TRG Gene Rearrangement

*TCR Gamma gene rearrangements flanking the hypervariable antigen-binding region 3 CDR3*

**Indications for Molecular Testing**
- Suspected clonal T lymphoid proliferation or neoplasm

**Testing Methodology**
PCR of the TRG gene detects both normal, polyclonal rearranged fragments and abnormal, clonal rearrangements. Two multiplex primer mixes target conserved regions within the variable (V) and the joining (J) regions that flank the hypervariable antigen-binding region 3 (CDR3). The PCR master mixes, which span the genomic TRG region, are used in separate reactions to distinguish the clonal rearrangement as different in size and prevalence from the normal, polyclonal DNA fragments and to minimize false negatives.

**Interpretation of DNA analysis**
Leukemia and lymphoma of T lymphoid lineage have clonal reproduction of the rearranged configuration of original tumor cell in contrast to normal, functional cells of T lineage that demonstrate patterns of diversity of antigen specificity and DNA rearrangement. Diagnostic for leukemias and lymphomas derived from T lymphoid hematopoietic cell precursors. Specific DNA rearrangements identified at diagnosis constitutes a tumor-specific marker that may be used to identify minimal residual disease post-treatment. When no distinct, abnormal-size peak can be distinguished, the specimen is interpreted as lacking in clonal TCRG gene rearrangement below the minimum level of detection (10%). Polyclonal or oligoclonal proliferation may be present as multiple peaks. A flat profile may be observed when no amplification has occurred (compare to control gene pattern) OR a non-T lymphoid cell population is analyzed.

**Specimen Requirements**
- **Frozen Tissue**—10 mm³ of fresh frozen tissue in sterile, plastic container. Forward frozen tissue on dry ice.
- **Separated Cell Pellets**—1 x 10⁶ nucleated cells. Freeze cells in a sterile plastic container. Forward promptly on dry ice.
- **Peripheral Blood**—1 lavender-top (EDTA) tube. Invert several times to mix blood.
- **Bone Marrow**—Place 1-2 mL of anticoagulated bone marrow in a lavender-top (EDTA) tube. Invert several times to mix bone marrow.
- **Formalin-Fixed, Paraffin-Embedded (FFPE) Tissue**—Twenty 10 micron sections of FFPE tissue in a sterile, microcentrifuge tube.

Do not freeze blood, bone marrow, or FFPE, forward promptly at ambient temperature to the following address:

Molecular Diagnostic Laboratory  
Barnes-Jewish Hospital, Institute of Health  
Mail Stop 90-28-344  
425 South Euclid Avenue, Room 5970  
St. Louis, MO 63110

**Current Pricing**
Available from BJH Laboratory Customer Service at 314-362-1470
CPT code: 81342


InVivoScribe Technologies: TCRG Gene Clonality Assay, 1207002Xv7.40