




2011

LABORATORY TEST CATALOG

BIO-CENTER LABORATORY

A division of The Riordan Clinic

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Bio-Center Laboratory (BCL)

Introduction to Our Services

Bio-Center Laboratory (BCL) was established in 1975 and has dedicated itself to providing accurate clinical assays focusing on nutritional medicine. Our specialties include testing for pyrroles, histamine, spermidine, spermine, cytotoxic food sensitivities, parasitology, analysis of red blood cell fatty acids and minerals, along with many vitamins.

Client service representatives are available Monday through Thursday from 8 AM to 5 PM and Friday 9 AM to 4 PM CST. Our toll free telephone number is 800-494-7785. For local calls, please call 316-684-7784. Our fax number is 316-682-2062.

Licensure / Certification

CLIA 17D0648333

Medicare 008052

Federal ID 48-0840415

Proficiency Testing

College of American Pathologists: Trace Metals, Virology.

American Association of BioAnalysts: Chemistry, Parasitology, Hematology, Urinalysis, Special Chemistries and Tumor Markers surveys.

Centre de Toxicologie du Quebec: Mineral surveys.

Policies

- ▶ **Test Cancellation:** A test may be cancelled at any time prior to reporting the result. The request to cancel must be in writing, signed and faxed to us at 316-682-2062.
- ▶ **Repeat Testing:** In most cases, unusual test results are automatically repeated by the laboratory and noted as such on the final report. If you question a result, please call client services and we will further evaluate the result and repeat the test if necessary, at no charge, provided that we have sufficient quantity of specimen. For the most part, specimens are retained for at least one month.
- ▶ **Unacceptable Specimens:** If we determine that a specimen is unacceptable, we will call you with our concerns. Please review, "Causes for Rejection," accompanying each assay.
- ▶ **Turn Around Time (TAT):** All assays are performed weekly. The usual TAT is seven days or less. Repeat testing due to unusual results may also affect the TAT. The days that tests are performed may vary. If you have unusual circumstances or needs, please call us and we will make every effort to accommodate your concerns.
- ▶ All test requirements and availability are subject to change without notice.

Client Billing

- ▶ Fees are subject to change without prior notification. However, we will make every effort possible to notify you when the change occurs.
- ▶ Personal checks, business checks, or credit cards are acceptable payment options. If paying by credit card: include the credit card number and the date of expiration, the name of the credit card holder (as printed on the credit card), the card holder's signature, and the amount of payment to be charged to the account.

- ▶ BCL does not file claims to private insurance carriers or Medicaid. If a patient sends personal payment (along with the specimen) to the lab, a patient's receipt will be issued to that patient for submission by the patient to insurance.
- ▶ While BCL is a participating member of Medicare, Medicare has advised us to not file *known* non-covered services.
- ▶ Medicare does not pay for vitamin, nutrient, mineral, histamine, food allergy or pyrroles testing, therefore, payment is required at the time of service for these tests. These tests will not be filed with Medicare. The following tests require full payment at the time of service:

Amino Acids	Folate (Folic Acid)	Strontium	Vitamin C, Post IVC
Beta Carotene	Glutathione, RBC	Vitamin A	Vitamin D
Boron	Hair Analysis	Vitamin B1	Vitamin E
Chelation, Urine (24-hr)	Histamine	Vitamin B12	Zinc, RBC or Serum
Chromium, Serum	Lutein	Vitamin B2	
CoEnzyme Q10	Lycopene	Vitamin B3	
Copper, RBC or Serum	Magnesium, RBC or Serum	Vitamin B5	
Cytotoxic Food Sensitivity	Manganese, RBC or Serum	Vitamin B6	
Fatty Acids	Selenium, RBC or Serum	Vitamin C, Plasma	

Medicare requires a Medicare waiver signed by the patient on the date of service for covered services only and should accompany the specimen and requisition. Payment must accompany non-covered services.

Client Billing Options

Option 1 -- Payment Included with Specimen Submittal: Payment from the patient or medical facility accompanies the specimen shipment. Patient's full name, address, date of birth, gender, and telephone number are required for processing the payment. Doctor's orders, if applicable, must be included with the payment and a properly filled out requisition. All test results will be sent to the ordering physician. Therefore, the physician's full name & degree (MD, ND, OD, etc...), address, telephone number (and fax number, if faxed reports are also desired) must be submitted with all specimens. Bio-Center Laboratory will send a receipt to the patient for insurance reimbursement.

Option 2 -- Physician/Clinic/Reference Lab Billing: All new accounts must send a check or valid credit card information with shipment of the first specimen. For future shipments, BCL will invoice the referring facility each month (as needed) for each assay ordered. Payment is due within 30 days of invoice. The referring facility or physician's full name & degree (MD, ND, OD, etc...), the physician/facility's address and telephone number (include fax number, if faxed reports are also desired) must be submitted with all specimens. Bio-Center Laboratory will send a receipt to the referring facility/physician.

Drawing and Processing Specimens

- ▶ General fasting specimens require a 12 – 14 hours fast. Drinking water is allowed during a general fast.
- ▶ If fasting for a cytotoxic food sensitivity test, the fast prohibits the use of tobacco products. Bottled water is the only beverage allowed during the fast. The patient's teeth should not be brushed the morning of the collection. BCL must be notified 1 – 2 days prior to collection of cytotoxic food sensitivity specimens for approval of specimen arrival dates. Specimen must be shipped same day as collection, Monday - Wednesday only.
- ▶ Serum specimens require that whole blood in the amount of 2 ½ times the required amount of serum be drawn. For example, if 2 mL serum is required, then at least 5 mL whole blood needs to be drawn. Individual patient hematocrits may affect the amount to be drawn. Unless noted, all serum specimens should be separated from cells by centrifugation within 45 minutes of venipuncture.
- ▶ Specimens drawn in ACD, EDTA, or heparin tubes contain anticoagulant. To prevent the specimen from clotting, the contents of these tubes should be mixed thoroughly immediately after being drawn by inverting the tube gently at least six times.
- ▶ All volumes listed are pipettable volumes (i.e., extra volume must be included to allow for pipetting of specimen).

- ▶ Minimum volume specimens allow the sample to be tested once with no option for repeat analysis.
- ▶ **Preferred volumes allow specimens to be tested several times. These volumes should always be sent unless difficulty in obtaining specimen is incurred, and use of minimum volume is the *only* option available.**
- ▶ Specimens that need to be protected from freezing should never be placed directly next to an ice pack, or cells will burst (hemolysis will result), and the specimen will be unusable. To protect these specimens from freezing, separate the specimen from the ice pack with 1/2 inch of padding (such as bubble wrap or newspaper).
- ▶ BCL prefers that when storage instructions state specimen is to be refrigerated or frozen, that the specimen be frozen and then later shipped with frozen ice packs via overnight courier. Specimens shipped in this manner will arrive in a cold or semi-frozen condition. If dry ice is required for shipment of any specimen, instructions will state this requirement.
- ▶ Light-protected specimens should be placed in an amber plastic transport tube. If using a clear or opaque plastic transport tube, wrap foil around the tube.
- ▶ Centrifuge time is 10 minutes at approximately 3000 rpm.

Specimen	Serum
Draw tube	SST or red top tube
Processing	Allow blood to clot 15 – 40 minutes prior to centrifuging. Centrifuge specimen. Transfer serum to plastic transport tube. Discard cells.

Specimen	Plasma
Draw tube	Heparin or EDTA tube
Processing	Centrifuge specimen. Transfer plasma to plastic transport tube. Discard cells, unless RBC are to be used for other testing.

Specimen	Whole blood
Draw tube	Heparin or EDTA
Processing	Transfer whole blood specimen to plastic transport tube.

Specimen	Washed red blood cells (RBC)
Draw tube	Heparin or EDTA
Processing	Centrifuge specimen. Remove & discard plasma, leaving only RBC in bottom of tube. Add 0.85% saline to tube. Invert tube gently and completely to mix contents. Centrifuge. Remove & discard saline wash. This is one saline wash cycle. Transfer RBC to plastic transport tube.
Note	RBC elements & Fatty Acids require only one saline wash cycle. Vitamins B1 & B6 require 3 saline wash cycles.

