



Laboratory
Test
Catalog



Bio-Center
Laboratory

BIO-CENTER LABORATORY

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riordanclinic.org/laboratory

Table of Contents

Introduction to our Services	i
Licensure/Certification	i
Proficiency Testing	i
Policies	i
Client Billing	i
Drawing and Processing Specimens	ii
Specimen Submittal and Shipping	iv
Test Requisition	v
Payment Submission Sheet	vi
Medicare Waiver of Liability	vii

Test Index

Amino Acid, Essential	1
Amino Acid, Fractionated.....	1
Beta Carotene	1
Boron, Urine	1
Candida Antibodies IgG, IgA, IgM.....	1
CEA.....	1
Cholesterol, Total.....	1
Chromium, Serum.....	1
Coenzyme Q10	1
Complete Blood Count (CBC), with Differential.....	1
Copper, RBC.....	2
Copper, Serum.....	2
C-Reactive Protein (CRP) – Ultra Sensitive	2
Creatinine.....	2
Cytotoxic Food Sensitivity, Basic.....	2
Cytotoxic Food Sensitivity, Individual.....	2
Cytotoxic Food Sensitivity, Special Preparation	3
Cytotoxic Food Sensitivity, Standard List #1	3
Cytotoxic Food Sensitivity, Standard List #2	3
DHEA-S.....	3
Estradiol	4
Fatty Acids, RBC.....	4

Ferritin	4
Folate (Folic Acid)	4
Glucose	4
Glucose 6-Phosphate Dehydrogenase (G6PD).....	4
Glutathione, RBC	4
Glycemic Profile	5
Hemoccult-ICT (3 specimens)	5
Hemoglobin (Hgb) A1c.....	5
Histamine	5
Homocysteine	5
Indican, Urine	5
Insulin.....	5
Lipid Profile	6
Lutein	6
Lycopene.....	6
Magnesium, RBC	6
Magnesium, Serum.....	6
Manganese, RBC.....	6
Manganese, Serum.....	6
Parasitology, Stool Exam (single specimen)	7
Parasitology, Stool Exam (three specimens).....	7
Progesterone	7
PSA.....	7
PSA, Free.....	7
Pyrroles, Urine	7
Pyrroles, Urine (3 Collections)	7
RBC Elements Profile #1	7
RBC Elements Profile #2	8
RBC Elements Profile #3	8
Selenium, RBC	8
Selenium, Serum	8
Strontium, Urine	8
T3, Free (Unbound)	8
T4, Free (Direct).....	8
Testosterone	8
Thyroid Antibodies	8
Thyroid Panel.....	9

TSH	9
Urinalysis + Urine Vitamin C	9
Vitamin A.....	9
Vitamin A, C, E Mini Profile.....	10
Vitamin A, C, E, B12, Folate Profile.....	10
Vitamin A, E, Beta Carotene, Lutein, Lycopene Profile	10
Vitamin B Assessment Profile.....	10
Vitamin B1.....	10
Vitamin B12.....	10
Vitamin B12, Folate Profile	10
Vitamin B2.....	10
Vitamin B3.....	10
Vitamin B5.....	11
Vitamin B6.....	11
Vitamin C, Plasma.....	11
Vitamin C, Plasma- Post IVC Specimen.....	11
Vitamin C Screen, Urine	12
Vitamin D, 25-Hydroxy	13
Vitamin E.....	13
Yeast Species (Oral).....	13
Zinc, RBC.....	13
Zinc, Serum.....	13
Cytotoxic Food Sensitivity, Standard List #2, Table of Allergens	14
Cytotoxic Food Sensitivity, Standard List #1, Table of Allergens	14
Cytotoxic Food Sensitivity, Basic List, Table of Allergens	15

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. We specialize in a wide variety of nutritional tests including many vitamins, minerals, RBC fatty acids and amino acids. We also test for urine pyrroles, whole blood histamine, cytotoxic food sensitivities and many others.

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.

Policies

- ▶ **Test Cancellation:** A test may be cancelled at any time prior to reporting the result and you will be charged a \$40 cancellation fee. 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 the laboratory 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):** Vitamin C assays are performed daily. The usual TAT for all other assays is ten 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, date of expiration and card security code (CSC), 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 receipt will be issued for submission by the patient to their insurance.
- ▶ While BCL is a participating member of Medicare, Medicare has advised us to not file *known* non-covered services.

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.

Note: If neither box is checked, the ordering physician will be billed and will be responsible for payment.

