

New Procedures

Several new procedures have been made available since the last issue of *LabHorizons* was published. For a complete file of LabCorp's published clinical assays, keep back issues of *LabHorizons* together with your copy of the *Directory of Services and Interpretive Guide*.

Chronic Leukemia Profile, Flow Cytometry 489090

Related Information

- Leukemia/Lymphoma Management Test Reference Chart
- T- and B-Lymphocyte Clonal Genotype Profile
- T-Cell Receptor Gene Rearrangements for Leukemia
- Chromosome Analysis

Synonyms

Leukemia Profile, Chronic

Special Instructions Please direct any questions regarding this test to oncology customer service at 800-533-0567, ext 4060. Pathologist consultation is available Monday through Friday. Indicate differential diagnosis on test request form. Submit recent CBC results for inclusion in report. Tracking number for acute leukemia testing by flow cytometry. Billing will be performed back end.

Specimen Whole blood, bone marrow aspirate, body fluids, fresh lymph node, spleen, extranodal solid tissue, biopsy, or needle aspirate

Volume 3 mL whole blood or 2 mL bone marrow aspirate, 2 mL body fluid. (Large volumes of body fluids should be concentrated to <5 mL.), 0.5-1.0 cm³ fresh tissue.

Container Lavender-stopper (EDTA whole blood) tube; green-stopper (heparinized bone marrow aspirate) tube, or lavender-stopper (bone marrow aspirate) tube; lavender-stopper (EDTA body fluid) tube; fresh tissue in lymph node transport bottle containing RPMI; or yellow-stopper (ACD whole blood or bone marrow) tube (accepted, not preferred)

Collection Submit blood, bone marrow, and body fluid specimens at room temperature using Leukemia/Lymphoma Specimen Transport Kit (supplied by LabCorp). Draw specimen so it will arrive in the laboratory Monday through Saturday and within 24 hours of collection. Please state date and time of collection on the test request form. For fresh tissue, aseptically, cut tissue in pieces and place in lymph node transport bottle. If aspirate is submitted, rinse needle in transport medium. Submit at room temperature using Lymph Node Transport Kit (supplied by LabCorp). If transport kit is not available, place specimen in sterile container with saline. Submit specimen so it will arrive in the laboratory Monday through Saturday and within 24 hours of surgical removal. To avoid transportation delays, submit specimen on the day of collection. If indicated on the request form, testing can be postponed until the laboratory is notified to continue or cancel the test. Please state on the test request form the date and time of collection and the name and phone number of the pathologist responsible for the histologic or cytologic diagnosis.

Storage Instructions Maintain specimen at room temperature.

Causes for Rejection Hemolysis; specimen clotted; specimen frozen; specimen in formalin or other fixative; blood more than 72 hours old; bone marrow aspirates more than five days old; bags or bottles of body fluid or bronchial washings; tissue in formalin or other fixative; contaminated transport medium. Viability and staining for CD45 (leukocyte common antigen) is performed on all tissue specimens prior to testing.

Use Identify and characterize the following: (1) reactive lymphocytosis vs chronic lymphocytic leukemia (CLL); (2) prolymphocytic leukemia vs lymphoblastic leukemia—large granular lymphocyte proliferations, T-gamma lymphoproliferative disease, natural killer cell proliferations, T-cell CLL, T-cell gamma/delta proliferations; (3) Sézary syndrome; (4) non-Hodgkin's lymphoma; (5) adult T-cell leukemia/lymphoma.

Limitations Not for the assessment of chronic myeloid leukemia (use Acute Leukemia Profile, Flow Cytometry [489055]). Genotyping, to detect T-cell receptor gene rearrangements, is recommended when the immunophenotyping profile suggests a clonal T-cell process. See T-Cell Receptor Gene Rearrangements for Leukemia (480707).