Specimen	Urine for Indican, Pyrroles, Potassium & Sodium Ratio, UA and Vitamin C.
Collection container	Use a clean disposable container for collection. It is advisable to urinate a small amount of urine into the toilet immediately prior to the collection of the urine specimen for the UA.
Processing	Pour appropriate amount of urine into a clean plastic screw capped transport tube.
Note	Pyrrole transport tubes are amber and must contain ascorbic acid crystals for stability. Wrap tube in foil for light protection if amber tube is not available.

Specimen Submittal and Shipping

- ▶ **REQUIRED:** All specimen tubes and slides must be labeled with the patient's name & name of test being requested, and must be accompanied by a completed requisition for testing. Required information on the requisition consists of the following: patient's name; patient's date of birth and gender; date & time of specimen collection. If the test is ordered by a physician, the physician's name, physician's address and phone number (& fax number, if applicable) are also required. Use an "X" to mark the square in front of the test being requested. Failure to meet these minimum requirements may be cause for rejection of specimen.
- ▶ BCL does not require a physician's order for laboratory testing, however a physician's order is required in order to file services with Medicare and other health insurance providers. Patient-ordered test results will be sent to the patient. Results of testing ordered by a physician will be sent directly to the physician. Results will not be sent to a patient unless requested by the ordering physician. Diagnosis should be printed legibly. Also include the numerical ICD-9 code if the patient is sending payment and wishes to receive a receipt for insurance reimbursement, or if BCL is to file services with Medicare for *covered* services.
- ▶ In case of leakage during shipping, all specimens should be transported within a sturdy plastic bag with absorbent material placed next to the specimen. The specimen bag should be contained in a Styrofoam container (with ice packs, if required) and then placed in a sturdy outer container or box for transport.
- ▶ **Note: Specimen must be shipped Monday – Thursday by FedEx overnight delivery. The lab is closed on weekends and holidays. Avoid shipping specimens around these days.** If you are located outside of the Continental United States, you must make your own shipping arrangements. Freeze specimen and cold pack. Place specimen and this completed form in the specimen bag. Place bag and cold pack in the Styrofoam box and tape closed. Place the box inside the FedEx Clinical Pak provided. Write your name and address in the "From" section on the prepaid label. Keep the orange receipt copy for your records. You may drop off the package at any FedEx or FedEx Kinko's location. For FedEx shipping questions, call 1-800-GOFEDEX
- ▶ **CAUSES FOR REJECTION:** Specimens not labeled with date and name of patient & test; requisition not completed properly; improper specimen drawn (example: plasma specimen sent when serum is specified); specimen maintained or received at improper temperature; inadequate or inappropriate volume. Additional causes for rejection may be listed under individual test information.

**Payment Submission Sheet
Client Billing Options**

Physician Information

First Name	Last Name	Degree
Street Address		Suite Number
City	State	Zip
Telephone	FAX	

Patient Information:

First Name	Middle Name/Initial	Last Name	Month / Day / Year Date of Birth	<input type="checkbox"/> Male	<input type="checkbox"/> Female
Street Address			Apartment Number		
City	State	Zip			
Telephone					

Payment:

- Bill Physician/Clinic/Reference Lab at address above. Payment is due within 30 days of invoice.
Note: new clients are required to submit payment with first specimen. Billing option will apply on approved accounts.
- I ordered this test online at www.biocenterlab.org. You already have my payment information.
- Payment enclosed. A receipt will be issued to you for insurance submittal. Please complete Patient Information (and credit card information, if applicable). If patient is responsible for payment, it must be submitted with specimen.
- \$_____ Amount of personal check \$_____ Amount of money order \$_____ Amount of credit card purchase

Credit Card Number	Exp. Date
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Please print cardholder name as printed on card	Signature of cardholder
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ADVANCE BENEFICIARY NOTICE (ABN) & WAIVER OF LIABILITY
REQUIRED BY MEDICARE

BIO-CENTER LABORATORY, 3100 North Hillside, Wichita, KS 67219, P 316-682-3100, F 316-682-2062

_____		_____	
Patient Name (First, Middle Initial, Last)		Medicare Number	
_____		M / F	
Patient Date of Birth (DD-MM-YYYY)	Patient's Age & Gender	Date of Service	
_____		_____	
Street Address & Apartment		City, State, Zip (required)	
_____	_____		_____
Patient Telephone Number	Physician's Name	Physician's UPIN #	
_____		\$ _____	\$ _____
ICD-9 Diagnosis Codes	Total Lab Test Fees	Non-covered Fees	

The ordering physician must be a Medicare provider in order for services to be filed with Medicare.

Medicare requires that the patient sign its waiver on the date of service for covered services only. The waiver must accompany the specimen and requisition. Payment must accompany non-covered services.

Medicare does not pay for routine testing or screening. Medicare does not pay for testing if the patient is enrolled in Hospice.

Medicare will only pay for services that it determines to be "reasonable and necessary" under section 1862(a)(1) of the Medicare law. If Medicare determines that a particular service, although it would otherwise be covered, is "not reasonable and necessary" under Medicare program standards, Medicare will deny payment for that service. **Medicare does not cover some of the tests performed here, since some are consider "preventive". Medicare pays only for tests it considers "medically necessary". I believe in your case, Medicare is likely to deny payment for the service(s) indicated below for the following reasons (see the following four categories):**

Category 1: Medicare does not consider any of the following tests a medical necessity. Medicare has advised the lab not to file non-covered services. Therefore, **full payment is required at the time of service for the following tests, which will not be filed with Medicare:**

Indican, Urine	Spermidine	Vitamin C, Urine
Pyrrroles, Urine	Spermine	

In the remaining categories below, please place an "X" beside the test(s) that you are submitting to Bio-Center Laboratory for testing services. We will file these services with Medicare on your behalf.

Category 2: On the following laboratory tests, Medicare usually covers these tests except when it deems the diagnosis (determined by the physician) does not support the medical necessity. A completed and signed Waiver of Liability must be submitted with the specimen, along with a copy of the patient's Medicare card. **Payment is not required at the time of service for these tests, which will be filed with Medicare:**

<input type="checkbox"/> <i>Candida</i> IgG, IgA, IgM	<input type="checkbox"/> Epstein Barr Virus	<input type="checkbox"/> Homocysteine	<input type="checkbox"/> Potassium/Sodium, Urine
<input type="checkbox"/> Creatinine	<input type="checkbox"/> G6PD	<input type="checkbox"/> Lipoprotein (a)	<input type="checkbox"/> Stool Profile
<input type="checkbox"/> CRP (C-Reactive Protein)	<input type="checkbox"/> <i>Giardia/Cryptosporidium</i> Ag	<input type="checkbox"/> T ₃ , Free (Unbound)	<input type="checkbox"/> T ₄ , Free (Direct)
<input type="checkbox"/> DHEA	<input type="checkbox"/> <i>H. Pylori</i> Ab		

Category 3: An Advanced Beneficiary Notice (ABN) form is required for these limited coverage tests. These tests are usually covered, but may be denied by Medicare when it deems the diagnosis (determined by the physician) does not match the ICD-9 codes established as eligible for coverage by Medicare. Also, these tests may be denied if any particular one or more of these limited coverage tests have been ordered too frequently within a particular time frame. The following tests will be filed with Medicare. Therefore, **payment is not required at time of service. Medicare requires a completed and signed ABN and a copy of the patient's Medicare card along with the specimen.**

<input type="checkbox"/> CBC	<input type="checkbox"/> Lipid Profile	<input type="checkbox"/> TSH	<input type="checkbox"/> Cholesterol
<input type="checkbox"/> CEA	<input type="checkbox"/> Glucose &/or GTT ____hrs	<input type="checkbox"/> PSA	<input type="checkbox"/> Urinalysis
<input type="checkbox"/> Hemocult (Occult Blood)		<input type="checkbox"/> Thyroid Panel	

BENEFICIARY AGREEMENT

My physician has notified me that he or she believes that, in my case, Medicare is likely to deny payment for the services identified above for the reasons stated. If Medicare denies payment, I agree to be personally and fully responsible for the payment. Any tests denied by Medicare are due upon receipt of the statement.

ONE TIME AUTHORIZATION

I request that payment of authorized Medicare benefits be made either to me or on my behalf to Bio-Center Laboratory for any services furnished to me by BCL. I authorize any holder of medical information about me to release to the Health Care Financing Administration and its agents any information needed to determine these benefits or the benefits payable for related services.

