T-Cell Clonality

Indication for Ordering
Diagnosis of T-cell lymphoproliferative disorders

Test Description
- DNA extracted from whole blood, bone marrow, formalin-fixed, paraffin-embedded (FFPE) tissue, or fresh/frozen tissue
- Polymerase chain reaction (PCR) amplification of TCRG gene rearrangements
- PCR/capillary electrophoresis

Tests to Consider
Primary test
T-Cell Clonality Screening by PCR 0055567
- Aid in diagnosis of T-cell lymphoproliferative disorders

Related tests
T-Cell Clonality by Flow Cytometry Analysis of TCR V-Beta 0093199
- Aid in diagnosis of T-cell lymphoproliferative disorders

Leukemia/Lymphoma Phenotyping Evaluation by Flow Cytometry 3001780
- Aid in evaluation of hematopoietic neoplasms (ie, leukemia, lymphoma)
- Monitor therapy in patients with established diagnosis of hematopoietic neoplasms

Disease Overview
Incidence
T-cell lymphomas account for ~15% of all non-Hodgkin’s lymphomas (Blood, 2016)

Diagnostic issues
- T-cell lymphoproliferative disorders may be a diagnostic challenge
- T-cell clonality testing aids in distinguishing between benign and reactive T-cell populations

Genetics
Gene – TCRG

Structure/function
- TCRG gene rearrangements occur in early T-cell lymphoid differentiation
- Polyclonal rearrangements are characteristic of either benign or reactive disease
- Monoclonal rearrangements are characteristic of T-cell lymphoproliferative disorders

Test Interpretation
Analytical sensitivity – one clonal cell in a background of 8 polyclonal cells, or 12.5%.

Results
- Detected – there is a detectable monoclonal T-cell receptor gamma gene rearrangement by PCR analysis
- Not detected – there is no evidence of a monoclonal T-cell population by PCR analysis

Limitations
Clonal TCRG gene rearrangements below the limit of detection will not be reported

References