Methodology Immunophenotyping by flow cytometry

Additional Information Neoplastic B-cell proliferations (chronic leukemias and lymphomas) are clonal expansions of cells that express either kappa or lambda immunoglobulin light chains. In normal or reactive processes, a bimodal distribution of kappa- and lambda-positive B cells is present in a ratio of approximately 1.5:1. Immunophenotyping using multiparameter analysis (simultaneous staining with a pan B-cell marker and anti-immunoglobulin light chain antibodies) is a rapid and specific method for detecting and confirming the presence of neoplastic B-cell disorders. Chronic lymphocytic leukemia (CLL) is a clonal lymphoproliferative disorder, usually of B-cell origin (95%), that has been traditionally diagnosed using clinical and morphologic criteria. Incorporation of immunophenotypic features into the diagnostic criteria is helpful in separating common B-cell CLL from other lymphoproliferative disorders. Detection of karyotypic abnormalities is useful in assessing prognosis. Lymphocytes in B-CLL coexpress CD19, CD20, and CD23 pan B-cell antigens, CD5, pan T-cell antigen, and a single immunoglobulin light chain, kappa or lambda. CD10 (CALLA) expression is usually absent. Mantle cell lymphoma is distinguished from CLL by absent or very dim expression of CD23. Lymphomas are biologically complex neoplasms of the immune system. Numerous classification schemes have been developed based on morphologic features. This limited approach is often unreliable. Immunophenotyping, by flow cytometry and/or immunohistochemistry, has emerged as a valuable adjunct to conventional morphologic diagnosis and classification. Flow cytometry offers the advantage of rapid multiparameter analysis. Combining light scatter characteristics with patterns of antigen expression and DNA content provides biological information that is useful in making a diagnosis and assessing prognosis. Various gating strategies can be employed to enhance the detection of minor populations, thus providing a level of sensitivity comparable to molecular methods (gene rearrangement studies). T-cell CLL, unlike B-CLL, is associated with rapid onset, an aggressive clinical course poorly responsive to therapy and decreased survival. Immunophenotyping, in the majority of cases, demonstrates expression of CD3 (a pan T-cell antigen), and CD4 (the helper cell antigen). CD8 (the suppressor/cytotoxic cell antigen) is usually not expressed. Genotyping demonstrates a clonal rearrangement of the T-cell receptor gene. Large granular lymphocyte (LGL) proliferations can be divided into T-cell and natural killer (NK) cell subsets by immunophenotyping. The more common T-cell type expresses CD3, a pan T-cell antigen and CD8, the suppressor/ cytotoxic cell antigen. Genotyping demonstrates a rearrangement of the T-cell receptor gene. The NK cell type is relatively rare and expresses CD2 and CD16 and/or CD56. CD3 expression is absent. Genotyping demonstrates a germline configuration of the T-cell receptor gene. In Sézary syndrome, the neoplastic lymphocytes are T cells with a helper cell phenotype. Expression of CD7, a pan T-cell antigen, is absent and is useful in distinguishing the neoplastic cells from normal T-helper cells. Genotyping demonstrates a clonal rearrangement of the T-cell receptor gene. In adult T-cell leukemia/lymphoma, the neoplastic lymphocytes are T cells with a helper cell phenotype. Expression of CD3, CD4, and CD25 is present. Expression of CD7 is absent. Genotyping demonstrates a clonal rearrangement of the T-cell receptor gene. Detection of a B-cell population coexpressing CD22, CD11c, and CD25 is useful in establishing a diagnosis of hairy cell leukemia when used in conjunction with morphology and cytochemistry. Immunophenotyping by flow cytometry is a sensitive method for detecting residual or recurrent disease in the peripheral blood of patients with an established diagnosis. Detection of a population of cells expressing CD38 and CD138 in the peripheral blood is useful in estab-

lishing a diagnosis of plasma cell leukemia when used in conjunction with morphology.

References

- Bitter MA. Hairy cell leukemia. In: Knowles DM, ed. *Neoplastic Hematopathology*. Baltimore, Md: Williams and Wilkins; 1992.
- Braylan RC. Lymphomas. In: Bauer KD, Duque RE, Shankey TV, eds. *Clinical Flow Cytometry: Principles and Applications*. Baltimore, Md: Williams and Wilkins; 1993.
- Foucar K. B-Cell chronic lymphocytic and prolymphocytic leukemia. In: Knowles DM, ed. *Neoplastic Hematopathology*. Baltimore, Md: Williams and Wilkins; 1992.
- Knowles DM II. The human T-cell leukemias: Clinical, cytomorphologic, immunophenotypic, and genotypic characteristics. *Hum Pathol*. 1986; 17(1):14-33.
- McDaniel HL, MacPherson BR, Tindle BH, et al. Lymphoproliferative disorder of granular lymphocytes: A heterogeneous disease. *Arch Pathol Lab Med*. 1992; 116(3):242-248.
- Miller ML, Fishleder AJ, Tubbs RR. The Expression of CD22 (Leu 14) and CD11c (Leu M5) in chronic lymphoproliferative disorders using two-color flow cytometric analysis. *Am J Clin Pathol*. 1991; 96(1):100-108.