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 with toothpaste brushing with bottled water is acceptable) 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 paper towels). Shipping containers with unfrozen whole blood specimen should be tightly packed to prevent jostling during shipping. Add newspaper or other padding as needed.
- ▶ When storage instructions state specimen is to be frozen, the specimen should be frozen and then later shipped with the (frozen) ice pack included in our kits. Specimens shipped in this manner will arrive in a cold or semi-frozen condition. No additional ice packs are needed. 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's are to be used for other testing.

Specimen	Whole blood
Draw tube	Heparin or EDTA tube
Processing	Specimens can be shipped in the tube they were drawn in.

Specimen	Urine for Indican, Pyrroles, 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 and frozen ice pack (if required) should then be sealed in the bubble bag provided (bubble bag not required for specimens shipped in styrofoam boxes) 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.** Place the box containing the specimen 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. If you are located outside of the Continental United States, you must make your own shipping arrangements.
- ▶ **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 ____ / ____ / ____	<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.
- 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

Note: If no payment option is selected, physician account will be billed; New clients are required to submit payment with first specimen. Billing option will apply on approved accounts.

Credit Card Number	Exp. Date
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Please print cardholder name as printed on card	Signature of cardholder
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BIO-CENTER LABORATORY
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(316) 682-3100

PATIENT NAME _____
CHART # _____ DT. OF SVC. _____
TOTAL LAB TESTS \$ _____
NON-COVERED LABS \$ _____ **BALANCE DUE TODAY**

REQUIRED BY MEDICARE - WAIVER OF LIABILITY

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". Medicare does not pay for routine testing or screening. I believe in your case, Medicare is likely to respond to the service(s) indicated below:**

Medicare usually covers the following laboratory tests except if Medicare determines them not a medical necessity. Medicare will not pay for vitamin, mineral and nutrient testing on follow-up visits.

AMINO ACID FRANCTIONATION BETA CAROTENE BORON (URINE) CALCIUM CANDIDA IGG, IGA, IGM CANDIDA (ORAL) CO ENZYME Q10 C-REACTIVE PROTEIN (CRP) CREATININE DHEA ESSENTIAL FATTY ACIDS ESTRADIOL FOLIC ACID (FOLATE)	G6PD GIARDIA/CRYPTOSPOIDIUM GLUTATHIONE (RBC) HISTAMINE HOMOCYSTEINE LUTEIN LYCOPENE MAGNESIUM PROGESTERONE STOOL EXAMINATION STRONTIUM, URINE T3 FREE (UNBOUND) T4 FREE (DIRECT)	TESTOSTERONE THYROID ANTIBODIES VITAMIN A VITAMIN B1 VITAMIN B12 VITAMIN B2 VITAMIN B3 VITAMIN B5 VITAMIN B6 VITAMIN C VITAMIN E
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ABN (Advance Beneficiary Notice) is required for the following limited coverage tests. The patient's diagnosis does not match any of the ICD-9 codes established as eligible for coverage by Medicare. Medicare may not allow for this many laboratory tests within this time frame.

CBC CEA CHOLESTEROL CHROMIUM	COPPER FERRITIN GLUCOSE HEMOGLOBIN A1c	INSULIN LIPID PROFILE MANGANESE OCCULT (BLOOD)	PSA, FREE PSA SELENIUM TSH	URINALYSIS w/wo MICRO VITAMIN D ZINC
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Past submissions have determined the following test as non-covered or not medically necessary by Medicare.

HAIR ANALYSIS CYTOTOXIC FOOD SENSITIVITY	PYRROLES (URINE) RBC OMEGA-3 EFA (C20-C22)	VITAMIN C (URINE) INDICAN (URINE)
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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 or is not primary, I agree to be personally and fully responsible for payment within 30 days.

ONE TIME AUTHORIZATION

I request that payment of authorized Medicare benefits be made on my behalf to the Bio-Center Laboratory for any services furnished me by the laboratory. I authorize any holder of medical information about me to release to The Centers for Medicare & Medicaid Services (CMS) and its agents any information needed to determine these benefits or the benefits payable for related services

Patient _____ Date _____ Note: Your

health information will be kept confidential. Any information that we collect about you on this form will be kept confidential in our office. If a claim is submitted to Medicare, your health information on this form may be shared with Medicare. Your health information, which Medicare sees will be kept confidential by Medicare.



