MAYO CLINIC LABORATORIES

Test Definition: TLPDF

T-Cell Lymphoma, Diagnostic FISH, Varies

Overview

Useful For

Detecting, at diagnosis, common chromosome abnormalities associated with specific T-cell lymphoma subtypes using a laboratory-designated probe set algorithm

Reflex Tests

Test Id	Reporting Name	Available Separately	Always Performed
TLPDB	Probe, Each Additional (TLPDF)	No, (Bill Only)	No

Testing Algorithm

This test includes a charge for the probe application, analysis, and professional interpretation of results for 3 probe sets (6 individual fluorescence in situ hybridization [FISH] probes). Additional charges will be incurred for all reflex or additional probe sets performed.

The initial (diagnostic) T-cell lymphoma FISH panel includes testing for the following abnormalities using the FISH probes listed:
14q32.1 rearrangement, *TCL1A* break-apart
14q11.2 rearrangement, *TRAD* break-apart
i(7q), D7Z1/D7S486
+8, D8Z2/MYC

TCL1A and TRAD break-apart probe sets will be performed simultaneously.

When this test and flow cytometry testing for leukemia/lymphoma are ordered concurrently, the flow cytometry result will be utilized to determine if sufficient clonal T-cells are available for FISH testing. If the result does not identify a sufficient clonal T-cell population, this FISH test order will be canceled, and no charges will be incurred.

Appropriate ancillary probes may be performed at consultant discretion to render comprehensive assessment. Any additional probes will have the results included within the final report and will be performed at an additional charge.

For more information Bone Marrow Staging for Known or Suspected Malignant Lymphoma Algorithm.

Special Instructions

- Bone Marrow Staging for Known or Suspected Malignant Lymphoma Algorithm

Method Name

Fluorescence In Situ Hybridization (FISH)

NY State Available

Yes

Specimen

Specimen Type
Varies

Ordering Guidance
This test should only be ordered if the sample is known to have a sufficient clonal T-cell population. If a flow cytometry result is available and does not identify a sufficient clonal T-cell population, this test will be canceled and no charges will be incurred.

This test is intended for instances when a non-specific T-cell lymphoma fluorescence in situ hybridization (FISH) panel is needed. This test **should NOT be used** to screen for residual T-cell lymphoma.

If limited T-cell lymphoma FISH probes are preferred, order TLPMF / T-Cell Lymphoma, Specified FISH, Varies, and request specific probes for targeted abnormalities.

This assay detects chromosome abnormalities observed in blood or bone marrow samples of patients with T-cell lymphoma. If a paraffin-embedded tissue specimen is submitted, the test will be canceled and TLYM / T-Cell Lymphoma, FISH, Tissue will be added and performed as the appropriate test.

For patients with T-cell acute lymphoblastic leukemia/lymphoma (T-ALL/LBL), order either TALAF / T-Cell Acute Lymphoblastic Leukemia/Lymphoma (ALL), FISH, Adult, Varies or TALPF / T-Cell Acute Lymphoblastic Leukemia/Lymphoma (ALL), FISH, Pediatric, Varies, depending on the age of the patient.

For testing paraffin-embedded tissue samples from patients with T-cell lymphoblastic Lymphoma, see TLBLF / T-Cell Lymphoblastic Leukemia/Lymphoma, FISH, Tissue.

Shipping Instructions
Advise Express Mail or equivalent if not on courier service.

Necessary Information
1. A reason for testing must be provided. If this information is not provided, an appropriate indication for testing may be entered by Mayo Clinic Laboratories.
2. A flow cytometry and/or a bone marrow pathology report should be submitted with each specimen. The laboratory will not reject testing if this information is not provided, but appropriate testing and interpretation may be compromised or delayed.

Specimen Required
Submit only 1 of the following specimens:

Preferred
Specimen Type: Bone marrow

Container/Tube:
Preferred: Yellow top (ACD)
Acceptable: Green top (heparin) or lavender top (EDTA)
Specimen Volume: 2-3 mL
Collection Instructions:
1. It is preferable to send the first aspirate from the bone marrow collection.
2. Invert several times to mix bone marrow.
3. Send bone marrow in original tube. **Do not aliquot.**

Acceptable
Specimen Type: Whole blood
Container/Tube:
Preferred: Yellow top (ACD)
Acceptable: Green top (heparin) or lavender top (EDTA)
Specimen Volume: 6 mL
Collection Instructions:
1. Invert several times to mix blood.
2. Send whole blood specimen in original tube. **Do not aliquot.**

Forms
If not ordering electronically, complete, print, and send a Hematopathology/Cytogenetics Test Request (T726) with the specimen.