Cytochrome P450 2C19 Genotyping 511320

CPT 83891; 83898; 83900; 83892; 83894(x2); 83912

Synonyms DME Genotyping

Specimen Whole blood

Volume 7 mL

Minimum Volume 3 mL

Container Lavender-stopper (EDTA) tube or yellow-stopper (ACD) tube

Storage Instructions Maintain at room temperature or refrigerate at 4°C

Causes for Rejection Hemolyzed specimen; quantity not sufficient; improper container

Use The cytochrome P450 (CYP450) enzymes catalyze the oxidation of many drugs and chemicals. CYP450 is a large enzyme family that has more than 50 isoenzymes. Individual differences of cytochrome P450 activity can result in the total absence of the metabolism of certain drugs to ultrafast metabolism and can also lead to adverse drug reactions or a lack of therapeutic effect under standard therapy conditions. CYP2C19 is gene 19 within the C subfamily within the 2 family of the CYP450 superfamily. It metabolizes 15% of all prescribed drugs, such as propafenone, omeprazole, sertraline, citalopram, and diazepam. Genetic polymorphisms of CYP2C19 (*2,*3) could be used to predict the altered enzyme activity and address the potential effects of metabolized drugs.

Limitations The metabolism of drugs is also influenced by ethnicity, diet, and other medications. All factors should be considered prior to initiating new therapy.

References

- Blue Cross and Blue Shield Association. Special report: Genotyping for cytochrome P450 polymorphisms to determine drug-metabolizer status. *Tec Assess Prog*. 2004 Dec; 19(9):1-34.

Announcements

Culture Transport Medium Change

The viral, *Chlamydia*, or *Mycoplasma* culture transport medium that LabCorp provides will change to the UTM-RT transport as current inventory of the M4 and M4-RT transports are depleted.

Benefits provided by the UTM-RT transport tube:

- The collection device can be stored at room or refrigerated temperature prior to specimen collection and is easily recognizable by its purple cap, (replacing the red- and blue-capped M4 products). See the illustration, opposite.
- It is a single multipurpose transport medium that can be used for the collection and transport of specimens to be tested for viruses (by culture or immunoassay), *Chlamydia*, *Mycoplasma*, and *Ureaplasma*.

- It can also be used for submission of endocervical or male urethral swab specimens for detection of *Chlamydia trachomatis* and/or *Neisseria gonorrhoeae* by nucleic acid amplification; however, the APTIMA® swab specimen collection kit is preferred for these assays.

Note: After specimen collection, the UTM-RT can be transported at room temperature for as long as 24 hours but should be refrigerated if longer transit times are expected. Instructions for use are printed on the UTM-RT packaging.



UTM-RT
Transport Tube

Changes in Reporting eGFR Results

Effective January 3, 2006, the following changes were made to the eGFR report:

- Any value ≥ 60 mL/min/1.73 m² will be reported as a literal ">60"
- Any value <60 mL/min/1.73 m² will be reported as the actual numeric, eg, "41"
- The Reference Interval will change to 60 – 137 mL/min/1.73 m²
- All results <60 will be flagged
- The table and attached verbiage will be removed from the report

These changes reflect updated guidelines from the National Institutes of Health, National Kidney Disease Education Program. Several studies have demonstrated that the eGFR underestimates renal filtration in apparently healthy individuals. These studies concluded that the MDRD equation was not sufficiently validated in a

normal population; it was only derived from a population with chronic kidney disease (CKD). Several studies are presently under way to validate the equation in several populations of varying health status as well as in individuals with normal renal filtration.

