

UCLA DIAGNOSTIC MOLECULAR PATHOLOGY LABORATORY
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T-Cell Gene Rearrangement

↑CPT

PCR: 83890; 84311; 83907; 83898 (x3); 83909 (x3); 83912

Southern blot: 83892 (x3); 83894 (x3); 83896 (x3); 83897 (x3); 83912

↑Synonyms

T-Lymphocyte Receptor (TCR) Gene Rearrangement

↑Test Includes

Detection monoclonal T-cell population in T-cell neoplasms

↑Laboratory

Molecular Pathology

↑Availability

Monday-Friday, 0700-1700

↑Turnaround Time

3-14 days (PCR); 7-21 days (Southern blot)

↑Specimen

Whole blood, bone marrow or tissue

↑Volume

10 mL blood; 4 mL bone marrow; 0.2 g or more of tissue

↑ Container

Blood and bone marrow should be collected in a lavender top (EDTA) tube. Fresh tissue must be shipped on dry ice within 48 hours or in saline and brought to the Laboratory immediately.

↑ Collection

Tissue must be carefully cut from the surgically removed tumor and contain a representative sampling of at least 5% to 10% of tumor cells from the involved area.

↑ Storage Instructions

Tissue can be stored in a -20°C or -70°C freezer until shipped. Blood and bone marrow should be refrigerated, never frozen.

↑ Causes for Rejection

Frozen tissue samples thawed during transit cannot be used for DNA analysis; specimens inadequately identified

↑ Reference Range

No clonality observed

↑ Use

TCR gene rearrangement is a useful marker of the clonality of T-lymphoid neoplasms

↑ Limitations

Rearrangement will not be detected if the submitted tissue is not from the involved tumor. Tissue samples that are too small or fixed in formalin will not yield enough DNA to do an accurate Southern blot analysis. Some rearrangement may not be detectable due to the nature of the breakpoints. Some B-cell malignancies will show T-cell receptor gene rearrangements.

↑ Methodology

Polymerase Chain Reaction (PCR) and Southern Blot with a probe that hybridizes to both C β 1 and C β 2 gene segments within the T-cell receptor beta locus

↑Additional Information

PCR test will be performed initially. If PCR result is negative and the amount of DNA is sufficient for Southern blot, the Southern blot will be performed.