Specimen Minimum Volume
Bone marrow: 1 mL; Whole blood: 2 mL

Reject Due To
All specimens will be evaluated at Mayo Clinic Laboratories for test suitability.

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Varies	Ambient (preferred)		
	Refrigerated		

Clinical & Interpretive

Clinical Information
T-cell malignancies account for approximately 10% of all non-Hodgkin lymphomas. There are subtypes of T-cell malignancies with diagnostic and prognostic genetic abnormalities. Fluorescence in situ hybridization (FISH) is available for specific abnormalities in the following T-cell lymphoma subtypes (see Table).

Table. **Common Chromosome Abnormalities in T-cell Lymphomas**

Lymphoma type	Chromosome abnormality	FISH probe
T-cell prolymphocytic leukemia	inv(14)(q11q32)/	5'/3'TRAD

	(14;14)(q11;q32)	5'/3'TCLA1
Hepatosplenic T-cell lymphoma	Isochromosome 7q	D7Z1/ D7S486
	Trisomy 8	D8Z2/MYC

Reference Values
An interpretive report will be provided.

Interpretation
A neoplastic clone is detected when the percent of cells with an abnormality exceeds the normal reference range for any given probe set.

Detection of an abnormal clone supports a diagnosis of T-cell lymphoma. The specific abnormality detected may help to determine a specific T-cell lymphoma subtype.

The absence of an abnormal clone does not rule out the presence of lymphoma or another neoplastic disorder.

Cautions
This test is not approved by the U.S. Food and Drug Administration, and it is best used as an adjunct to existing clinical and pathologic information.

Bone marrow is the preferred sample type for this fluorescence in situ hybridization test. If bone marrow is not available, a blood specimen may be used if there are neoplastic cells in the blood specimen (as verified by a hematopathologist).

If no FISH signals are observed post-hybridization, the case will be released indicating a lack of FISH results.

Clinical Reference
1. Swerdlow SH, Campo E, Harris NL, et al, eds. WHO Classification of Tumours of Haematopoietic and Lymphoid Tissues. 4th ed. Volume 2. IARC Press; 2017
2. Gesk S, Martin-Subero JI, Harder L, et al. Molecular cytogenetic detection of chromosomal breakpoints in T-cell receptor gene loci. Leukemia. 2003;17(4):738-745. doi:10.1038/sj.leu.2402884
3. Chin M, Mugishima H, Takamura M, et al. Hemophagocytic syndrome and hepatosplenic gammadelta T-cell lymphoma with isochromosome 7q and 8 trisomy. J Pediatr Hematol Oncol. 2004;26(6):375-378. doi:10.1097/00043426-200406000-00008

Performance

Method Description
This test is performed using commercially available and laboratory-developed probes. Rearrangements involving *TCL1A* and *TRAD* are detected using a dual-color break-apart strategy probe. Trisomy of chromosome 8 and isochromosome 7q are detected using enumeration strategy probes. For each probe set, 100 interphase nuclei are scored. All results are expressed as the percent abnormal nuclei.(Unpublished Mayo method)

PDF Report
No

Day(s) Performed
Monday through Friday

Report Available
7 to 10 days

Specimen Retention Time
4 weeks

Performing Laboratory Location
Mayo Clinic Laboratories - Rochester Main Campus

Fees & Codes

Fees
- Authorized users can sign in to Test Prices for detailed fee information.
- Clients without access to Test Prices can contact Customer Service 24 hours a day, seven days a week.
- Prospective clients should contact their account representative. For assistance, contact Customer Service.

Test Classification
This test was developed and its performance characteristics determined by Mayo Clinic in a manner consistent with CLIA requirements. It has not been cleared or approved by the US Food and Drug Administration.

CPT Code Information
88271 x6, 88275 x3, 88291 x1- FISH Probe, Analysis, Interpretation; 3 probe set
88271 x2, 88275 x1 - FISH Probe, Analysis; each additional probe set (if appropriate)

LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
TLPDF	T-cell Lymphoma B/BM, Diag FISH	101682-3

Result ID	Test Result Name	Result LOINC® Value
614337	Result Summary	50397-9
614338	Interpretation	69965-2
614339	Result Table	93356-4
614340	Result	62356-1
GC138	Reason for Referral	42349-1
GC139	Specimen	31208-2
614341	Source	31208-2
614342	Method	85069-3

614343	Additional Information	48767-8
614344	Disclaimer	62364-5
614345	Released By	18771-6