Since the validation of the MDRD equation occurred in patients with CKD, eGFR results that approach 60 mL/min/1.73 m² or below, are accurate and do reflect diminished renal filtration. CKD can occur in patients with eGFR results >60 mL/min/1.73 m² if they exhibit persistent proteinuria. Thus, the table and verbiage that appear on the present report will be replaced with:

Note: Persistent reduction in eGFR <60 min/1.73 m² defines CKD. Patients with eGFR values ≥ 60 min/1.73 m² may also have CKD if evidence of persistent proteinuria is present. Additional information may be found at www.kdoqi.org.

New and Revised CPT Codes

The list below includes new and revised CPT code(s) for 2006. This list consists of routine tests only. It does not include any custom panels created for individual clients. Please contact your local LabCorp account manager if you have questions.

Note: The CPT codes listed here are in accordance with the current edition of *Current Procedural Terminology*, a publication of the American Medical Association. CPT codes are provided for the convenience of our clients; however, correct coding often varies from one carrier to another. Consequently, the codes presented here are intended as general guidelines and should not be used without confirming with the applicable payor that their use is appropriate in each case.

Number	Test Name	CPT Code(s)
502500	Activated Natural Killer/IL-2R	86359; 86357; 86586
511881	Alpha ₁ -Antitrypsin Deficiency, DNA Analysis	83891; 83894; 83900; 83901(x2); 83912
511150	Angelman and Prader-Willi Syndromes, DNA Analysis	83891; 83894; 83900; 83912
333561	Ashkenazi Jewish Carrier Profile	83891(x2); 83909; 83900; 83901(x20); 83892; 83914(x31); 83912(x3); 83080
511253	Bat-26, Microsatellite Instability for Hereditary Nonpolyposis Colorectal Cancer	83891; 83909(x2); 83898; 83907; 83892; 83914(x2); 83904; 83912
480716	B-Cell Gene Rearrangement, PCR	83891; 83909; 83900; 83901(x7); 83912
480566	BCL2 Transcript Detection for Lymphoma	83891; 83894; 83900; 83901(x2); 83912
512145	Bloom Syndrome, DNA Analysis	83891; 83900; 83892; 83914; 83912
511147	Canavan Disease, DNA Analysis	83891; 83900; 83901(x2); 83892; 83914(x4); 83912
480459	Chromosome 18q Allelic Loss, Frozen Tissue	83891(x2); 83909(x2); 83900(x2); 83901(x8); 83912
481101	Chromosome 18q Allelic Loss, Paraffin Block	83891(x2); 83909(x2); 83900(x2); 83901(x8); 83912
511311	Colon Cancer, Microsatellite Instability	83891(x2); 83909(x2); 83900(x2); 83901(x8); 83912
510010	Comparative Genomic Hybridization Chip Array, Constitutional	83891; 83894; 88271(x83); 88291
511915	Connexin 26 (Cx26), DNA Analysis	83891; 83908(x2); 83896(x2); 83892(x2); 83903(x2); 83912
164871	Cyclic Citrullinated Peptide (CCP), IgG Antibodies, ELISA	86200
480700	Cystic Fibrosis Extended Profile	83891; 83900; 83901(x68); 83892(x2); 83914(x70); 83912
480533	Cystic Fibrosis Profile, DNA Analysis	83891; 83909; 83900; 83901(x14); 83914(x25); 83912
480555	Cystic Fibrosis Profile, DNA Analysis and 5T Allele Genotyping	83891; 83909; 83900; 83901(x13); 83901; 83912; 83914(x25); 83914(x3)
480970	Cystic Fibrosis, 5T Allele Genotyping	83891; 83909; 83898; 83912; 83914(x3)
480541	Cystic Fibrosis, Fetal Analysis	83891; 83909; 83900; 83901(x14); 83914(x25); 83912
511270	Cytochrome P450 2C9 Genotyping	83891; 83898; 83900; 83894(x2); 83901(x2); 83912
511160	Cytochrome P450 2D6 Genotyping	83891; 83894; 83908(x25); 83900; 83901(x2); 83896(x25); 83892(x25); 83903(x2); 83912
511316	Cytochrome P450 2D6/2C19 Genotyping and Phenotyping	83891; 83894; 83900; 83896(x29); 83892(x29); 83903; 83912
