tech accessions the specimen in the computer for processing at SCCA Pathology
- If the specimen is from a solid tumor patient, the SCCA Path Tech accessions the specimen in the computer for transport to UWMC Pathology Lab, Room EC 239NW.
- Business hours – Use courier to transport package to commodities box.

**Causes for Rejection** Improper handling, misidentified specimens and requisitions
THERAPEUTIC DRUG MONITORING OF BUSULFAN

Test includes
Css (ng/mL) result and dose recommendations
(mg every 6 or every 24 hours)
Lab
Pharmacokinetics, 188 E. Blaine, Suite 250
Request Form
Busulfan Requisition Form (available on UWMC-7NE, 8NE, and SCCA outpatient blood draw area)
Fill out completely, including ICD codes, time of the draw, dose amount, and time given
For SCCA Ambulatory Clinic, a CPOE requisition will be generated for those lab tests requiring a requisition form.
Phone
606-7389
Availability
Tuesday – Saturday,  8am – 5pm
Sundays, Mondays and Holidays: on call
Turnaround Time
If the dose is given before or at the standard time of 8am, results available between 4pm and 5pm on the same day
Specimen
Blood (only plasma is analyzed)
Volume
1-3 mL oral, 1-4 mL IV formulation
Container
Green Top 4 mL sodium heparin Vacutainer® tube
Collection
The following patient information must be recorded on the requisition form: busulfan dose given (mg), and the date and time it was given. **Label tubes with patient name, U#, date, the actual time of blood draw, initials of the person drawing the blood, and record this information on the requisition form.** Place samples on wet ice within 10 minutes and deliver immediately to Alliance Laboratory (G1-500) for pick-up.

Note: Special contracted courier service will pick up samples on 7 or 8 NE if the patient is an inpatient at the UW Medical Center.

(Continued)
Therapeutic Drug Monitoring of Busulfan, continued

Oral Busulfan every 6 hours
Collect 1-3 mL of whole blood at the following post dose times in minutes for dose 1: 15 (suspension only), 30, 60, 90, 120, 180, 240, 300, 360.

Collect 1-3 mL of whole blood at the following times for doses 5 and 9: 0 (immediately prior to dose), 30 (suspension only), 60, 120, 240, 360.

Note: If there was emesis during the dose or previous doses, have the amount of busulfan given as a redose.

IV Busulfan every 6 hours
Collect 1-4 mL of whole blood at the following post-dose times in minutes for dose 1: End of infusion (120), 135, 150, 180, 240, 300, 360.

Collect 1-4 mL of whole blood at the following times for doses 5 and 9: 0 (immediately prior to dose), end of infusion (120), 135, 150, 240, 360.

Be sure the entire drug has been delivered, and the lines have been flushed thoroughly of busulfan before drawing the post-infusion sample.

IV Busulfan every 24 hours
Collect 1-4 mL of whole blood at the following post-dose times in minutes for dose 1: End of infusion (180), 195, 270, 360, 480.

Collect 1-4 mL of whole blood at the following times for doses 2 and 3: 0 (immediately prior to dose), end of infusion (180), 195, 270, 360, 480.

Be sure the entire drug has been delivered, and the lines have been flushed thoroughly of busulfan before drawing the post-infusion sample.

Causes for Rejection  Misidentified specimens and requisitions, improper storage, gross hemolysis or clotting, and/or insufficient sample volume will be rejected, and the appropriate personnel at the patient care facility will be notified.

Additional requirement for specimens delivered to us by post courier: specimen must arrive frozen.

After Hours Page Pharmacokinetics Laboratory staff at (206) 994-5942 to schedule
CREATININE (POCT)

Related Terms: Creatinine, Crea
Test Includes: Creatinine
Lab: POCT – Imaging Unit
Phone: POCT Office: 606-7635
       MRI: 606-6988
       OBS: 606-7184
Testing Frequency: Monday – Saturday, testing time is dependent on care plan. Specimens may be sent to Alliance Lab for confirmation or as needed.
Availability: STAT
Specimen: Whole Blood
Volume: 0.5 mL
Container: 1-3mL sterile syringe. If specimen is sent to Alliance Lab for testing, collect plasma or serum in 5 mL lime top PST, green top, red top, gold top SST or orange top RST
Collection: Routine venipuncture or line draw
Causes for Rejection: Misidentified specimens and requisitions, specimen QNS

<table>
<thead>
<tr>
<th>Reference Ranges</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Range</td>
<td>Age</td>
</tr>
<tr>
<td>&gt;=18 yrs</td>
<td>0.38-1.02</td>
<td>&gt;=18 yrs</td>
</tr>
</tbody>
</table>
GLUCOSE (POCT)

<table>
<thead>
<tr>
<th>Related Terms</th>
<th>Blood sugar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lab</td>
<td>POCT – Procedure Suite, Infusion/ACE/CTU, GI Care Neighborhood</td>
</tr>
<tr>
<td>Units</td>
<td>POCT Office: 606-7635</td>
</tr>
<tr>
<td>Phone</td>
<td>Procedure Suite: 606-1329</td>
</tr>
<tr>
<td></td>
<td>Imaging: 606-7184</td>
</tr>
<tr>
<td></td>
<td>Infusion/ACE/CTU: 606-2157</td>
</tr>
<tr>
<td></td>
<td>GI Care Neighborhood: 606-4200</td>
</tr>
</tbody>
</table>

**Testing Frequency**
Monday – Sunday, testing time is dependent on care plan or rapid response code. Specimens may be sent to Alliance Lab for confirmation or as needed.

