MAYO CLINIC LABORATORIES

Test Definition: TLPMF

T-Cell Lymphoma, Specified FISH, Varies

Overview

Useful For

Detecting, at diagnosis, common chromosome abnormalities associated with specific T-cell lymphoma subtypes using **client** specified probes

Reflex Tests

Test Id	Reporting Name	Available Separately	Always Performed
TLPMB	Probe, Each Additional (TLPMF)	No	No

Testing Algorithm

This test includes a charge for the probe application, analysis, and professional interpretation of results for one probe set (2 individual fluorescence in situ hybridization [FISH] probes). Additional charges will be incurred for all additional probe sets performed.

When specified, any of the following probes will be performed:
t(14q32.1;var) or *TCL1A* rearrangement, request probe TCL1A break-apart
t(14q11.2;var) or *TRAD* rearrangement, request probe TRAD break-apart
i(7q) or isochromosome 7q, request probe D7Z1/D7S486
+8 or trisomy 8, request probe D8Z2/MYC
TCL1A and TRAD break-apart probe sets will be performed simultaneously and cannot be ordered independently.

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 see 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.

This test is intended for instances when targeted T-cell lymphoma fluorescence in situ hybridization (FISH) probes are needed based on a specific abnormality or abnormalities identified in the diagnostic sample. **If targeted FISH probes are not included with this test order, test processing may be delayed and the test may be canceled by the laboratory** and automatically reordered by the laboratory as TLPDF / T-Cell Lymphoma, Diagnostic FISH, Varies.

If the entire T-cell lymphoma panel is preferred, order TLPDF / T-Cell Lymphoma, Diagnostic FISH, Varies.

This test **should NOT be used** to screen for residual T-cell lymphoma.

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, 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 list of probes requested for analysis is required. Probes available for this test are listed in the Testing Algorithm section.
2. 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.
3. 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 lymphoma 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)/ (14;14)(q11;q32)	5'/3' TRAD 5'/3' TCL1A
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 US Food and Drug Administration and 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 S, Campo E, Harris NL, et al, eds. WHO Classification of Tumours of Haematopoietic and Lymphoid Tissues. 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
3. Chin M, Mugishima H, Takamura M, et al. Hemophagocytic syndrome and hepatosplenic (gamma)(delta) T-cell lymphoma with isochromosome 7q and 8 trisomy. J Pediatr Hematol Oncol. 2004;26(6):375-378

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
88271x2, 88275 x1, 88291x1- FISH Probe, Analysis, Interpretation; 1 probe set
88271x2, 88275 x1 - FISH Probe, Analysis; each additional probe set (if appropriate)

LOINC® Information

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

Result ID	Test Result Name	Result LOINC® Value
614348	Result Summary	50397-9
614349	Interpretation	69965-2
614350	Result Table	93356-4
614351	Result	62356-1
GC141	Reason for Referral	42349-1
GC142	Probes Requested	78040-3
GC143	Specimen	31208-2
614352	Source	31208-2
614353	Method	85069-3
614354	Additional Information	48767-8
614355	Disclaimer	62364-5
614356	Released By	18771-6