511162	Factor II (Prothrombin), DNA Analysis	83891; 83894; 83898; 83892; 83912
511154	Factor V Leiden Mutation Analysis	83891; 83894; 83898(x2); 83912
511352	Familial Dysautonomia, DNA Analysis	83891; 83900; 83892; 83914(x2); 83912
511212	Fanconi Anemia (Type C), DNA Analysis	83891; 83900; 83914(x2); 83892; 83912
480525	Fetal Sickle Cell Anemia, DNA Analysis	83891; 83898; 83893(x3); 83912; 83896(x3)
480008	FLT3 Mutation Detection	83891; 83909; 83900; 83892; 83912
510115	Fragile X Syndrome, Chromosome and DNA Analysis	83891; 83909; 83900; 83912; 88230; 88262; 88289; 88291
510461	Fragile X Syndrome, Cytogenetics/DNA With Reflex to Multiprobe Subtelomere FISH (Telo-Scan)	83891; 83909; 83900; 83912; 88230; 88262; 88289; 88291
510065	Fragile X Syndrome, DNA Analysis	83891; 83909; 83900; 83912
511048	Gaucher Disease, DNA Analysis	83891; 83900; 83901(x6); 83892; 83914(x8); 83912
188110	<i>Giardia lamblia</i> By EIA and Ova and Parasites Examination	87177; 87209; 87329
259317	Helper/Suppressor and Natural Killer Profile	86359; 86360; 86357
551840	Hepatitis B Virus (HBV) GenoSure	83891(x2); 83898; 83894; 83909; 83904(x2); 83912
511345	Hereditary Hemochromatosis, DNA Analysis	83891; 83894(x3); 83898(x2); 83892(x3); 83912
500314	HPA-1a (PLA1 Platelet Antigen) Genotyping (PLA 2 Polymorphism Detection)	83891; 83892; 83894; 83898; 83912
500302	HR2 Haplotype (Factor VHR2), A4070G Polymorphism	83891; 83892; 83894; 83898; 83912
480724	IgL Gene Rearrangement, PCR	83891; 83909; 83900; 83901(x11); 83912
512053	Infertility--Male, Y Deletion, DNA Analysis	83891; 83894(x2); 83900; 83901(x4); 83912
512020	Jewish Heritage Profile	83891(x2); 83909; 83900; 83901(x25); 83892; 83914(x36); 83912(x3)
512111	Jewish Heritage Profile II	83891(x2); 83909; 83900; 83901(x39); 83892; 83914(x50); 83912(x6)
120188	Lipoprotein (a)	83695
804500	Lipoprotein Subfractionation Profile	83701; 84478
511337	Maternal Cell Contamination	83891(x2); 83894(x2); 83900(x2); 83901(x8); 83912
511238	Methylenetetrahydrofolate Reductase (MTHFR) Thermolabile Variant, DNA Analysis	83891; 83894; 83898(x2); 83892(x2); 83912
511386	Mucopolipidosis Type IV Mutation Detection	83891; 83900; 83892; 83914(x2); 83912
505016	Natural Killer Cell Surface Antigen (CD3-, CD16+, CD56+ Marker Analysis)	86357
511329	Niemann-Pick Disease, DNA Analysis	83891; 83900; 83901(x2); 83892; 83914(x4); 83912
884247	NMR LipoProfile	83704; 82465
008623	Ova and Parasites Examination, Routine	87177; 87209
500309	Plasminogen Activator Inhibitor (PAI-1) 4G/5G Polymorphism	83891; 83892; 83894; 83898; 83912
512094	PreGen-Plus, Colorectal Cancer Detection	83907; 83890; 83909(x2); 83898(x22); 83904(x33); 83896(x13); 83912
511180	Rett Syndrome, DNA Analysis	83891; 83908(x12); 83892(x12); 83896(x12); 83903(x2); 83912
510222	Sex Determination (SRY), DNA Analysis	83891; 83894; 83898(x2); 83912
500110	SHOX Mutation Detection By DHPLC	Pending
716712	Sirolimus (Rapamune™), Blood	80195
480860	T and B Gene Rearrangement, PCR	83891; 83909; 83900; 83901(x10); 83912
505370	T- and B-Lymphocyte and Natural Killer Cell Profile	86359; 86360; 86355; 86357
096917	T- and B-Lymphocyte Differential Profile	86359; 86360; 86355
510404	Tay-Sachs Disease, DNA Analysis	83891; 83900; 83901(x5); 83892; 83914(x7); 83912
505750	T-Cell Activation Profile, CD8 Subsets	86359; 86360; 86367; 86586(x2)
480708	T-Cell Gene Rearrangement, PCR	83891; 83909; 83900; 83901; 83912
512103	Thrombotic Risk Profile, DNA Analysis	83891; 83894(x3); 83898(x5); 83892(x3); 83912(x3)
176548	Twin Zygosity Study	83890(x2); 83909(x2); 83900(x2); 83912
470054	Uniparental Disomy (UPD), DNA Analysis	83891; 83894; 83900; 83912