_____ / / _____
Patient's signature Date (DD/MM/YYYY)

MEDICARE HAS ADVISED THE LAB NOT TO FILE NON-COVERED SERVICES.

Amino Acid, Essential

CPT 82131 (x10)

Profile Includes Histidine; isoleucine; leucine; lysine; methionine; phenylalanine; threonine; tryptophan; valine; arginine

Patient Preparation Fasting

Special Instructions None

Specimen Volume 1.5 mL EDTA plasma

Minimum Volume 0.5 mL

Collection Container EDTA tube

Transport Container Plastic transport tube

Storage & Transport Instructions Freeze

Causes for Rejection Gross hemolysis

Amino Acid, Fractionated

CPT 82131 (x25)

Profile Includes Aspartic acid; glutamic acid; hydroxyproline; serine; asparagine; glycine; glutamine; taurine; histidine; citrulline; threonine; alanine; arginine; proline; a-amino-N-butyric acid; tyrosine; valine; methionine; cystine; isoleucine; leucine; phenylalanine; tryptophan; ornithine; lysine

Patient Preparation Fasting

Special Instructions None

Specimen Volume 1.5 mL EDTA plasma

Minimum Volume 0.5 mL

Collection Container EDTA tube

Transport Container Plastic transport tube

Storage & Transport Instructions Freeze

Causes for Rejection Gross hemolysis

Beta Carotene

CPT 82380

Patient Preparation None

Special Instructions None

Specimen Volume 1 mL serum; light protected

Minimum Volume 0.2 mL

Collection Container SST or red-stopper tube

Transport Container Amber plastic transport tube

Storage & Transport Instructions Refrigerate or freeze

Causes for Rejection Gross hemolysis

Boron, Urine

CPT 82190

Synonyms Urine B

Patient Preparation None

Special Instructions None

Specimen Volume 20 mL urine

Minimum Volume 10 mL

Collection Container Clean container

Transport Container Plastic transport tube

Storage & Transport Instructions Refrigerate or freeze

Candida Antibodies IgG, IgA, IgM

CPT 86628 (x3)

Patient Preparation None

Special Instructions None

Specimen Volume 0.5 mL serum

Minimum Volume 0.2 mL

Collection Container SST or red-stopper tube

Transport Container Plastic transport tube

Storage & Transport Instructions Refrigerate or freeze

Causes for Rejection Gross hemolysis

Calcium, RBC

CPT 82310

Synonyms RBC Ca

Patient Preparation None

Special Instructions None

Specimen Volume 0.5 mL heparin RBC, washed 1x

Minimum Volume 0.1 mL

Collection Container Heparin tube

Transport Container Metal-free plastic transport tube

Storage & Transport Instructions Refrigerate or freeze

CEA

CPT 82378

Synonyms Carcinoembryonic Antigen

Patient Preparation None

Special Instructions Note whether patient is a smoker

Specimen Volume 0.5 mL serum

Minimum Volume 0.2 mL

Collection Container SST or red-stopper tube

Transport Container Plastic transport tube

Storage & Transport Instructions Refrigerate or freeze

Causes for Rejection Gross hemolysis

Cholesterol, Total

CPT 82465

Patient Preparation None

Special Instructions None

Specimen Volume 1 mL serum

Minimum Volume 0.5 mL

Collection Container SST or red-stopper tube

Transport Container Plastic transport tube

Storage & Transport Instructions Refrigerate or freeze

Causes for Rejection Gross hemolysis

Chromium, Serum

CPT 82495

Synonyms Serum Cr

Patient Preparation None

Special Instructions None

Specimen Volume 0.5 mL serum

Minimum Volume 0.1 mL

Collection Container Trace element non-additive tube

Transport Container Metal-free plastic transport tube

Storage & Transport Instructions Refrigerate or freeze

Causes for Rejection Hemolysis

Coenzyme Q10

CPT 82491

Synonyms CoQ10

Patient Preparation None

Special Instructions None

Specimen Volume 1 mL serum; light protected

Minimum Volume 0.5 mL

Collection Container SST or red-stopper tube

Transport Container Amber plastic transport tube

Storage & Transport Instructions Freeze

Causes for Rejection Gross hemolysis

Complete Blood Count with Differential (CBC)

CPT 85027, 85007

Synonyms CBC with Differential

Profile Includes: Automated count (white blood cells; red blood cells; hemoglobin; hematocrit; MCV; MCH; MCHC; platelets); Manual Differential

Patient Preparation None

Special Instructions Submit 2 blood smear slides with whole blood sample. Collection tube must be filled to full draw capacity to insure correct blood to anticoagulant ratio of specimen. Specimen must be shipped same day as collection. Specimens accepted Monday – Thursday only.

Specimen Volume 6 mL EDTA whole blood

Minimum Volume same

Collection Container EDTA tube

Transport Container Plastic transport tube. Stable 24 hours at room temperature. Refrigerated specimens are stable 48 hours.

Storage & Transport Instructions Refrigerate. DO NOT FREEZE! **NOTE tube needs to be wrapped properly to prevent breakage during transportation.**

Causes for Rejection Gross hemolysis; frozen specimen.

Copper, RBC

CPT 82525

Synonyms RBC Cu

Patient Preparation None

Special Instructions None

Specimen Volume 0.5 mL Heparin RBC, washed 1x

Minimum Volume 0.05 mL

Collection Container Heparin tube

Transport Container Metal-free plastic transport tube

Storage & Transport Instructions Refrigerate or freeze

Copper, Serum

CPT 82525

Synonyms Serum Cu

Patient Preparation None

Special Instructions None

Specimen Volume 0.5 mL serum

Minimum Volume 0.05 mL

Collection Container Trace element non-additive tube

Transport Container Metal-free plastic transport tube

Storage & Transport Instructions Refrigerate or freeze

Causes for Rejection Hemolysis

C-Reactive Protein (CRP) – Ultra Sensitive

CPT 86141

Synonyms Cardiac-Reactive Protein

Patient Preparation None

Special Instructions None

Specimen Volume 1 mL serum

Minimum Volume 0.5 mL

Collection Container SST or red-stopper tube

Transport Container Plastic transport tube

Storage & Transport Instructions Refrigerate or freeze

Causes for Rejection Gross hemolysis

Creatinine

CPT 82565

Patient Preparation None

Special Instructions None

Specimen Volume 1 mL serum

Minimum Volume 0.5 mL

Collection Container SST or red-stopper tube

Transport Container Plastic transport tube

Storage & Transport Instructions Refrigerate or freeze

Causes for Rejection Gross hemolysis

Cytomegalovirus IgG

CPT 86644-90

Synonyms CMV-IgG

Patient Preparation None

Special Instructions None

Specimen Volume 1 mL serum

Minimum Volume 0.5 mL

Collection Container SST or red-stopper tube

Transport Container Plastic transport tube

Storage & Transport Instructions Room temperature or refrigerate

Causes for Rejection Gross hemolysis

Cytotoxic Food Sensitivity, Basic

CPT 86849

Synonyms Basic Cyto

Profile Includes 20 specific food allergens (these are included in the Std Cyto List #1): chocolate; coffee; corn; dextrose; whole egg; white flour; fructose; honey; hops; oat; white potato; rice; rye; soybean; cane sugar; beet sugar; tobacco; whole wheat; baker yeast; brewer yeast.

Patient Preparation 12-14 hour fast, (no food, supplements, medications or tobacco products). *Bottled water* is the only beverage allowed during the fast. Patient should not brush teeth the morning of the collection.

Special Instructions BCL must be notified 1-2 days prior to collection. Monday through Wednesday collections only. Specimen must be shipped same day as collection. Specimens accepted Monday – Thursday only.

Specimen Volume 10 mL ACD whole blood. Draw-tube must be filled to full draw capacity to insure correct blood to anticoagulant ratio of specimen.

Minimum Volume same

Collection Container Yellow stopper ACD Solution A tube

Transport Container Plastic transport tube

Storage & Transport Instructions Refrigerate. DO NOT FREEZE! **NOTE tube needs to be wrapped properly to prevent breakage during transportation.**

Causes for Rejection Gross hemolysis; frozen specimen; specimen not received by noon within 24 hours of collection

Cytotoxic Food Sensitivity, Individual

CPT 86849

Synonyms Individual Cyto

Note A personalized profile may be created by requesting any combination of food antigens listed in the Standard List #1 or Supplemental List #2 Cyto (i.e. may be ordered individually from either list). See allergens lists on page 15.

