



UW Medicine  
Department of Laboratory Medicine

## *Quantitative BCR/ABL*

[Laboratory Medicine Home Page](#)

### **For Clinical Information:**

Molecular Hematopathology  
Ph: (206) 598-6215  
Fax: (206) 598-0304

### **For Technical Information:**

Deena Hanke, MS, MT  
Lead Technologist  
(206) 598-6215

### **University of Washington**

### **Department of Laboratory Medicine**

*For additional ordering  
information and instructions,  
contact the Community Services  
office at (206) 598-6066 or  
(800) 713-5198*

We are pleased to announce, beginning July 1, 2005, our laboratory will be offering a quantitative assay for *BCR/ABL* RNA to monitor patients receiving therapy for chronic myeloid leukemia (CML) or Philadelphia chromosome positive acute lymphoblastic leukemia. In this assay, RNA is extracted from the patient's leukocytes and reverse-transcribed to produce cDNA. The cDNA is subjected to two separate PCR reactions, one for *BCR/ABL* and the other for glucose-6-phosphate dehydrogenase (*G6PDH*) message amplification. The reaction is monitored in real time using fluorescent detection, and the quantity of each RNA is determined based on the PCR cycle at which the fluorescent signal appears. The *BCR/ABL* reaction is positive if detectable numbers of CML cells are present (approximately one CML cell in 1,000-10,000 normal cells). The *G6PDH* reaction is used as a control for the quality of the RNA and also as a normalization reference RNA. The result is reported as a ratio (in percent) of the amount of *BCR/ABL* RNA to *G6PDH* RNA. By performing this assay on serial blood or bone marrow specimens, the quantitative results can be followed over time to determine whether the number of leukemic cells is increasing or decreasing. If the quantitative *BCR/ABL* test is negative, and if it is clinically indicated and requested, we can perform the qualitative *BCR/ABL* test, which we find to be slightly more sensitive than the quantitative test.

To get the best possible results for your patient, we need to extract high quality RNA from approximately 50 million white blood cells. The sample can be either peripheral blood or bone marrow.

The anticoagulant should be EDTA, as heparin can interfere with PCR reactions. The specimen should be no older than 24 hours at the time we start to process it. It is helpful if you can include the most recent white blood cell count on the requisition form. The quantitative *BCR/ABL* test is performed once a week on Thursday with results available by the end of the day on Friday.

Specimen: 20 mL blood (EDTA/purple top) or 1-2 mL bone marrow (EDTA). Specimen must be labeled with two identifiers, ie name, date of birth, social security number, or patient ID number.

Packaging: Send specimen in a labeled, leak-proof tube. Wrap the tube in absorbent material and place in a crush-proof container. Complete and send a UW Hematopathology requisition in a separate plastic bag in the shipping container.

Shipping: Send entire sample, refrigerate (do not freeze). The laboratory must receive the specimen within 24 hours.

Ship to: Hematopathology Laboratory UW Medical Center  
Room NW 225  
1959 NE Pacific St.  
Seattle, WA 98195

CPT codes: 83891, 84311, 83902, 83901

Test Order Code: CMLQ