
The previously announced effective date of May 5, 2022 has been changed to June 28, 2022.

T-Cell Receptor V-Beta Repertoire Analysis, Spectratyping, Blood

Test ID: TCRB

Useful for:

Assessment of T-cell receptor diversity in various clinical contexts including inborn errors of immunity (formerly primary immunodeficiencies), monitoring immune reconstitution post-hematopoietic stem cell transplantation, and temporal assessment of repertoire changes in autoimmune diseases and viral infections

Methods:

Molecular TCR Vb-CDR3 Fragment Length Analysis

Reference Values:

Reference values will be provided in the patient report.

Specimen Requirements:

For serial monitoring, it is recommended to perform specimen collection at the same time of day, if possible.

Supplies:	Ambient Shipping Box-Critical Specimens Only (T668)
Specimen Type:	Blood
Container/Tube:	Lavender top (EDTA)
Specimen Volume:	Adults: 10 mL Pediatrics: >1 year: 3 mL, < or =1 year: 1 mL
Collection Instructions:	Send whole blood specimen in original tube. Do not aliquot.
Minimum Volume:	Adults: 5 mL Pediatrics: >1 year old: 3 mL, <1 year old: 1 mL

Shipping Instructions:

- **Specimens must be received in the laboratory on weekdays and by 4 p.m. on Friday.** Collect and package specimen as close to shipping time as possible.
- It is recommended that specimens arrive within 24 hours of collection.
- Samples arriving over the weekend or on observed holidays may be canceled.

Note:

- Ordering physician's name and phone number are required.
- [TCR V beta Spectratyping Assay Patient Information](#) (T719) is required.
- Mayo Clinic Laboratory Director/Consultant approval is required prior to ordering this test in patients greater than 40 years of age.

Specimen Stability Information:

Specimen Type	Temperature	Time	Special Container
Whole Blood EDTA	Ambient	48 hours	Purple or Pink EDTA

Cautions:

This is essentially a qualitative/semiquantitative assay, with the diversity ratio (calculated as described in method description), and visual analysis of the spectratype. This assay does not quantify in any way the amount of transcript for each T-cell receptor. This assay is **not** a deep sequencing assay and, therefore, does not provide the granularity of information offered by deep sequencing.

The assay is not validated for determining clonality in the context of hematologic malignancies.

This assay is intended to generate a spectratype (immunoscope) of the T-cell receptor V beta repertoire and to draw inferences on repertoire diversity based on the number and distribution of peaks across the 24 TCR V beta families.

If the CD3+ T-cell count is less than 70 cells/mcL, at least 2 to 3 mL blood may be needed to obtain enough cells to perform the test. For this reason, if only 1 mL blood is provided, this test should not be ordered in patients with completely absent or less than 70 T cells/mcL blood due to underlying disease or treatment, as there may be inadequate sample to amplify TCR V beta families in contexts of such profound T-cell lymphopenia.

This test should not be ordered in patients over the age of 40 years without prior discussion with laboratory directors on clinical utility and interpretation in specific clinical contexts.

CPT Code:

81340-TRG (T cell antigen receptor, beta) (eg, leukemia and lymphoma), gene rearrangement analysis to detect abnormal clonal population(s); using amplification methodology (eg, polymerase chain reaction)

Day(s) Performed: Varies

Report Available: 20 to 24 days

Questions

Contact Michelle Rath, Laboratory Technologist Resource Coordinator at 800-533-1710.