Patient Preparation 12-14 hour fast, (no food, supplements, medications or tobacco products). *Bottled water* is the only beverage allowed during the fast. Patient should not brush teeth the morning of the collection.

Special Instructions BCL must be notified 1-2 days prior to collection. Monday through Wednesday collections only. Specimen must be shipped same day as collection. Specimens accepted Monday – Thursday only.

Specimen Volume 10 mL ACD whole blood, per 1-90 individual food antigens requested; a second 10 mL ACD tube is required if more food antigens are requested. Draw-tube must be filled to full draw capacity to insure correct blood to anticoagulant ratio of specimen.

Minimum Volume same

Collection Container Yellow stopper ACD Solution A tube

Transport Container Plastic transport tube

Storage & Transport Instructions Refrigerate. DO NOT FREEZE! **NOTE tube needs to be wrapped properly to prevent breakage during transportation.**

Causes for Rejection Gross hemolysis; frozen specimen; specimen not received by noon within 24 hours of collection

Cytotoxic Food Sensitivity, Special Preparation

CPT 86849

Synonyms Special Prep Cyto

Note -- any food allergen not listed in the Standard List #1 or the Supplemental List #2 (see allergens lists on page 15). Requires a small sample of the allergen substance to be tested. This must arrive a minimum of two full working days (Monday – Friday) prior to arrival of the patient's blood specimen. Contact BCL for approval of allergen substance that is to be tested against patient's blood.

Patient Preparation for blood collection **12-14 hour** fast, (no food, supplements, medications or tobacco products). *Bottled water* is the only beverage allowed during the fast. Patient should not brush teeth the morning of the collection.

Special Instructions BCL must be notified 1-2 days prior to collection. Monday through Wednesday blood collections only. Blood specimen must be shipped same day as collection. Blood specimens accepted Monday – Thursday only.

Specimen Volume 10 mL ACD whole blood. Draw-tube must be filled to full draw capacity to insure correct blood to anticoagulant ratio of specimen.

Minimum Volume same

Collection Container Yellow stopper ACD Solution A tube

Transport Container Plastic transport tube

Storage & Transport Instructions Refrigerate. DO NOT FREEZE! **NOTE tube needs to be wrapped properly to prevent breakage during transportation.**

Causes for Rejection Gross hemolysis; frozen specimen; specimen not received by noon within 24 hours of collection

Cytotoxic Food Sensitivity, Standard List #1

CPT 86849

Synonyms Std Cyto

Profile Includes 90 specific food allergens (includes Basic Cyto). See allergens list on page 15.

Patient Preparation 12-14 hour fast, (no food, supplements, medications or tobacco products). *Bottled water is the only beverage allowed during the fast.*

Patient should not brush teeth the morning of the collection.

Special Instructions BCL must be notified 1-2 days prior to collection. Monday through Wednesday collections only. Specimen must be shipped same day

as collection. Specimens accepted Monday – Thursday only.

Specimen Volume 10 mL ACD whole blood. Draw-tube must be filled to full draw capacity to insure correct blood to anticoagulant ratio of specimen.

Minimum Volume same

Collection Container Yellow stopper ACD Solution A tube

Transport Container Plastic transport tube

Storage & Transport Instructions Refrigerate. DO NOT FREEZE! **NOTE tube needs to be wrapped properly to prevent breakage during transportation.**

Causes for Rejection Gross hemolysis; frozen specimen; specimen not received by noon within 24 hours of collection

Cytotoxic Food Sensitivity, Standard List #2

CPT 86849

Synonyms Cyto List #2

Profile Includes 88 specific food allergens. Refer to allergens list on page 15.

Patient Preparation 12-14 hour fast, (no food, supplements, medications or tobacco products). *Bottled water* is the only beverage allowed during the fast. Patient should not brush teeth the morning of the collection.

Special Instructions BCL must be notified 1-2 days prior to collection. Monday through Wednesday collections only. Specimen must be shipped same day as collection. Specimens accepted Monday – Thursday only.

Specimen Volume 10 mL ACD whole blood. Draw-tube must be filled to full draw capacity to insure correct blood to anticoagulant ratio of specimen.

Minimum Volume same

Collection Container Yellow stopper ACD Sol'n A tube.

Transport Container Plastic transport tube

Storage & Transport Instructions Refrigerate. DO NOT FREEZE! **NOTE tube needs to be wrapped properly to prevent breakage during transportation.**

Causes for Rejection Gross hemolysis; frozen specimen; specimen not received by noon within 24 hours of collection

DHEA-S

CPT 82627

Synonyms Dehydroepiandrosterone Sulfate

Patient Preparation None

Special Instructions None

Specimen Volume 0.5 mL serum

Minimum Volume 0.1 mL

Collection Container SST or red-stopper tube

Transport Container Plastic transport tube

Storage & Transport Instructions Refrigerate or freeze

Causes for Rejection Gross hemolysis

Epstein-Barr Virus EA-IgG Ab

CPT 86663

Synonyms EBV-EA; EBV-Early Antigen-IgG Ab; antibody to the EBV Early Antigen

Patient Preparation None

Special Instructions None

Specimen Volume 0.5 mL serum

Minimum Volume 0.1 mL

Collection Container SST or red-stopper tube

Transport Container Plastic transport tube
Storage & Transport Instructions Refrigerate or freeze
Causes for Rejection Gross hemolysis

Estradiol

CPT 82670
Synonyms E2, Estradiol- 17 beta
Patient Preparation None
Special Instructions None
Specimen Volume 0.8 mL
Minimum Volume 0.3 mL
Collection Container SST or red-stopper tube
Transport Container Plastic transport tube
Storage & Transport Instructions Refrigerate
Cause for Rejection plasma specimen

Fatty Acids, RBC

CPT 82725 (x11)
Synonyms EFA, RBC
Profile Includes Omega-6 fatty acid family (linoleic, gamma linolenic, dihomogamma linolenic, arachidonic, total omega-6); Omega-3 fatty acid family (alpha linolenic, eicosapentaenoic, docosahexaenoic, total omega-3 omega-6 to omega-3 balance); Monounsaturated fatty acids (oleic, nervonic, total monounsaturated); Saturated fatty acid family (palmitic, stearic, total saturated); Unsaturated to Saturated Ratio.
Patient Preparation None
Special Instructions None
Specimen Volume 1 mL EDTA RBC, washed 1x
Minimum Volume 0.4 mL
Collection Container EDTA tube
Transport Container Plastic transport tube
Storage & Transport Instructions Freeze
Causes for Rejection Gross hemolysis

Folate (Folic Acid)

CPT 82746
Synonyms Folic Acid
Patient Preparation None
Special Instructions None
Specimen Volume 1 mL serum; light protected
Minimum Volume 0.2 mL
Collection Container SST or red-stopper tube
Transport Container Amber plastic transport tube
Storage & Transport Instructions Refrigerate or freeze
Causes for Rejection Gross hemolysis

Glucose

CPT 82947
Patient Preparation Fasting recommended
Special Instructions Separate serum from cells within 45 minutes of draw
Specimen Volume 1 mL serum
Minimum Volume 0.5 mL
Collection Container SST or red-stopper tube
Transport Container Plastic transport tube
Storage & Transport Instructions Refrigerate or freeze
Causes for Rejection Gross hemolysis

Glucose 6-Phosphate Dehydrogenase (G6PD)

CPT 82955
Synonyms Glucose 6-Phosphate Dehydrogenase
Patient Preparation None

Special Instructions Monday thru. Thursday collections only. Specimen must be shipped same day as collection.

Specimen Volume 6 mL EDTA whole blood

Minimum Volume same

Collection Container EDTA tube. Collection tube must be filled to full draw capacity to insure correct blood to anticoagulant ratio of specimen.

Transport Container Plastic transport tube.

Storage & Transport Instructions Refrigerated

specimens are stable for 48 hours. DO NOT FREEZE!

NOTE tube needs to be wrapped properly to prevent breakage during transportation. Specimen must be received by no later than noon the next day following collection.

