

Overview

Useful For

Detecting a neoplastic clone associated with the common chromosome abnormalities seen in patients with various T-cell lymphomas

Tracking known chromosome abnormalities and response to therapy in patients with T-cell lymphoma

Reflex Tests

Test ID	Reporting Name	Available Separately	Always Performed
_I099	Interphases, 25-99	No, (Bill Only)	No
_I300	Interphases, >=100	No, (Bill Only)	No
_IL25	Interphases,	No, (Bill Only)	No
_PADD	Probe, +1	No, (Bill Only)	No
_PB02	Probe, +2	No, (Bill Only)	No
_PB03	Probe, +3	No, (Bill Only)	No
_PBCT	Probe, +2	No, (Bill Only)	No

Testing Algorithm

This test includes a charge for application of the first probe set (2 FISH probes) and professional interpretation of results. Additional charges will be incurred for all reflex probes performed. Analysis charges will be incurred based on the number of cells analyzed per probe set. If no cells are available for analysis, no analysis charges will be incurred.

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.

If FISH testing proceeds, probes will be performed based on the lymphoma subtype suspected/identified utilizing the table located in Clinical Information.

If the patient is being tracked for known abnormalities, indicate which probes should be used.

The following probe sets are available within the T-cell lymphoma FISH profile:

14q32.1 rearrangement, *TCL1A*

/i(7q)/ -7/7q-, D7S486/D7Z1

+8, D8Z2/*MYC*

If T-cell prolymphocytic leukemia/lymphoma (T-PLL) is indicated, *TCL1A* rearrangement is performed, with reflex to the *TRAD* FISH probe if *TCL1A* is negative,

See [Bone Marrow Staging for Known or Suspected Malignant Lymphoma Algorithm](#) in Special Instructions.

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

Advisory Information

This assay detects chromosome abnormalities observed in the blood or bone marrow of patients with T-cell lymphoma.

-For testing paraffin-embedded tissue samples from patients with T-cell lymphoma, see TLYM / T-Cell Lymphoma, FISH, Tissue.

-For patients with T-cell acute lymphoblastic leukemia/lymphoma, order TALLF / T-Cell Acute Lymphoblastic Leukemia [T-ALL], FISH, Varies.

Shipping Instructions

Advise Express Mail or equivalent if not on courier service.

Necessary Information

1. Provide a reason for referral 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.

2. A pathology or flow cytometry report may be requested by the Genomics Laboratory to optimize testing and aid in interpretation of results.

Specimen Required

Submit only 1 of the following specimens:

Preferred:

Specimen Type: Bone marrow

Container/Tube: Green top (sodium heparin)

Specimen Volume: 1-2 mL

Collection Instructions: Invert several times to mix bone marrow.

Acceptable:

Specimen Type: Blood

Container/Tube: Green top (sodium heparin)

Specimen Volume: 7-10 mL

Collection Instructions: Invert several times to mix blood.

Forms

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

Specimen Minimum Volume

Blood: 2 mL

Bone Marrow: 1 mL

Reject Due To

No specimen should be rejected.

Specimen Stability Information

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

Clinical and Interpretive

Clinical Information

T-cell neoplasms are relatively uncommon, accounting for approximately 12% of all non-Hodgkin lymphomas. There are several subtypes of T-cell neoplasms: T-cell acute lymphoblastic leukemia (T-ALL), T-cell prolymphocytic leukemia (T-PLL), T-cell large granular lymphocytic leukemia (T-LGL), anaplastic large cell lymphoma (ALCL), peripheral T-cell lymphoma, and various other cutaneous, nodal, and extranodal lymphoma subtypes.

There are a few common chromosome abnormalities associated with specific T-cell lymphoma subtypes evaluated by this FISH test, as follows:

Common Chromosome Abnormalities in T-cell Lymphomas		
Lymphoma Subtype	Chromosome Abnormality	FISH Probe
T-cell prolymphocytic leukemia/lymphoma (T-PLL)	inv(14)(q11q32) and t(14;14)(q11;q32)	5'/3' <i>TCL1A</i>
	Reflex: 14q11.2 rearrangement	5'/3' <i>TRAD</i>
Hepatosplenic T-cell lymphoma	Isochromosome 7q	D7S486/D7Z1
	Trisomy 8	D8Z2/ <i>MYC</i>

These probes have diagnostic relevance and can also be used to track response to therapy.

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.](#)

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

The absence of an abnormal clone does not rule out the presence of 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 FISH test. If bone marrow is not available, a blood specimen may be used if there are malignant cells in the blood specimen (as verified by hematopathology).

Supportive Data

Each probe was independently tested on a set of normal bone marrow control samples, and when available bone marrow samples from patients diagnosed with a T-cell lymphoma. Normal cutoffs were calculated based on the results from 25 normal specimens. Each probe set was evaluated to confirm the probe set detected the abnormality it was designed to detect.

Clinical Reference

1. WHO Classification of Tumours of Haematopoietic and Lymphoid Tissues. Edited by SH Swerdlow, et al. IARC, Lyon 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;17:738-745
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 *TCL1* and *TRAD* are detected using a dual-color break-apart (BAP) strategy probe. Trisomy of chromosome 8 and isochromosome 7q are detected using enumeration strategy probes. For each probe set, 200 interphase nuclei are scored and results are expressed as the percent abnormal nuclei. (Unpublished Mayo method)

PDF Report

No

Day(s) and Time(s) Test Performed

Specimens processed Monday through Sunday.

Results reported Monday through Friday, 8 a.m.-5 p.m.

Analytic Time

7 days

Maximum Laboratory Time

10 days

Specimen Retention Time

4 weeks

Performing Laboratory Location

Rochester

Fees and 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 Regional Manager. For assistance, contact [Customer Service](#).

Test Classification

This test was developed using an analyte specific reagent. Its performance characteristics were determined by Mayo Clinic in a manner consistent with CLIA requirements. This test has not been cleared or approved by the U.S. Food and Drug Administration.

CPT Code Information

88271x2, 88291-DNA probe, each (first probe set), Interpretation and report

88271x2-DNA probe, each; each additional probe set (if appropriate)

88271x1-DNA probe, each; coverage for sets containing 3 probes (if appropriate)

88271x2-DNA probe, each; coverage for sets containing 4 probes (if appropriate)

88271x3-DNA probe, each; coverage for sets containing 5 probes (if appropriate)

88274 w/modifier 52-Interphase in situ hybridization, <25 cells, each probe set (if appropriate)

88274-Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate)

88275-Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate)

LOINC® Information

Test ID	Test Order Name	Order LOINC Value
TLPF	T-cell Lymphoma, FISH, B/BM	In Process



Result ID	Test Result Name	Result LOINC Value
52009	Result Summary	50397-9
52011	Interpretation	69965-2
52010	Result Table	93356-4
54566	Result	62356-1
CG719	Reason for Referral	42349-1
CG720	Specimen	31208-2
52012	Source	31208-2
52013	Method	49549-9
55118	Additional Information	48767-8
53849	Disclaimer	62364-5
52014	Released By	18771-6