**Availability**
STAT

**Specimen**
Whole Blood

**Volume**
0.5 mL

**Container**
For capillary specimen collection, use auto-disabling single-use lancing device. If specimen is sent to Alliance Lab for testing, collect plasma or serum in 5 mL lime top PST, green top, red top, gold top SST or orange top RST.

**Collection**
Capillary fingerstick, routine venipuncture or line draw.

**Specimen Handling**
Separate plasma or serum from cells as soon as possible to minimize loss of glucose through glycolysis

**Causes for Rejection**
Misidentified specimens and requisitions, specimen QNS

**Reference Ranges**
Glucose, fasting: 62–125 mg/dL

**Critical Values**
<50 mg/dL or >500 mg/dL
# IONIZED CALCIUM (POCT)

**Related terms**  
iCa, Ionized Calcium

**Lab**  
POCT – Apheresis Unit

**Phone**  
POCT Office: 606-7635  
Apheresis: 606-2120

**Testing Frequency**  
Monday – Sunday, testing time is dependent on care plan. Specimens may be sent to Alliance Lab for confirmation or as needed.

**Availability**  
STAT

**Specimen**  
Whole Blood

**Volume**  
1 mL

**Container**  
1-3 mL balanced heparin syringe. If specimen is sent to Alliance Lab for testing, collect plasma or serum in Gold top SST™ tube for serum  
Lime green top PST tube for plasma

**Collection**  
Routine venipuncture or line draw

**Causes for Rejection**  
Misidentified specimens and requisitions, specimen QNS, clotted specimen

**Reference Ranges**  

<table>
<thead>
<tr>
<th>Age</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 1 year</td>
<td>1.18 mmol/L - 1.38 mmol/L</td>
</tr>
<tr>
<td>&lt; 1 year</td>
<td>1.16 mmol/L - 1.45 mmol/L</td>
</tr>
</tbody>
</table>

**Critical Values**  

<table>
<thead>
<tr>
<th>Value</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 0.78 mmol/L</td>
<td>or &gt; 1.58 mmol/L</td>
</tr>
</tbody>
</table>
POTASSIUM (POCT)
Related Terms: K+, K, Potassium

Lab: POCT – Apheresis Unit
Phone: POCT Office: 606-7635
Apheresis: 606-2120

Testing Frequency: Monday – Sunday, testing time is dependent on care plan. Specimens may be sent to Alliance Lab for confirmation or as needed.

Availability: STAT
Specimen: Whole blood
Volume: 1 mL
Container: 1-3 mL balanced heparin syringe. If specimen is sent to Alliance Lab for testing, collect plasma or serum in 5 mL lime top PST, green top, red top, gold top SST or orange top RST

Collection: Routine venipuncture or line draw, do not draw specimen from an arm receiving intravenous transfusion. Avoid hemolysis, as it can lead to falsely elevated K+ levels.

Causes for Rejection: Misidentified specimens and requisitions, specimen QNS, clotted specimen

Reference Ranges: 3.6 – 5.2 mEq/L
Critical Values: <3.0 mEq/L or >6.0 mEq/L
SKIN KOH (POCT/PPT)

**Related Terms**  Skin KOH, Skin Fungal with Direct Exam

**Test included in these panels**

- Fungal elements seen on skin or other keratinized specimens

**Lab**  3rd floor, Skin Oncology

**Phone**  POCT Office: 606-7635

Skin Oncology: 606-2201

**Testing Frequency**  Clinic hours 8am to 5pm. Testing is dependent on care plan.

**Availability**  Performed at patient’s bedside

**Specimen**  Skin and other keratinized specimens

**Volume**  N/A

**Container**  Glass slide with one drop of 10% (or 20%) KOH to the slide and mix well with the specimen.

**Collection**  Skin scrapings with sterile blade, clipper, or scissors

**Causes for Rejection**  Specimen QNS

**Reference Ranges**  No fungal elements seen
WET MOUNT (POCT/PPT)

**Related Terms**
Wet Mount, Wet Prep

**Test included in these panels**
- Fungal elements, Trichomoniasis, or bacterial vaginosis seen on wet mount slides

**Lab**
3rd floor Gynecology

**Phone**
POCT Office: 606-7635
Gynecology: 606-6919

**Testing Frequency**
Clinic hours 8am to 5pm. Testing is dependent on care plan.

**Availability**
Performed at patient’s bedside

**Specimen**
Vaginal discharge, urethral discharge, penile discharge, and urethral-mucosa scrapings. Any vaginal, cervical or skin specimens

**Volume**
0.5 mL

**Container**
Test tube containing <1mL of 0.85% NaCl or on a microscope slide with 1-2 drops of 0.85% NaCl

**Collection**
Collect patient specimens with a platinum loop, cotton or Dacron swab, or speculum

**Causes for Rejection**
Reject any specimens more than 24 hours old, specimen QNS

**Reference Ranges**
No clinically significant organisms seen