Causes for Rejection Gross hemolysis; clotted specimen; frozen specimen

Glutathione RBC

CPT 82979
Patient Preparation None
Special Instructions Monday through Thursday collections only. Specimen must be shipped same day as collection.
Specimen Volume 10 mL ACD-solution A, whole blood **and** 6 mL EDTA, whole blood
Minimum Volume same
Collection Containers one Yellow stopper ACD-sol'n A tube **and** one EDTA tube. Each collection tube must be filled to full draw capacity to insure correct blood to anticoagulant ratio of specimens.
Transport Container Plastic transport tubes. Identify on transport tube the type of anticoagulant use.
Storage & Transport Instructions Refrigerate. DO NOT FREEZE! **NOTE tubes need to be wrapped properly to prevent breakage during transportation.** Specimen must be received by no later than noon the next day following collection.
Causes for Rejection Moderate or excessive hemolysis; clotted specimen; frozen specimen

H. pylori Antibody IgG

CPT 86677
Synonyms *Helicobacter pylori* IgG Ab
Patient Preparation None
Special Instructions None
Specimen Volume 0.5 mL serum
Minimum Volume 0.25 mL
Collection Container SST or red-stopper tube
Transport Container Plastic transport tube
Storage & Transport Instructions Refrigerate or freeze
Causes for Rejection Gross hemolysis

Hair Tissue Analysis

CPT P2031 (Medicare), 82310, 82495, 82525, 83540, 84311, 83735, 83785, 84311, 84255, 84630, 82108, 82175, 82300, 83655, 83825
Profile Includes 11 Hair Nutrient Minerals [Calcium (Ca); Chromium (Cr); Copper (Cu); Iron (Fe); Potassium (K); Magnesium (Mg); Manganese (Mn); Sodium (Na); Selenium (Se); Zinc (Zn); log (Na x Zn) / Cu is calculated]; 5 Hair Toxic Minerals [Aluminum (Al); Arsenic (As); Cadmium (Cd); Lead (Pb); Mercury (Hg)]
Patient Preparation None

Special Instructions Obtain hair samples from several locations on the lower portion of the back of the patient's head (from the area that includes the nape of neck and up to as high as the tops of the ears). *Sample should include only hair cut from next to the scalp & which is two inches or less in length* (measured from the scalp end of the hair sample). If hair length is greater than two inches, trim hair sample to two inches from scalp end & dispose of excess length of hair. The use of "thinning shears" is recommended for use on patients with hair lengths of two inches or less. For those patients with longer hair lengths, cut several strands of hairs at the scalp by using standard trimming scissors & then trim hair sample to proper length, discarding the excess. Collection kit is available upon request.

Specimen Volume 1 gram of hair

Minimum Volume 0.5 grams

Collection Container Plastic Ziploc bag

Transport Container Plastic Ziploc bag

Storage & Transport Instructions Room temperature

Causes for Rejection Inadequate volume; excess hair length not trimmed & discarded

Hemoccult-ICT (3 specimens)

CPT 82270 (x3)

Synonyms Fecal Occult Blood

Patient Preparation Do not collect samples three days before/after or during your menstrual period, or while you have bleeding hemorrhoids or blood in your urine, open cut on hands, or have strained during bowel movement.

Special Instructions Collect samples from 3 consecutive bowel movements closely spaced in time. Collection card should be returned to BCL within 3 days of first specimen collection.

Specimen Volume samples of 3 different stools, placed onto collection card.

Minimum Volume same

Collection Container Do not open windows of collection card until ready to transfer fresh stool specimen to the card. Use clean disposable container to collect stool. Use clean wooden specimen sticks to transfer small amount of each stool specimen to the specimen card. Date & time of each specimen must be noted on the front of the card.

Transport Container Hemoccult II specimen card. Place card in sealed Ziploc bag for transport.

Storage & Transport Instructions Store card at room temperature. Protect slides from heat & volatile chemicals.

Hemoglobin (Hgb) A1c

CPT 83036

Synonyms HbA1c

Patient Preparation None

Special Instructions Monday through Thursday collections only. Specimen must be shipped same day as collection.

Specimen Volume 6 ml EDTA whole blood

Minimum Volume same

Collection Container EDTA tube. Collection tube must be filled to full draw capacity to insure correct blood anticoagulant ratio of specimens.

Transport Container Send entire tube. **NOTE** tube needs to be wrapped properly to prevent breakage during transportation.

Storage and Transport Instructions Store specimens at room temperature or refrigerate. **DO NOT FREEZE!** **NOTE tube needs to be wrapped properly to prevent breakage during transportation.** Specimen must be received by no later than noon the next day following collection.

Causes for Rejection Clotted Specimen

Histamine

CPT 83088

Patient Preparation Discontinue antihistamines two days before collection of specimen

Special Instructions None

Specimen Volume Draw until blood stops flowing into tube provided by Bio Center Lab. These tubes will draw blood to just below the black mark on the label. Immediately transfer unclotted blood into 5 mL 10% trichloroacetic acid (TCA). Mix specimen well by vigorously shaking TCA tube after adding blood. Stable one month if kept frozen. Note: Histamine, Spermidine & Spermine testing may all three be performed from a single specimen (i.e. separate aliquots are not required).

Minimum Volume same

Collection Container Non-additive tube; draw this tube last if other tubes are being collected from the patient; do not allow whole blood to clot

Transport Container Plastic transport tube

Storage & Transport Instructions Freeze

Causes for Rejection Inadequate specimen added to TCA aliquot; specimen not frozen.

Histamine, Spermidine and Spermine Profile

CPT 83088, 84999 (x2)

See Histamine

Homocysteine

CPT 82131

Patient Preparation None

Special Instructions None

Specimen Volume 1 mL serum

Minimum Volume 0.5 mL

Collection Container SST or red-stopper tube

Transport Container Plastic transport tube

Storage & Transport Instructions Refrigerate or freeze

Causes for Rejection Gross hemolysis

Indican, Urine

CPT 84999

Patient Preparation None

Special Instructions None

Specimen Volume 12 mL urine

Minimum Volume 5.0 mL

Collection Container Clean container

Transport Container Plastic transport tube

Storage & Transport Instructions Freeze

Causes for Rejection Less than 5.0 mL received

Lipid Profile

CPT 80061

Profile Includes Cholesterol; triglycerides; high-density lipoprotein (HDL); very low-density lipoprotein (VLDL); low-density lipoprotein (LDL) & risk classification for coronary heart disease (CHD); cholesterol to HDL ratio & risk classification for CHD; LDL to HDL ratio & risk classification for CHD

Patient Preparation Fasting

Special Instructions None

Specimen Volume 4 mL serum

Minimum Volume 1.5 mL

Collection Container SST or red-stopper tube

Transport Container Plastic transport tube

Storage & Transport Instructions Refrigerate or freeze

Causes for Rejection Gross hemolysis

Lipoprotein (a)

CPT 83520

Synonyms Lp(a)

Patient Preparation None

Special Instructions None

Specimen Volume 1 mL serum

Minimum Volume 0.5 mL

Collection Container SST or red-stopper tube

Transport Container Plastic transport tube

Storage & Transport Instructions Refrigerate or freeze

Causes for Rejection Gross hemolysis

Lutein

CPT 82491

Patient Preparation None

Special Instructions None

Specimen Volume 1 mL serum; light protected

Minimum Volume 0.2 mL

Collection Container SST or red-stopper tube

Transport Container Amber plastic transport tube

Storage & Transport Instructions Refrigerate or freeze

Causes for Rejection Gross hemolysis

Lycopene

CPT 82491

Patient Preparation None

Special Instructions None

Specimen Volume 1 mL serum; light protected

Minimum Volume 0.2 mL

Collection Container SST or red-stopper tube

Transport Container Amber plastic transport tube

Storage & Transport Instructions Refrigerate or freeze

Causes for Rejection Gross hemolysis

Magnesium, RBC

CPT 83735

Synonyms RBC Mg

Patient Preparation None

Special Instructions None

Specimen Volume 1.5 mL Heparin RBC, washed 1x

Minimum Volume 0.5 mL

Collection Container Heparin tube

Transport Container Metal-free plastic transport tube

Storage & Transport Instructions Refrigerate or freeze

Magnesium, Serum

CPT 83735

Synonyms Serum Mg

Patient Preparation None

Special Instructions None

Specimen Volume 1.5 mL serum

Minimum Volume 0.5 mL

Collection Container Trace element non-additive tube

Transport Container Metal-free plastic transport tube

Storage & Transport Instructions Refrigerate or freeze

Causes for Rejection Hemolysis

Manganese, RBC

CPT 83785

Synonyms RBC Mn

Patient Preparation None

Special Instructions None

Specimen Volume 1.5 mL Heparin RBC, washed 1x

Minimum Volume 0.5 mL

Collection Container Heparin tube

Transport Container Metal-free plastic transport tube

Storage & Transport Instructions Refrigerate or freeze

Cause for Rejection Specimen clotted.