Updates to the *Directory of Services and Interpretive Guide*

Test Name	Number	Field/Change
Aspergillus DNA, PCR	138772	<p>Specimen Whole blood, bronchoalveolar lavage (BAL), cerebrospinal fluid, tissue, serum</p> <p>Volume 5 mL whole blood, 1 mL CSF, 1 mL BAL, >250 mg tissue, 1.0 mL serum</p> <p>Minimum Volume 0.5 mL serum</p> <p>Storage Instructions Refrigerate BAL, CSF (ship within 24 hours of collection). Maintain whole blood at room temperature. Freeze tissue; serum: refrigerate or freeze.</p>
Cytomegalovirus (CMV), Qualitative, by PCR	138693	<p>Specimen Whole blood, CSF, nasopharyngeal/throat swab in viral transport medium, BAL, tissue, random urine, bone marrow, plasma, ocular swab in viral transport medium, vitreous fluid, pleural/pericardial fluid in sterile container or paraffin embedded tissue</p> <p>Volume 7-10 mL whole blood, 0.2 mL CSF, one nasopharyngeal/throat swab in viral transport medium, 1.0 mL BAL, 250 mg tissue (frozen), 0.5 mL urine, 2-5 mL bone marrow (EDTA or ADE), 0.5 mL plasma (EDTA), 1 ocular swab in VTM, 0.5 mL vitreous fluid in sterile container, 0.2 mL pleural/pericardial fluid in sterile container, or 2-5 50-micron paraffin embedded tissue sections in sterile container</p> <p>Storage Instructions Whole blood: maintain at room temperature or refrigerate. Ship overnight at room temperature or refrigerated. CSF, nasopharyngeal/throat swab, BAL, urine, pleural/pericardial fluid: refrigerate; ship overnight refrigerated. Tissue: freeze immediately on collection; ship overnight frozen on dry ice. Bone marrow (EDTA or ADE), paraffin-embedded tissue: room temperature; plasma: room temperature; ocular swab: refrigerate or freeze; vitreous fluid: refrigerate or freeze.</p>
Hemoglobin (Hgb) A_{1c}	001453	<p>Additional Information Factors such as duration of diabetes, adherence to therapy, and the age of the patient should also be considered in assessing the degree of blood glucose control. The following ranges may be used to interpret results:</p> <p>A_{1c}: degree of glucose control</p> <p>>8%: action suggested*</p> <p><7%: goal of diabetic therapy**</p> <p><6%: normal</p> <p>*High risk of developing long-term complications such as retinopathy, nephropathy, neuropathy, cardiopathy, etc.</p> <p>**Some danger of hypoglycemic reaction in type I diabetics. Some glucose intolerant individuals and "subclinical" diabetics may demonstrate A_{1c} levels in this area.</p>
Lysozyme, Serum	080713	<p>Limitations Test may lack specificity when applied to classification of acute leukemia (occasional false positive in cases of M1, M2, and M6).²</p> <p>Additional Information Serum lysozyme has been proposed as a parameter for monitoring disease progression/ regression in cases of proven sarcoidosis.¹ Revised FAB (French, American, British) criteria indicate that serum or urine lysozyme levels three times normal fulfill one of three criteria for presence of M4/M5 (acute myeloid leukemia with monocytic differentiation) vs M2 (acute myeloblastic leukemia with maturation). Lysozyme, an hydrolytic enzyme—a bacteriolytic glycosidase, when present in large amounts may appear as a far cathodal migrating ("cationic") band on serum or urine protein electrophoresis. Lysozyme has been found in all three human neutrophil granules (azurophil, specific, and gelatinase types).³ It is elevated in some cases of myelogenous, and most cases of myelomonocytic and monocytic leukemia. The elevation is proportional to the degree of monocytic differentiation and to tumor cell burden and if marked, can result in potassium wasting and hypokalemia.