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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**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** 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!**Causes for Rejection** Gross hemolysis; frozen specimen.**Copper, RBC**

CPT 82525

Synonyms RBC Cu**Patient Preparation** None**Special Instructions** None**Specimen Volume** 6 mL Heparin whole blood**Minimum Volume** 1 mL**Collection Container** Heparin tube**Transport Container** Collection container**Storage & Transport Instructions** Refrigerate. DO NOT FREEZE!**Causes for Rejection** Frozen specimen**Copper, Serum**

CPT 82525

Synonyms Serum Cu**Patient Preparation** None**Special Instructions** None**Specimen Volume** 2 mL serum**Minimum Volume** 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**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**Cytotoxic Food Sensitivity, Basic**

CPT 86849

Synonyms Basic Cyto**Profile Includes** 24 specific food allergens**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** Monday through Wednesday collections only. Specimen must be shipped same day as collection.**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** Collection container**Storage & Transport Instructions** Refrigerate. DO NOT FREEZE! 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 and #2 (i.e. may be ordered individually from either list). See allergens lists at the end of this section.

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 Monday through Wednesday collections only. Specimen must be shipped same day as collection.

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** Collection container

Storage & Transport Instructions Refrigerate. DO NOT FREEZE! 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 Lists #1 and #2. See allergens lists at the end of this section.

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 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 Monday through Wednesday blood collections only. Blood specimen must be shipped same day as collection.

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** Collection container

Storage & Transport Instructions Refrigerate. DO NOT FREEZE! 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. See allergens lists at the end of this section.

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 Monday through Wednesday collections only. Specimen must be shipped same day as collection.

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** Collection Container

Storage & Transport Instructions Refrigerate. DO NOT FREEZE! 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 90 specific food allergens. See allergens lists at the end of this section.

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 Monday through Wednesday collections only. Specimen must be shipped same day as collection.

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** Collection container

Storage & Transport Instructions Refrigerate. DO NOT FREEZE! 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** 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

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 or freeze
Cause for Rejection plasma specimen

Fatty Acids, RBC

CPT 82725 (x11)
Synonyms EFA, RBC
Profile Includes Omega-6 fatty acid family (linoleic, gamma linolenic, dihomo-gamma 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, total monounsaturated); Saturated fatty acid family (palmitic, stearic, total saturated); Unsaturated to Saturated Ratio; Elaitic
Patient Preparation None
Special Instructions None
Specimen Volume 1 mL EDTA whole blood
Minimum Volume 0.4 mL
Collection Container EDTA tube
Transport Container Collection container
Storage & Transport Instructions Refrigerate. DO NOT FREEZE!
Causes for Rejection Gross hemolysis, frozen specimen

Ferritin

CPT 82728
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

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 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 to anticoagulant ratio of specimen.
Transport Container Collection container
Storage & Transport Instructions Refrigerated specimens are stable for 48 hours. DO NOT FREEZE! 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 Collection containers
Storage & Transport Instructions Refrigerate. DO NOT FREEZE! 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 Moderate or excessive hemolysis; clotted specimen; frozen specimen

Glycemic Profile

CPT 82947, 83036

Profile Includes Glucose; Hemoglobin A1c; Estimated Average Glucose.

Patient Preparation Fasting recommended

Special Instructions Separate serum from cells within 45 minutes of draw.

Specimen Volume 1 mL serum, 6 mL whole blood

Minimum Volume 0.5 mL Serum, 1 mL whole blood

Collection Container SST tube, EDTA tube

Transport Container Plastic transport tube for serum, Collection container for whole blood

Storage & Transport Instructions Refrigerate whole blood, freeze serum

Causes for Rejection Gross hemolysis, clotted whole blood specimen

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 bowel movements approximately every other day. Collection card should be returned to BCL within 3 days of last 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 Do not freeze

Specimen Volume 6 ml EDTA whole blood

Minimum Volume same

Collection Container EDTA tube.

Transport Container Collection container

Storage and Transport Instructions Store specimens at room temperature or refrigerate.

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.

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 with preservative.

Storage & Transport Instructions Freeze

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

Homocysteine

CPT 82131

Patient Preparation None

Special Instructions Keep specimen cold and centrifuge within 6 hours.

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

Insulin

CPT 83525

Synonyms Free Prostate-Specific Antigen

Patient Preparation Fasting

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

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**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** 6 mL Heparin whole blood**Minimum Volume** 1 mL**Collection Container** Heparin tube**Transport Container** Collection container**Storage & Transport Instructions** Refrigerate. DO NOT FREEZE!**Causes for Rejection** Frozen specimen**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** 3 mL Heparin whole blood**Minimum Volume** 1 mL**Collection Container** Heparin tube**Transport Container** Collection container**Storage & Transport Instructions** Refrigerate. DO NOT FREEZE!**Causes for Rejection** Frozen specimen**Manganese, Serum**

CPT 83785

Synonyms Serum Mn**Patient Preparation** None**Special Instructions** None**Specimen Volume** 2 mL serum**Minimum Volume** 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

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 bring combination of fluid and stool sample to red specimen line on vial. Filling vial to slightly above the red line is allowed. Close cap tightly and shake vigorously.**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.