Manganese, Serum

CPT 83785

Synonyms Serum Mn

Patient Preparation None

Special Instructions None

Specimen Volume 1.5 mL serum

Minimum Volume 0.5 mL

Collection Container Trace element non-additive tube

Transport Container Metal-free plastic transport tube

Storage & Transport Instructions Refrigerate or freeze

Causes for Rejection Hemolysis

Parasitology, Stool Exam (single specimen)

CPT 87177; 87272 (x2)

Profile Includes Stool exam (single specimen);

Cryptosporidium Ag; Giardia Ag

Patient Preparation No bismuth, barium, laxatives, antidiarrheals and antibiotics for a least one week prior to collection.

Specimen Volume Using the collection spoon built into the lid of the Ecofix vial, add enough stool to Ecofix specimen vial to bring combination of Ecofix fluid and stool sample to red specimen line on vial. Filling vial to slightly above the red line is allowed, if some air space remains within the vial. Close cap tightly! Shake vial vigorously until contents are well mixed.

Minimum Volume Same

Collection Container Use clean dry container. Do not allow urine or water to come in contact with specimen.

Transport Container Para-Pak Ultra Ecofix plastic transport vial

Storage & Transport Instructions Room temperature

Causes for Rejection Frozen Specimen

Parasitology, Stool Exam (three specimens)

CPT 87177 (x3); 87272 (x6)

See instructions for Stool Exam (single specimen).

Collect three separate stool specimens, placing each in its own plastic transport tube, with time & date noted on the vial. Collection days should be spread out to approximately every other day.

Potassium /Sodium (K/Na) Ratio, Urine

CPT 84133; 84300

Synonyms K/Na Ratio**Profile Includes:** Urine potassium (K); urine sodium (Na); K/Na ratio**Patient Preparation** None**Special Instructions** None**Specimen Volume** 1 mL urine**Minimum Volume** 0.5 mL**Collection Container** Clean container**Transport Container** Plastic transport tube**Storage & Transport Instructions** Freeze**PSA**

CPT 84153

Synonyms Prostate-Specific Antigen**Patient Preparation** None**Special Instructions** None**Specimen Volume** 1 mL serum**Minimum Volume** 0.5 mL**Collection Container** SST or red-stopper tube**Transport Container** Plastic transport tube**Storage & Transport Instructions** Freeze**Causes for Rejection** Gross hemolysis**Pyrroles, Urine**

CPT 84999

Synonyms Mauve Factor; Kryptopyrroles**Patient Preparation** (1) If first time testing for pyrroles, discontinue taking any B6 or Zinc one week prior to collecting specimen. (2) If under treatment for pyrroluria, continue taking vitamin B6 and Zinc**Special Instructions** None**Specimen Volume** Approximately 8 mL urine added to 500mg of ascorbic acid. Stable at least 1 month if kept frozen.**Minimum Volume** 2 mL**Collection Container** Clean container**Transport Container** Amber plastic transport tube or protected from light**Storage & Transport Instructions** Freeze**Causes for Rejection** Ascorbic acid not used to maintain specimen stability**Pyrroles, Urine (3 collections)**

CPT 84999 x3

See Pyrroles, Urine**Special Instructions** 3 collections

A more comprehensive evaluation of pyrrole excretion may be done by collecting 3 specimens:

Specimen #1: Collected in a calm mental state

Specimen #2: Collected in an anxious mental state

Specimen #3: Collected in an extreme anxious mental state.

Note: Label specimens carefully with each condition

RBC Elements Profile #1

CPT 83735, 84630, 82525, 82310

Profile Includes: Magnesium; zinc; copper; calcium**Patient Preparation** None**Special Instructions** None**Specimen Volume** 1.5 mL Heparin RBC, washed 1x**Minimum Volume** 0.5 mL**Collection Container** Heparin tube**Transport Container** Metal-free plastic transport tube**Storage & Transport Instructions** Refrigerate or freeze**RBC Elements Profile #2**

CPT 83735, 84630, 82525, 82310, 83785, 84255

Profile Includes: Magnesium; zinc; copper; calcium; manganese; selenium**Patient Preparation** None**Special Instructions** None**Specimen Volume** 1.5 mL Heparin RBC, washed 1x**Minimum Volume** 0.5 mL**Collection Container** Heparin tube**Transport Container** Metal-free plastic transport tube**Storage & Transport Instructions** Refrigerate or freeze**RBC Elements Profile #3**

CPT 83735, 82310

Profile Includes: Magnesium; calcium**Patient Preparation** None**Special Instructions** None**Specimen Volume** 1.5 mL Heparin RBC, washed 1x**Minimum Volume** 0.5 mL**Collection Container** Heparin tube**Transport Container** Metal-free plastic transport tube**Storage & Transport Instructions** Refrigerate or freeze**Selenium, RBC**

CPT 84255

Synonyms RBC Se**Patient Preparation** None**Special Instructions** None**Specimen Volume** 1.5 mL Heparin RBC, washed 1x**Minimum Volume** 0.5 mL**Collection Container** Heparin tube**Transport Container** Metal-free plastic transport tube**Storage & Transport Instructions** Refrigerate or freeze**Cause for Rejection** Specimen clotted.**Selenium, Serum**

CPT 84255

Synonyms Serum Se**Patient Preparation** None**Special Instructions** None**Specimen Volume** 1.5 mL serum**Minimum Volume** 0.5 mL**Collection Container** Trace element non-additive tube**Transport Container** Metal-free plastic transport tube**Storage & Transport Instructions** Refrigerate or freeze**Spermidine**

CPT 84999

See Histamine

Spermine

CPT 84999

See Histamine

Strontium, Urine

CPT 82190

Synonyms Urine Sr**Patient Preparation** None**Special Instructions** None**Specimen Volume** 20 mL urine**Minimum Volume** 10 mL**Collection Container** Clean container**Transport Container** Plastic transport tube

Storage & Transport Instructions Refrigerate or freeze

T₃, Free (Unbound)

CPT 84481

Synonyms Free Tri-iodothyronine; f-T₃

Patient Preparation None

Special Instructions None

Specimen Volume 1 mL serum,

Minimum Volume 0.5 mL

Collection Container SST or red-stopper tube

Transport Container Plastic transport tube

Storage & Transport Instructions Refrigerate or freeze

Causes for Rejection Gross hemolysis

T₄, Free (Direct)

CPT 84439

Synonyms Free T₄, Direct, Serum; Unbound T₄

Patient Preparation None

Special Instructions None

Specimen Volume 1 mL serum

Minimum Volume 0.5 mL

Collection Container SST or red-stopper tube

Transport Container Plastic transport tube

Storage & Transport Instructions Refrigerate or freeze

Causes for Rejection Plasma Specimen, gross lipemia

Testosterone

CPT 84403-90

Patient Preparation None

Special Instructions None

Specimen Volume 1 mL serum

Minimum Volume 0.3 mL

Collection Container SST or red-stopper tube

Transport Container Plastic transport tube

Storage & Transport Instructions Refrigerate or freeze

Causes for Rejection Gross hemolysis

Thyroid Panel

CPT 8448; 84439; 84443

Panel Includes Free T₃, Free T₄, TSH

Patient Preparation None

Special Instructions None

Specimen Volume 2 mL serum

Minimum Volume 1 mL

Collection Container SST or red-stopper tube

Transport Container Plastic transport tube

Storage & Transport Instructions Refrigerate or freeze

Causes for Rejection Gross hemolysis, gross lipemia

Trace Elements – Urine, Post Chelation UMEP

CPT 82108, 82310, 82300, 82495, 82525, 83540, 83735, 83785, 83655, 84630

Profile Includes Aluminum; Calcium; Cadmium; Chromium; Copper; Iron; Magnesium; Manganese; Lead; Zinc; Total 24-hour Volume

Patient Preparation Post chelation 24-hour collection begins at same time as the chelation therapy IV is begun. Patient must empty bladder immediately prior to IV. Urine must be collected for a full 24-hour period – including during the IV therapy, if necessary. 24-hour collection period begins immediately after patient has urinated (but not collected) to empty his/her bladder. Patient should note date & time in order to collect urine for a full 24-hour period.

