Test Definition: SZMON

Sezary Monitoring Flow Cytometry, B

Overview

Useful For

Monitoring response to therapy in patients with previously diagnosed Sezary syndrome or mycosis fungoides

Reflex Tests

Test ID	Reporting Name	Available Separately	Always Performed
FCIMS	Flow Cytometry Interp, 9-15 Markers	No	No
FCINS	Flow Cytometry Interp,16 or greater	No	No
VBETA	TCR V-BETA	No	No

Additional Tests

Test ID	Reporting Name	Available Separately	Always Performed
FIRST	Flow Cytometry, Cell Surface, First	No	Yes
ADD1	Flow Cytometry, Cell Surface, Addl	No	Yes

Testing Algorithm

Sezary panel is ordered in cases with previously diagnosed Sezary syndrome or cutaneous T-cell lymphoma (CTCL) with peripheral blood involvement. For cases without a previously confirmed diagnosis or previously performed immunophenotyping at our laboratory, the ordered test will be changed to SZDIA / Sezary Diagnostic Flow Cytometry, Blood, which includes a triage panel to exclude a B-cell lymphoproliferative disorder and a Sezary panel. If there is a significant phenotypically distinct T-cell population detected, a V-beta panel for proof of clonality may be ordered by the signing pathologist.

The panel is charged based on number of markers tested (FIRST for first marker, ADD1 for each additional marker). In addition, reflex testing may occur to fully characterize a disease state or clarify any abnormalities from the screening test. Reflex tests will be performed at an additional charge for each marker tested (ADD1 if applicable).

Method Name

Immunophenotyping

NY State Available

Yes

Specimen

Specimen Type

Whole blood

Advisory Information

This test is for monitoring response to therapy in patients who have been diagnosed with Sezary syndrome or mycosis fungoides. For patients who do not have a diagnosis of Sezary syndrome, SZDIA / Sezary Diagnostic Flow Cytometry, Blood is the appropriate test to order.

Specimen Required

Specimen Type: Blood

Collection Container/Tube:

Preferred: Yellow top (ACD)

Acceptable: EDTA, Heparin

Specimen Volume: 6 mL

Collection Instructions:

1. Do not transfer blood to other containers.

2. Label specimen as blood.

Forms

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

Specimen Minimum Volume

1 mL

Reject Due To

Gross hemolysis	Reject
Gross lipemia	OK

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Whole blood	Ambient (preferred)	72 hours	
	Refrigerated	72 hours	

Clinical and Interpretive

Clinical Information

Sezary syndrome is a leukemic form of cutaneous T-cell lymphoma (CTCL). By definition, it is associated with systemic skin involvement (erythroderma) and the presence of at least 1000/microL of circulating cells with irregular nuclear features (Sezary cells). Morphologic assessment of the number of Sezary cells has been proven to have low

reproducibility. Therefore, WHO/European Organization for Research and Treatment of Cancer (EORTC) classification of skin tumors adopted alternative methods to assess circulating T-cells in order to establish the diagnosis of Sezary syndrome. These include CD4:CD8 ratio of more than 10:1, and selective loss of CD7 and/or CD26 on 40% and 30% of the CD4-positiveT-cell population, respectively. It is important to recognize that the later criteria (fulfilled by peripheral blood flow cytometry immunophenotyping) are relative, and not in direct correlation with absolute counts of Sezary cells defined by morphology.

Reference Values

An interpretive report will be provided. This test will be processed as a laboratory consultation. An interpretation of the immunophenotypic findings and, if available, morphologic features will be provided by a board-certified hematopathologist for every case.

Interpretation

Sezary cells typically show loss of CD7 and/or CD26. As loss of these markers is not completely sensitive or specific for Sezary cells, the WHO/European Organization for Research and Treatment of Cancer (EORTC) classification of skin tumors proposed cutoffs of 30% for CD26 loss and 40% for CD7 loss on CD4-positive T-cells, as diagnostic criteria for Sezary syndrome. In addition, CD4:CD8 ratio of greater than or equal to 10:1 in a gated T-cell population is also considered abnormal, and part of diagnostic algorithm for Sezary syndrome.

