TCR Gamma Gene Clonality Detection by PCR and Capillary Electrophoresis

Clinical Indication and Relevance
- Aids in the diagnosis of T-cell malignancies
- Detection of disease or minimal residual disease monitoring

Methodology
DNA is isolated and amplified by PCR using BIOMED-2 primers targeting the Vγ1-8, Vγ9, Vγ10, Vγ11 and Jγ1.1/2.1, Jγ1.3/2.3 sequences. The gene rearrangements are detected by analyzing the PCR products by capillary gel electrophoresis.

Sensitivity
The assay sensitivity for detection of clonal T-cell populations is 5% of lymphocytes.

Turn-around Time
Five to seven working days

Sample Requirements
Collect
- Peripheral blood (PB): 3-5 mL, in purple top (sodium EDTA) tube; yellow top (ACD) tube acceptable.
- Bone marrow aspirate (BM): 1-3 mL, drawn into a syringe containing anticoagulant and then delivered in purple top tube (EDTA).
- Fresh or frozen tissue: fresh tissue should be obtained in a sterile manner, and a minimum 3 mm³ of tissue is required. Put fresh tissues in culture medium or snap freeze (see transport section below).
- Formalin-fixed paraffin-embedded (FFPE) tissue blocks: send FFPE tissue blocks to the lab, or contact lab for instructions about cutting sections for molecular studies.

Transport
- PB or BM samples should be delivered immediately to the lab at 2-8°C (wet ice or cold packs). PB and BM specimens should not be frozen.
- Fresh tissue samples should be delivered at room temperature in RPMI culture medium to the lab within 3 hours of collection, or snap frozen in liquid nitrogen at -70°C and packed in dry ice for delivery. Please do not allow frozen tissues to thaw.
- Formalin-fixed paraffin embedded (FFPE) tissue blocks can be delivered at room temperature.

Stability
PB or BM samples: ambient - 1 hour; refrigerated - 48 hours.

Unacceptable Samples
- Serum or plasma; frozen PB or BM; clotted blood; severely hemolyzed samples
- Tissue samples fixed in Zenker's, B5, or Bouin's fixatives
- Bone marrow biopsies decalcified in formic acid
CPT Code(s)
81342: TRG® (T cell antigen receptor, gamma) gene rearrangement analysis, evaluation to detect abnormal clonal population(s)
G0452-26: Molecular pathology procedure; physician interpretation and report

References