Special Instructions Results are based upon a full 24-hour collection. The patient must collect all urine during the 24-hour period. If, for some reason, the patient is unable to collect urine for a full 24 hours, please note the length of time of collection on the requisition or the approximate amount of urine sample lost due to non-collection.

Specimen Volume Measure the urine to obtain the 24-hour volume. Note total volume of 24-hour specimen and date & time of completion on requisition. Mix the 24-hour urine well by shaking the gallon jug before pouring an aliquot of 150 mL into the transport container.

Preferred Volume 150 mL aliquot

Minimum Volume 11 mL aliquot

Collection Container One-gallon mineral-free amber plastic jug. For convenience, a mineral-free cup may be used to catch urine and then be poured into the gallon jug. Do not rinse the collection cup between collections (trace minerals may be in the rinse water). Instead, seal cup with mineral-free plastic lid in-between use during the 24-hour collection period.

Transport Container Acid-washed mineral-free plastic transport bottle

Storage & Transport Instructions Refrigerate specimen during the 24-hour collection process. Refrigerate or freeze aliquot for transport.

Causes for Rejection Total 24-hour urine volume not noted on requisition; non-mineral-free containers used for collection & transport

Trace Elements - Urine, Pre & Post Chelation UMEP

CPT 82108, 82310, 82300, 82495, 82525, 83540, 83735, 83785, 83655, 84630

For Pre collection: 24-hour collection period begins immediately after patient has urinated (but not collected) to empty his/her bladder. Patient should note date & time in order to collect urine for a full 24-hour period. Urine must be collected for a full 24-hour period prior to having the chelating agent administered to the patient.

Pre & Post Aliquots must be properly labeled when submitted. Both specimens must be submitted together.

TSH

CPT 84443

Synonyms Thyroid-Stimulating Hormone

Patient Preparation None

Special Instructions None

Specimen Volume 1 mL serum

Minimum Volume 0.5 mL

Collection Container SST or red-stopper tube

Transport Container Plastic transport tube

Storage & Transport Instructions Refrigerate or freeze

Causes for Rejection Gross hemolysis

Urinalysis + Urine Vitamin C

CPT (81002, if *without* urine sediment microscopy (81000, if *with* urine sediment microscopy); 81009

Synonyms UA + C

Profile Includes Color, appearance, & specific gravity are recorded. Dipstick testing includes: leukocyte esterase; nitrite; pH; protein; glucose; ketones; urobilinogen; bilirubin; blood (intact RBC); hemoglobin (lysed RBC); urine Vitamin C. Confirmatory tests are run if protein, ketones, or bilirubin are abnormal on dipstick test. Any abnormal color, appearance, or readings (except pH) on dipstick will be followed up with a microscopic analysis of the urine sediment.

Patient Preparation None

Special Instructions First morning urine is preferred, but not required. Wash hands prior to collection. For a midstream-catch specimen, patient should urinate a small amount of urine into the toilet, then collect urine in the collection container without stopping the urine stream. Female patients: if specimen may be contaminated with vaginal discharge or menstrual blood, the vaginal area should be thoroughly cleansed by wiping from front to back with moistened towelettes prior to collecting a urine specimen. Note on requisition if patient is currently menstruating.

Specimen Volume 20 mL urine; midstream-catch; light protected

Minimum Volume 15 mL

Collection Container Clean container

Transport Container Plastic transport tube; light protected

Storage & Transport Instructions Refrigerate within 10 minutes of collection. Keep refrigerated. DO NOT FREEZE!

Causes for Rejection Contaminated specimen; frozen specimen; unrefrigerated specimen; insufficient volume; specimen not protected from light. Specimen must be received by noon on Mondays - Fridays following the day of collection.

Vitamin A

CPT 84590

Synonyms Retinol

Patient Preparation None

Special Instructions None

Specimen Volume 2 mL serum; light protected

Minimum Volume 0.5 mL

Collection Container SST or red-stopper tube

Transport Container Amber plastic transport tube

Storage & Transport Instructions Refrigerate or freeze

Causes for Rejection Gross hemolysis

Vitamin A, C, E Mini Profile

CPT 84590; 82180; 84446

Synonyms Antioxidant Mini Profile

Patient Preparation None

Special Instructions See instructions for vitamins A, E & Plasma C. Vitamins A & E may share the same specimen tube.

Vitamin A, C, E, B12, Folate Profile

CPT 84590; 82180; 84446; 82607; 82746

Patient Preparation None

Special Instructions See instructions for vitamins A, E, B12, Folate & Plasma C. Vitamins A & E may share the same specimen tube. Vitamin B12 & Folate may share the same specimen tube.

Vitamin A, E, Beta Carotene, Lutein, Lycopene Profile

CPT 84590; 84446; 82380; 82491 (x2)

Synonyms Lipid Soluble Antioxidant Profile

Patient Preparation None

Special Instructions None

Specimen Volume 3 mL serum; light protected

Minimum Volume 1 mL

Collection Container SST or red-stopper tube

Transport Container Amber plastic transport tube

Storage & Transport Instructions Refrigerate or freeze

Causes for Rejection Gross hemolysis

Vitamin B Assessment Profile

CPT 84425; 84252; 84591; 84207

Profile Includes Vitamins B1, B2, B3, B5, B6

Patient Preparation None

Special Instructions See instructions for Vitamins B1, B2, B3, B5 & B6.

Vitamin B1

CPT 84425

Synonyms Thiamine

Patient Preparation None

Special Instructions None

Specimen Volume 2 mL Heparin RBC, washed 1x; light protected

Minimum Volume 1.0 mL

Collection Container Heparin tube

Transport Container Amber plastic transport tube

Storage & Transport Instructions Freeze

Causes for Rejection Gross hemolysis

Vitamin B12

CPT 82607

Synonyms Cobalamin

Patient Preparation None

Special Instructions None

Specimen Volume 1 mL serum; light protected

Minimum Volume 0.2 mL

Collection Container SST or red-stopper tube

Transport Container Amber plastic transport tube

Storage & Transport Instructions Refrigerate or freeze

Causes for Rejection Hemolysis

Vitamin B12, Folate Profile

CPT 82607; 82746

Patient Preparation None

Special Instructions None

Specimen Volume 1 mL serum; light protected

Minimum Volume 0.4 mL

Collection Container SST or red-stopper tube

Transport Container Amber plastic transport tube

Storage & Transport Instructions Refrigerate or freeze

Causes for Rejection Hemolysis

Vitamin B2

CPT 84252

Synonyms Riboflavin

Patient Preparation None

Special Instructions None

Specimen Volume 2 mL Heparin RBC; washed 1x, light protected

Minimum Volume 1.0 mL

Collection Container Heparin tube
Transport Container Amber plastic transport tube
Storage & Transport Instructions Freeze
Causes for Rejection Gross hemolysis

Vitamin B3

CPT 84591
Synonyms Niacinamide; Pyridine
Patient Preparation None
Special Instructions None
Specimen Volume 4 mL Heparin whole blood; light protected
Minimum Volume 2 mL
Collection Container Heparin tube
Transport Container Amber plastic transport tube
Storage & Transport Instructions Freeze
Causes for Rejection Gross hemolysis

Vitamin B5

CPT 84591
Synonyms Pantothenic acid
Patient Preparation None
Special Instructions None
Specimen Volume 1 mL Heparin RBC, washed 1x; light protected
Minimum Volume 0.3 mL
Collection Container Heparin tube
Transport Container Amber plastic transport tube
Storage & Transport Instructions Freeze
Causes for Rejection Gross hemolysis

Vitamin B6

CPT 84207
Synonyms Pyridoxine; Erythrocyte AST/EGOT
Patient Preparation None
Special Instructions None
Specimen Volume 1 mL Heparin RBC, washed 3x; light protected
Minimum Volume 0.2 mL
Collection Container Heparin tube
Transport Container Amber plastic transport tube
Storage & Transport Instructions Freeze
Causes for Rejection Gross hemolysis

