T Cell Beta Gene Rearrangement (TCRB)

This assay detects T cell neoplasms affecting the T cell receptor beta chain (TCRB) locus in genomic DNA. T cell lymphomas often pose a diagnostic challenge to pathologists, especially during early stages of disease. PCR-based T Cell Gene Rearrangement assay is useful for identifying clonal T cell populations highly suggestive of T cell malignancy.

Testing Method and Background

This test utilizes polymerase chain reaction (PCR) to detect the presence of a monoclonal population of T lymphocytes. Genomic DNA is amplified using three master mixes that target multiple V and J exon regions within the T cell receptor beta chain locus. PCR products are analyzed by differential fluorescence detection using capillary electrophoresis. Clonality is indicated if at least one of the master mixes generates a reproducible clonal band.

T cell lymphomas are clonal expansions of neoplastic T lymphocytes, each bearing an identical rearranged T cell receptor (TCR) gene. In contrast, most non-neoplastic lymphoproliferations are polyclonal or oligoclonal in nature. T cell receptor gene rearrangement provides a convenient genetic marker for the study of clonality in T cell neoplasms. Although positive results are highly suggestive of malignancy, this assay is designed for Research Use Only, and if used in clinical setting, should only be used in support of diagnosis. Positive and negative results should be interpreted in the context of all clinical information and laboratory test results.

Highlights of T Cell Beta Gene Rearrangement (TCRB)

Targeted Region

T Cell Receptor Beta Chain Locus: V + J Exons

- **Provides a convenient genetic marker for the study of clonality in T cell neoplasms**
  TCRB PCR-based testing is useful in identifying clonal T cell populations, monitoring disease recurrence and the detection of minimal residuel disease.

Ordering Information

Get started (non-HFHS): Print a Molecular Hematologic Testing requisition form online at www.HenryFord.com/HFCPD

Get started (HFHS): Order through Epic using test "TCRB" (MOL80391 Blood, MOL80392 Bone Marrow)

Specimen requirements:

- Peripheral Blood - 1-3ml in lavender top tube (EDTA) **Specimen stability: Ambient - 72 hours; Refrigerated - 1 week**
- Bone Marrow - 1-3ml, anticoagulated with either heparin or EDTA, **Specimen stability: Refrigerated - 1 week** (ship cold)
- Formalin-fixed, paraffin-embedded tissue, preferably no older than 2 years
- 5-6 tissue sections at 5-6 micron thickness (please include H&E slide and a copy of pathology report)
- Cytology slides (cell block with 500+ tumor cells, submit block or 5-6 tissue sections at 5-10 micron thickness depending on cellularity)
- Extracted DNA - from a CLIA-certified Laboratory

Cause for Rejection: Clotted, hemolyzed, or frozen specimens, improper anticoagulant, tubes not labeled with dual patient identification, non-dedicated tubes.

TAT: 5-7 business days (after Prior Authorization obtained)

Mail test material to:
Henry Ford Center for Precision Diagnostics
Pathology and Laboratory Medicine
Clinic Building, K6, Core Lab, E-655
2799 W. Grand Blvd., Detroit, MI 48202

CPT Codes: 81340, G0452

Contact us: Client Services, Account and Billing Set-up, and connect with a Molecular Pathologist at (313) 916-4DNA (4362)

For more information on Comprehensive Molecular Services, visit our website
www.HenryFord.com/HFCPD

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