Overview

Useful For
Supporting the diagnosis of aneurysmal bone cyst or nodular fasciitis

Reflex Tests

<table>
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<tr>
<th>Test ID</th>
<th>Reporting Name</th>
<th>Available Separately</th>
<th>Always Performed</th>
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Testing Algorithm
This test does not include a pathology consultation. 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

**Container/Tube:** Formalin-fixed, paraffin-embedded tumor tissue block

**Collection Instructions:** Blocks prepared with alternative fixation methods may be acceptable; provide fixation method used

**Acceptable:** Slides

**Specimen Volume:** 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 an Oncology Test Request (T729) with the specimen.

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

**Clinical Information**

Aneurysmal bone cyst (ABC) is a multicystic and expansile bone tumor of uncertain line of differentiation. *USP6* rearrangements are detectable in approximately 70% of primary ABC and not in other conditions that may simulate ABC histologically, including giant cell tumor of bone, osteosarcoma, osteoblastoma, brown tumor, cherubism, and vascular neoplasms.

Nodular fasciitis (NF) is a self-limited mesenchymal lesion of myofibroblastic differentiation. NF rearrangements are detectable in 90% of NF but not in other conditions that may simulate NF, including dermatofibroma, cellular fibrous histiocytoma, fibromatosis, and a large variety 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 USP6 FISH probe (positive result).

A positive result is consistent with rearrangement of the USP6 gene locus on 17p13 and supports the diagnosis of aneurysmal bone cyst (ABC) or nodular fasciitis (NF).

A negative result is consistent with no rearrangement of the USP6 gene locus on 17p13.

However, this result does not exclude the diagnosis of ABC or NF. Rearrangement varies in individual tumors and among different cells in the same tumor.

**Cautions**

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

Fixatives other than formalin (e.g., 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.

**Supportive Data**

FISH analysis was performed on 101 samples including 14 primary aneurysmal bone cyst (ABC), 48 nodular fasciitis (NF), and 39 control formalin-fixed paraffin-embedded tissue samples. The normal controls were used to generate a normal cutoff for this assay. A rearrangement of USP6 was identified in 11 of 14 (77%) and 44 of 48 (92%) NF samples.

**Clinical Reference**


3. Fletcher CDM, Unni KK, Mertens F: World Health Organization Classification of Tumours. Pathology and Genetics of Tumours of Soft Tissue and Bone. IARC Press, Lyon, France, 2005, pp 48-49


**Performance**

**Method Description**

The test is performed using a laboratory-developed USP6 dual-color break-apart strategy probe (BAP). 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-stained slide is performed by a pathologist. Using the hematoxylin and eosin 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 50 interphase nuclei (100 total) with the results expressed as the percent of abnormal nuclei. (Unpublished Mayo method)

**PDF Report**

No

**Day(s) and Time(s) Test Performed**

Samples processed Monday through Sunday.

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

**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 and its performance characteristics 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 Äčâ„¬ä€œ DNA probe, each (first probe set), Interpretation and report

88271x2 Äčâ„¬ä€œ DNA probe, each; each additional probe set (if appropriate)

88271x1 Äčâ„¬ä€œ DNA probe, each; coverage for sets containing 3 probes (if appropriate)

88271x2 Äčâ„¬ä€œ DNA probe, each; coverage for sets containing 4 probes (if appropriate)

88271x3 Äčâ„¬ä€œ DNA probe, each; coverage for sets containing 5 probes (if appropriate)

88274 w/modifier 52 Äčâ„¬ä€œ Interphase in situ hybridization, <25 cells, each probe set (if appropriate)

88274 Äčâ„¬ä€œ Interphase in situ hybridization, 25 to 99 cells, each probe set (if appropriate)

88275 Äčâ„¬ä€œ Interphase in situ hybridization, 100 to 300 cells, each probe set (if appropriate)
**Test Definition: USPF**
USP6 (17p13), FISH, Ts

### LOINC® Information

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