Vitamin C, Plasma

CPT 82180
Synonyms Plasma Ascorbic Acid
Patient Preparation None
Special Instructions Separate plasma from cells and process specimen immediately after collection. Ratio of plasma to 3% metaphosphoric acid (MPA) must be maintained, so care must be taken to add exact amount of plasma to the provided 4.5 mL aliquot of MPA. Plasma-MPA specimen is stable at least 3 months if kept frozen.
Specimen Volume 3 mL EDTA or Heparin plasma added to 4.5 mL *cold* MPA. Mix vigorously.
Minimum Volume 2 mL plasma added to 3 mL (adjusted volume) cold MPA. If minimum volumes of plasma & MPA are used, it *must* be noted on the requisition as (2 mL plasma + 3 mL MPA used).
Collection Container EDTA or Heparin tube
Transport Container Plastic transport tube
Storage & Transport Instructions Freeze

Causes for Rejection Gross hemolysis; insufficient specimen; specimen not frozen; incorrect ratio of plasma to MPA

Vitamin C, Plasma - Post IVC Specimen

CPT 82180
Synonyms Plasma Ascorbic Acid
Patient Preparation None
Special Instructions Note on requisition grams of IVC given. Draw specimen from site on opposite arm used for IVC immediately after completed infusion. Separate plasma from cells and process specimen immediately after collection. Ratio of plasma to 3% metaphosphoric acid (MPA) must be maintained, so care must be taken to add exact amount of plasma to the provided 4.5 mL aliquot of MPA. Plasma-MPA specimen is stable at least 3 months if kept frozen.
Specimen Volume 3 mL EDTA or Heparin plasma added to 4.5 mL *cold* MPA. Mix vigorously.
Minimum Volume 1 mL plasma added to 1.5 mL (adjusted volume) *cold* MPA. If minimum volumes of plasma & MPA are used, it *must* be noted on the requisition as (1 mL plasma + 1.5 mL MPA used).
Collection Container EDTA or Heparin tube
Transport Container Plastic transport tube
Storage & Transport Instructions Freeze
Causes for Rejection Gross hemolysis; insufficient specimen; specimen not frozen; incorrect ratio of plasma to MPA; grams of IVC not noted on requisition
Note: Diabetic patients or health care workers caring for diabetic patients who monitor their blood glucose with a finger stick strip and meter please note that high level post I.V.C. (ascorbic acid) will cause a "FALSE POSITIVE" on the finger stick test. Wait eight hours or more to check the patient's glucose with the finger stick and meter. If a test is needed during this time, have a serum glucose performed in a certified clinical (reference) laboratory.

Vitamin C Screen, Urine

CPT 81099
Synonyms Urine C
Patient Preparation None
Special Instructions None
Specimen Volume 2 mL urine; light protected
Minimum Volume 0.5 mL
Collection Container Clean container
Transport Container Plastic transport tube; light protected
Storage & Transport Instructions Freeze within 30 minutes of collection; keep frozen
Causes for Rejection specimen not kept frozen; specimen not protected from light

Vitamin D, 25-Hydroxy

CPT 82306
Synonyms 25-Hydroxycalciferol; 25-OH-D
Patient Preparation None
Special Instructions None
Specimen Volume 0.5 mL serum; light protected
Minimum Volume 0.1 mL
Collection Container SST or red-stopper tube
Transport Container Amber plastic transport tube
Storage & Transport Instructions Refrigerate or freeze
Causes for Rejection Gross hemolysis

Vitamin E**CPT 84446****Synonyms** Alpha Tocopherol**Patient Preparation** None**Special Instructions** None**Specimen Volume** 0.5 mL serum; light protected**Minimum Volume** 0.2 mL**Collection Container** SST or red-stopper tube**Transport Container** Amber plastic transport tube**Storage & Transport Instructions** Refrigerate or freeze**Causes for Rejection** Gross hemolysis**Yeast Species (Oral)****CPT 87201****Patient Preparation** None**Special Instructions** Swish 10 mL sterile water in mouth for 1 minute then spit back into collection container**Specimen Volume** 10 mL mouth wash**Minimum Volume** Same**Collection Container** Sterile collection cup**Transport Container** Sterile collection cup**Storage & Transport Instructions** Refrigerate**Causes for Rejection** Frozen specimen**Zinc, RBC****CPT 84630****Patient Preparation** None**Special Instructions** None**Specimen Volume** 1.5 mL Heparin RBC, washed 1x**Minimum Volume** 0.5 mL**Collection Container** Heparin tube**Transport Container** Metal-free plastic transport tube**Storage & Transport Instructions** Refrigerate or freeze**Causes for Rejection** Specimen clotted.**Zinc, Serum****CPT 84630****Synonyms** Serum Zn**Patient Preparation** None**Special Instructions** None**Specimen Volume** 1.5 mL serum**Minimum Volume** 0.5 mL**Collection Container** Trace element non-additive tube**Transport Container** Metal-free plastic transport tube**Storage & Transport Instructions** Refrigerate or freeze**Causes for Rejection** Moderate or excessive hemolysis

Cytotoxic Standard List 1

Fruits	Vegetables	Grains	Spices/Herbs	Additives
Apple	Asparagus	Flour, White	Chocolate	BHA/BHT
Banana	Avocado	Hops	Mustard	Chlorine
Blueberry	Bean, String	Oats	Pepper, Black	Dye, Blue
Cantaloupe	Broccoli	Rice, Brown	Vanilla	Dye, Green
Coconut	Cabbage	Rice, White	Yeast	Dye, Red
Grape, Seedless	Carrot	Rye	Nuts and Seeds	Dye, Yellow
Grapefruit	Cauliflower	Wheat, Whole	Almond	Fluorine
Lemon	Celery	Proteins	Cashew	MSG
Orange	Corn	Beef	Pecan	Nutrasweet
Peach	Cucumber	Chicken	Beverages	Sodium Nitrate
Pear	Garlic	Pork	Coffee	Splenda
Pineapple	Lettuce	Turkey	Tea	Sulfur Dioxide
Strawberry	Mushroom	Codfish	Sugars	Tobacco
Watermelon	Olives	Salmon	Fructose	OTC Med.
Legumes	Onion	Shrimp	Honey	Aspirin
Bean, Navy	Pea, Green	Tuna	Sugar, Cane	Tylenol
Bean, Pinto	Pepper, Green	Egg, Whole	Sugar, Maple	
Peanut	Potato, Sweet	Cheese, Cheddar		
Soybean	Potato, White	Cheese, Cottage		
	Spinach	Cheese, Mozz.		
	Squash	Milk, Cow		
	Tomato	Milk, Goat		

Cytotoxic Standard List 2

Fruits	Vegetables	Proteins	Spices/Herbs	Additives
Apricot	Bean Sprouts	Bacon	Basil	Caffeine
Blackberry	Beet	Casien	Bay Leaves	Gelatin
Cherry	Brussel Sprouts	Catfish, Channel	Carob Powder	Glycerol
Cranberry	Catsup	Clam	Cayenne Pepper	Beverages
Date	Chili Pepper	Crab	Cinnamon	Beer
Grape, Concord	Eggplant	Duck	Ginger	Pepsi/Coca-Cola
Honeydew Melon	Okra	Flounder	Horseradish	Dr. Pepper
Lime	Onion, Green	Haddock	Licorice	Sugars
Nectarine	Pumpkin	Ham	Nutmeg	Dextrose
Plum	Radish	Lamb	Oregano	Stevia
Pomegranate	Turnip Greens	Liver, Beef	Paprika	
Raspberry	Yam	Liver, Chicken	Peppermint	
Tangerine	Zucchini	Lobster	Rosemary	
Nuts and Seeds	Grains	Oyster	Sage	
Canola Oil	Amaranth	Perch, Ocean	Legumes	
Brazil	Barley	Red Snapper	Bean, Lima	
Flaxseed	Buckwheat	Sardine	Lentils	
Pistachio	Malt	Scallops	Pea, Chick	
Poppyseed	Millet	Sole		
Safflower Oil	Popcorn	Trout, Rainbow		
Sesame Seeds	Quinoa	Yogurt		
Sunflower Seeds	Rice, Wild			
Walnuts	Tapioca			

Cytotoxic Basic List				
Fruits	Vegetables	Proteins	Sugars	Additives
Apple	Corn	Chicken	Sugar, Cane	MSG
Banana	Onion	Egg, Whole	Grains	Nutrasweet
Grape, Seedless	Potato, White	Milk, Cow	Flour, White	Spices/Herbs
Orange	Tomato	Beverages	Oat	Chocolate
Legumes		Coffee	Rice	Vanilla
Soybean		Tea	Wheat, Whole	Yeast

Notes: