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INTERPHASE FLUORESCENCE IN SITU HYBRIDIZATION TEST FOR LYMPHOMA AND SOLID TUMOR TISSUES ON PARAFFIN-EMBEDDED SECTIONS OR TISSUE IMPRINTS

Synonym(s): FISH, LUNG CANCER FISH PANEL, LYMPHOMA FISH PANEL

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Lab Section Category	<p>Cytogenetics - Cancer/Cancer FISH Click here to find out more about the write-up (/clinical-departments-centers/pathology/pathology-handbook/lab-discipline-special-instructions/pages/cytogenetics.aspx).</p>
Indications	<p>Refer to Table 1.</p> <p>Lymphoma probes include ALK breakapart (BA), BCL2(BA), BCL6(BA), c-MYC(BA), IGH/c-MYC(DF), BIRC3/MALT1(DF), IGH/CCND1(DF), IGH(BA), IGH/BCL2(DF) and MALT1(BA).</p> <p>Solid tumour tissues probes include ALK(BA), EWSR1(BA), SS18(BA), MDM2, DDIT3(BA), FUS(BA), FOXO1(BA), MET, ROS1 (BA), PIK3CA and RET(BA).</p> <p>Variant translocations can be detected using breakapart probes. For MDM2, amplification of the gene defines aggressive well-differentiated liposarcoma. For MET, increased gene copy number is an independent negative prognostic factor in NSCLC.</p> <p>For lung adenocarcinomas, Lung Cancer FISH Panel consisting of ALK(BA), ROS1(BA), MET and RET(BA) probes can be tested concurrently.</p> <p>For Diffuse Large B-Cell Lymphoma (DLBCL), Lymphoma FISH Panel consisting of BCL6(BA), MYC(BA) and BCL2(BA)probes can be tested concurrently.</p>
Specimen Required	<p>Freshly-cut tissue sections or tissue imprints. Bone marrow aspirates can only be used if there is lymphomatous involvement.</p>

Storage and Transport	The FISH test is optimal with freshly-cut tissue samples. Tissue sections should preferably be prepared between 4-6mm in thickness on coated/postively-charged slides. The optimal fixation time in formalin should be between 6 - 72 hours. An accompanying Hematoxylin and Eosin (H&E) stained slide with the tumour region marked out by a pathologist should be submitted together with at least 3 unstained sections for each FISH probe.
Test Result	<p>Normal or Abnormal signal pattern depending on the probe construction.</p> <p>1. Dual Fusion(DF) probe: Typical abnormal signal pattern is 2 fusions, 1 red and 1 green pattern. Variant pattern is outside the normal range.</p> <p>2. Breakapart(BA) probe: Typical abnormal signal pattern is 1 fusion, 1 red and 1 green pattern. Variant pattern is outside the normal range.</p> <p>3. Enumeration probe: Ratio of target gene to internal control probe ≥ 2.0 or >5 copies of the target gene is considered as amplified.</p> <p>FISH findings are reported in accordance to the International System for Human Cytogenomic Nomenclature (ISCN, 2016).</p>
Turnaround Time	3 ~ 10 days
Day(s) Test Set up	Monday – Saturday (office hours)

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Change History Notes

- 15 Nov 2012 09:00 AM**
 Updated the following sections:
 - Indications
 - Test Result
 - Turnaround Time (to within 10 days.)

- 02 Feb 2015 11:31 AM**
 Included 2 new FISH Panel tests - Lung Cancer FISH Panel and Lymphoma FISH Panel that were offered with effect from 1 Sep 2014 and 20 Oct 2014 respectively.

- 07 Dec 2015 05:12 PM**
 Updated the following sections:
 - Indications
 - Storage and Transport

- Test Result
 - Turnaround Time (3 ~ 10 days)
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- **06 Jul 2017 11:07 AM**
 - Updated the test result for ISCN, 2013 to ISCN, 2016
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