⁴ Lysozyme has been found within the granules of normal and leukemic eosinophils by immunoelectron microscopic study. Elevated serum lysozyme may not establish presence of monocytic differentiation in cases of acute myelogenous leukemia with eosinophilia.⁵ The level of serum lysozyme has been used as a predictor of CNS involvement in these leukemias.⁶ Serum lysozyme has been shown to be elevated in a number of conditions, including tuberculosis and sarcoidosis as well as leukemia.¹ Sensitivity for prediction of sarcoidosis was 79% in a recent study (cf that of serum angiotensin-converting enzyme (ACE) at 59% in the same study).¹ The serum lysozyme level increased with the number of organs involved. Serum lysozyme, however, is less specific for sarcoidosis than serum ACE. Using a turbidimetric method for measurement of serum lysozyme activity, there was evidence that such an assay was useful in differentiating infection from rejection in transplant recipients.⁷</p> <p>Footnotes</p> <ol style="list-style-type: none"> Tomita H, Sato S, Matsuda A, et al. Serum lysozyme levels and clinical features of sarcoidosis. <i>Lung</i>. 1999; 177(3):161-167. Sexton C, Buss D, Powell B, et al. Usefulness and limitations of serum and urine lysozyme levels in the classification of acute myeloid leukemia: An analysis of 208 cases. <i>Leuk Res</i>. 1996; 20(6):467-472. Lollike K, Kjeldsen L, Sengelov H, et al. Lysozyme in human neutrophils and plasma. A parameter of myelopoietic activity. <i>Leukemia</i>. 1995; 9(1):159-164. Hillman RS, Ault KA. The acute myeloid leukemias. <i>Hematology in Clinical Practice: A Guide to Diagnosis and Management</i>. 2nd ed. New York, NY: McGraw-Hill, Health Professions Division; 1998:274; chap 17. Moscinski LC, Kasnic G Jr, Saker A Jr. The significance of an elevated serum lysozyme value in acute myelogenous leukemia with eosinophilia. <i>Am J Clin Pathol</i>. 1992; 97(2):195-201. Peterson BA, Brunning RD, Bloomfield CD, et al. Central nervous system involvement in acute nonlymphocytic leukemia. A prospective study of adults in remission. <i>Am J Med</i>. 1987; 83(3):464-470. Jones JW, Su S, Jones MB, et al. Serum lysozyme activity can differentiate infection from rejection in organ transplant recipients. <i>J Surg Res</i>. 1999; 84(2):134-137. <p>References</p> <p>Wickenhauser C, Thiele J, Schmitz B, et al. Polycythemia vera megakaryocytes store and release lysozyme to a higher extent than megakaryocytes in secondary polycythemia (polyglobuly). <i>Leuk Res</i>. 1999; 23(3):299-306.</p> <p>Wolach B, Gavrieli R, Manor Y, et al. Leukocyte function in chronic myeloproliferative disorders. <i>Blood Cells Mol Dis</i>. 1998; 24(4):544-551.</p>
Lysozyme, Urine	081885	<p>Use Differential diagnosis of leukemia; present in association with some cases of myelogenous and most cases of monocytic leukemia.</p> <p>Limitations Test may lack specificity when applied to classification of acute leukemia (occasional false positive in cases of M1, M2, and M6).</p>
ZAP-70 in B-CLL	489000	<p>Volume <i>Peripheral blood:</i> 7 mL whole blood in green-stopper (sodium heparin) tube or one lavender-stopper (EDTA) tube; store and ship ambient. <i>Bone marrow:</i> 2-3 mL of marrow in green-stopper (sodium heparin) tube. Ship ambient.</p>

Note: For the most up-to-date test information, please consult the electronic *Directory of Services and Interpretive Guide* (e-DoS) at www.LabCorp.com. Questions regarding *LabHorizons* should be addressed to David Carrozza (carrozd@labcorp.com).