Progesterone**CPT** 84144**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** Freeze**Causes for Rejection** Gross hemolysis**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**PSA, Free****CPT** 84154**Synonyms** Free 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** 6 mL Heparin whole blood**Minimum Volume** 1 mL**Collection Container** Heparin tube**Transport Container** Collection container**Storage & Transport Instructions** Refrigerate. DO NOT FREEZE!**Causes for Rejection** Frozen specimen

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 6 mL Heparin whole blood
Minimum Volume 2 mL
Collection Container Heparin tube
Transport Container Collection container
Storage & Transport Instructions Refrigerate. DO NOT FREEZE!
Causes for Rejection Frozen specimen

RBC Elements Profile #3

CPT 83735, 82310
Profile Includes: Magnesium; calcium
Patient Preparation None
Special Instructions None
Specimen Volume 6 mL Heparin whole blood
Minimum Volume 2 mL
Collection Container Heparin tube
Transport Container Collection container
Storage & Transport Instructions Refrigerate. DO NOT FREEZE!
Causes for Rejection Frozen specimen

Selenium, RBC

CPT 84255
Synonyms RBC Se
Patient Preparation None
Special Instructions None
Specimen Volume 1.5 mL Heparin whole blood
Minimum Volume 0.5 mL
Collection Container Heparin tube
Transport Container Collection container
Storage & Transport Instructions Refrigerate. DO NOT FREEZE!
Causes for Rejection Frozen specimen

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

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 Antibodies

CPT 86800; 86376
Panel Includes Thyroid Antithyroglobulin Antibody, Thyroid Peroxidase (TPO) Antibodies
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 Freeze
Causes for Rejection Gross hemolysis, gross lipemia

Thyroid Panel**CPT** 84481; 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**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 Monday - Friday following the day of collection.**Vitamin A****CPT** 84590**Synonyms** Retinol**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

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, 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** 4 mL Heparin whole blood; light protected**Minimum Volume** 2.0 mL**Collection Container** Heparin tube**Transport Container** Amber plastic transport tube**Storage & Transport Instructions** Refrigerate. DO NOT FREEZE!**Causes for Rejection** Frozen specimen**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** 4 mL Heparin whole blood, light protected**Minimum Volume** 2.0 mL**Collection Container** Heparin tube**Transport Container** Amber plastic transport tube**Storage & Transport Instructions** Refrigerate. DO NOT FREEZE!**Causes for Rejection** Frozen specimen**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** 2 mL Heparin whole blood; light protected**Minimum Volume** 1 mL**Collection Container** Heparin tube**Transport Container** Amber plastic transport tube**Storage & Transport Instructions** Refrigerate. DO NOT FREEZE!**Causes for Rejection** Frozen specimen**Vitamin B6**

CPT 84207

Synonyms Pyridoxine; Erythrocyte AST/EGOT**Patient Preparation** None**Special Instructions** None**Specimen Volume** 2 mL Heparin whole blood; light protected**Minimum Volume** 1 mL**Collection Container** Heparin tube**Transport Container** Amber plastic transport tube**Storage & Transport Instructions** Refrigerate. DO NOT FREEZE!**Causes for Rejection** Frozen specimen**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** who monitor blood glucose with a finger stick strip and meter: 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 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** 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** Refrigerate or Freeze**Causes for Rejection** Gross hemolysis

Vitamin E

CPT 84446

Synonyms Alpha Tocopherol**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**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** 6 mL Heparin whole blood**Minimum Volume** 1 mL**Collection Container** Heparin tube**Transport Container** Collection container**Storage & Transport Instructions** Refrigerate or freeze**Storage & Transport Instructions** Refrigerate. DO NOT FREEZE!**Causes for Rejection** Frozen specimen**Zinc, Serum**

CPT 84630

Synonyms Serum Zn**Patient Preparation** None**Special Instructions** None**Specimen Volume** 2 mL serum**Minimum Volume** 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** Moderate or excessive hemolysis

Cytotoxic Standard List 1

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

Cytotoxic Standard List 2

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

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