In mycosis fungoides staging studies the cutoffs are even less clearly defined. The clinical outcome was worse in patients with more than 5% of circulating lymphocytes showing Sezary-like morphology. However, flow cytometry immunophenotyping is deemed useful for relative quantification of these cells only if they can be separated by aberrant expression of other surface markers. In majority of cases, this cannot be accomplished to the proposed cutoff point (5% of circulating lymphocytes).

The test will be resulted as "No phenotypically aberrant T-cell population detected" if there is no specific phenotype that allows separation of potentially abnormal CD4-positive T-cells, loss of CD26 (and/or CD7) is present in less than 30% (40%), and CD4:CD8 ratio is less than 10:1. If any of the above aberrancies are present, the test will be resulted as "Phenotypically distinct T-cell population is detected" with a description of phenotype, percentage of total CD4-positive population and percentage of total analyzed events. In addition, the phenotype will be compared to that of any distinct T-cell population previously seen in the same patient by our laboratory.

Cautions

Correlation with clinical features is necessary for diagnosis of Sezary syndrome. This analysis can only describe a cell population with aberrant phenotype, but the significance of this finding in isolation is uncertain.

Clinical Reference

1. Honra P, Deaver DM, Qin D, et al: Quantitative flow cytometric identification of aberrant T cell clusters in erythrodermic cutaneous T cell lymphoma. Implications for staging and prognosis. J Clin Pathol 2014;67:431-436

2. Vaughan J, Harrington AM, Hari PN, et al: Immunophenotypic stability of Sezary cells by flow cytometry: usefulness of flow cytometry in assessing response to and guiding alemtuzumab therapy. Am J Clin Patho. 2012 Mar;137(3):403-411

3. Kelemen K, Guitart J, Kuzel TM, et al: The usefulness of CD26 in flow cytometric analysis of peripheral blood in Sezary syndrome. Am J Clin Pathol 2008 Jan;129(1):146-156

4. Wilcox RA. Cutaneous T-cell lymphoma: 2016 update on diagnosis, risk-stratification, and management. Am J Hematol 2016;91:152-165 doi: 10.1002/ajh.24233

5. Olsen E, Vonderheid E, Pimpinelli N, et al: Revisions to the staging and classification of mycosis fungoides and Sezary syndrome: a proposal of the International Society for Cutaneous Lymphomas (ISCL) and the cutaneous

lymphoma task force of the European Organization of Research and Treatment of Cancer (EORTC). Blood 2007 Sep 15;110(6):1713-1722

6. Willemze R, Jaffe ES, Burg G, et al: WHO-EORTC classification for cutaneous lymphomas. Blood 2005;105:3768-3785

Performance

Method Description

Flow cytometry immunophenotyping of peripheral blood is performed using the following antibodies:

-Sezary Panel: CD2, CD3, CD4, CD5, CD7, CD8, CD26 and CD45

(Bossuyt X, Marti GE, Fleisher TA: Comparative analysis of whole blood lysis methods for flow cytometry. Cytometry. Communications in Clinical Cytometry 1997;30:124-133)

PDF Report

No

Day(s) and Time(s) Test Performed

Specimens are processed Monday through Sunday.

Results are reported Monday through Saturday.

Analytic Time

1 day

Maximum Laboratory Time

3 days

Specimen Retention Time

14 days

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

88184-Flow cytometry; first cell surface, cytoplasmic or nuclear marker x 1

88185-Flow cytometry; additional cell surface, cytoplasmic or nuclear marker (each)

88188-Flow Cytometry Interpretation, 9 to15 markers (if appropriate)

88189-Flow Cytometry Interpretation, 16 or more markers (if appropriate)

LOINC® Information

Test ID	Test Order Name	Order LOINC Value
SZMON	Sezary Monitoring Flow Cytometry, B	In Process

Result ID	Test Result Name	Result LOINC Value
CK130	Sezary Monitoring	No LOINC Needed
CK131	Final Diagnosis	50398-7
CK132	Special Studies	30954-2
CK133	Microscopic Description	22635-7