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

- Aids in diagnosis of T-cell lymphoproliferative disorders

Related Test

Leukemia/Lymphoma Phenotyping Evaluation by Flow Cytometry 3001780

- Aids in evaluation of hematopoietic neoplasms (ie, leukemia, lymphoma)
- Monitors therapy in patients with established diagnosis of hematopoietic neoplasms

Disease Overview

Incidence

T-cell lymphomas account for ~15% of all non-Hodgkin's lymphomas (Swerdlow, 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 eight 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

Swerdlow SH, Campo E, Pileri SA, et al. The 2016 revision of the World Health Organization classification of lymphoid neoplasms. Blood. 2016;127(20):2375-2390. PubMed