Overview

Useful For
Supporting a diagnosis of well-differentiated liposarcoma/atypical lipomatous tumor

Reflex Tests

<table>
<thead>
<tr>
<th>Test ID</th>
<th>Reporting Name</th>
<th>Available Separately</th>
<th>Always Performed</th>
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<tbody>
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</table>

Testing Algorithm
This test does not include a pathology consult. If a pathology consultation is requested, PATHC / Pathology Consultation should be ordered and the appropriate FISH test will be ordered and performed at an additional charge.

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.

Method Name
Fluorescence In Situ Hybridization (FISH)

NY State Available
Yes

Specimen

Specimen Type
Tissue

Necessary Information
A reason for referral and pathology report are required in order for testing to be performed. Send information with specimen. Acceptable pathology reports include working drafts, preliminary pathology or surgical pathology reports.

Specimen Required
Submit only 1 of the following specimens:

**Specimen Type:** Tissue

**Preferred:** Tissue block

**Collection Instructions:** Submit a formalin-fixed, paraffin-embedded (FFPE) tumor tissue block. Blocks prepared with alternative fixation methods may be acceptable; provide fixation method used.

**Acceptable:** Slides

**Collection Instructions:** Four consecutive, unstained, 5 micron-thick sections placed on positively charged slides, and 1 hematoxylin and eosin-stained slide.

**Forms**

If not ordering electronically, complete, print, and send 1 of the following forms with the specimen:

- Oncology Test Request (T729)
- Cardiovascular Test Request (T724)

**Specimen Minimum Volume**

Two consecutive, unstained, 5-micron-thick sections placed on positively charged slides and 1 hematoxylin and eosin-stained slide.

**Reject Due To**

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

**Specimen Stability Information**

<table>
<thead>
<tr>
<th>Specimen Type</th>
<th>Temperature</th>
<th>Time</th>
<th>Special Container</th>
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<tbody>
<tr>
<td>Tissue</td>
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<tr>
<td></td>
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**Clinical and Interpretive**

**Clinical Information**

The histological discrimination of well-differentiated liposarcoma/atypical lipomatous tumor (WDL/ALT) from lipoma can be diagnostically challenging. However, standard cytogenetic identification of ring and giant rod chromosomes strongly support the diagnosis of WDL/ALT. These abnormal chromosomes are mainly composed of amplified sequences derived from chromosome bands 12q13-15, and contain several amplified genes including MDM2, CPM, CDK4, and TSPAN31. MDM2 is amplified in >99% of WDL, and up to 30% of other types of sarcomas.

**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 the \textit{MDM2} FISH probe (positive result).

A positive result is consistent with amplification of the \textit{MDM2} gene locus (12q15) and supports the diagnosis of well-differentiated liposarcoma/ atypical lipomatous tumor (WDL/ALT).

A negative result is consistent with absence of amplification of the \textit{MDM2} gene locus (12q15). However, negative results do not exclude the diagnosis of WDL/ALT. Amplification varies in individual tumors and among different cells in the same tumor.

\textbf{Cautions}

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

Fixatives other than formalin (eg Prefer, Bouin) may not be successful for FISH assays, however nonformalin-fixed samples will not be rejected.

Paraffin-embedded tissues that have been decalcified are generally unsuccessful for FISH analysis. The pathologist reviewing the hematoxylin and eosin-stained slide may find it necessary to cancel testing.

\textbf{Supportive Data}

FISH analysis was performed on 10 formalin-fixed, paraffin-embedded, well-differentiated liposarcoma/atypical lipomatous tumors (WDL/ALT) tumor samples and 25 normal controls. Amplification of \textit{MDM2} was identified in the WDL/ALT samples and correlated with the CPM results. Amplification of \textit{MDM2} was not observed in any of the control samples tumors.

\textbf{Clinical Reference}


\textbf{Performance}

\textbf{Method Description}

This test is performed using commercially available \textit{MDM2} (12q15) and chromosome 12 centromere (D12Z3) probes. Formalin-fixed, paraffin-embedded tissues are cut at 5 microns and mounted on positively charged glass slides. The selection of tissue and the identification of target areas on the hematoxylin and eosin (H and E)-stained slide is performed by a pathologist. Using the H and E-stained slide as a reference, target areas are etched with a diamond-tipped etcher on the back of the unstained slide to be assayed. The probe set is hybridized to the appropriate target areas and 2 technologists each analyze 30 interphase nuclei (60 total) per probe set with the results expressed as a ratio \textit{MDM2}:D12Z3 signals.(Unpublished Mayo method)

\textbf{PDF Report}

No

\textbf{Day(s) and Time(s) Test Performed}

Samples processed Monday through Sunday. Results reported Monday through Friday, 8 a.m.-5 p.m. CST.
**Analytic Time**
7 days

**Maximum Laboratory Time**
10 days

**Specimen Retention Time**
Slides and H&E used for analysis are retained by the laboratory in accordance to CAP and NYS requirements. Client provided paraffin blocks and extra unstained slides (if provided) will be returned after testing is complete.

**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 Â¢â–¥â¢âœ DNA probe, each (first probe set), Interpretation and report
88271x2 Â¢â–¥â¢âœ DNA probe, each; each additional probe set (if appropriate)
88271x1 Â¢â–¥â¢âœ DNA probe, each; coverage for sets containing 3 probes (if appropriate)
88271x2 Â¢â–¥â¢âœ DNA probe, each; coverage for sets containing 4 probes (if appropriate)
88271x3 Â¢â–¥â¢âœ DNA probe, each; coverage for sets containing 5 probes (if appropriate)
88274 w/modifier 52 Â¢â–¥â¢âœ Interphase in situ hybridization, <25 cells, each probe set (if appropriate)
88274 Â¢â–¥â¢âœ Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate)
88275 Â¢â–¥â¢âœ Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate)

**LOINC® Information**

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<th>Order LOINC Value</th>
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