



TECHNICAL NOTICE

SOUTH BEND MEDICAL FOUNDATION

Burkitt Lymphoma Panel, by FISH

Effective Date: August 1, 2010

Performing Department: Molecular Pathology

Method: Fluorescence in situ hybridization (FISH)

Vysis LSI IGH/MYC and LSI MYC Break Apart (BAP) probes are included in the test.

Clinical Significance: Burkitt lymphoma (BL) is a B-cell lymphoma with characteristic histologic and cytologic features that often presents in extranodal sites or as an acute leukemia. Three clinical variants are recognized. Endemic BL occurs in most often in equatorial Africa and New Guinea, where it is a common childhood malignancy. Sporadic BL is seen throughout the world, most often in children and young adults. Immunodeficiency-associated BL is mainly associated with Human Immunodeficiency Virus (HIV) infection, often in patients with acquired immunodeficiency syndrome (AIDS). All forms of BL show one of several translocations involving the gene MYC, which are highly characteristic but not entirely specific for the disease. As a result of these translocations, MYC expression is deregulated, driving tumor cells through the cell cycle and activating target genes involved in apoptosis. BL tumor cells remain in a near constant state of division, leading to a highly aggressive, fast growing malignancy that is nonetheless potentially curable

Most BL cases have MYC translocation at band 8q24 to the Immunoglobulin heavy chain region 14q32 [**t(8;14)**] or, less commonly, to the lambda 22q11 [**t(8;22)**] or kappa 2p12 [**t(8;2)**] light chain loci. However, up to 10% of BL cases may lack a demonstrable MYC translocation by FISH, a finding that is not well understood.

Use:

1. Identification of genetic abnormalities characteristic of BL in a suspect case to facilitate prompt initiation of appropriate treatment.
2. Diagnostic tool to confirm BL when histologic, flow cytometric and/or immunohistochemical studies are inconclusive.

Reference Range: At least 200 interphase cells will be counted for each sample.

Dual fusion pattern at or greater than 3% is considered positive for **t(8;14)(q24;q32)**.

Break-apart pattern at or greater than 5% is considered positive for an (8q 24) rearrangement.

SPECIMEN REQUIREMENTS AND COLLECTION:

Specimen Type: Paraffin-embedded, formalin-fixed tissue block

Stability: ambient (20-25°C): indefinitely; refrigerator temperature (2-8°C): acceptable

Transportation: do not freeze tissue blocks or expose tissue blocks to excessive heat. Samples should be shipped in proper containers to maintain 20-25° C during the months of extreme temp.

Cause for specimen rejection: frozen block, samples fixed/processed in fixative other than 10% neutral buffered formalin.

Whole blood in EDTA or sodium heparin anticoagulant

Preferred volume: 5 ml

Minimal volume: 2 ml

Stability: refrigerated temp: up to 7 days; ambient: up to 3 days

Causes for rejection: frozen, clotted, or grossly hemolyzed samples

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530 N. Lafayette Boulevard • South Bend, IN 46601 • (574) 234-4176

Elkhart (574) 293-8441 • (800) 544-0925

Robert J. Tomec, M.D. • *Medical Director*

Bone marrow aspirate in EDTA or sodium heparin anticoagulant
Preferred volume: 2 ml
Minimal volume: 1 ml
Stability: refrigerated temp: up to 7 days; ambient: up to 3 days
Causes for rejection: frozen, clotted, or grossly hemolyzed samples

Bone marrow smear
Preferred: 3 slides
Minimal: 1 slide
Transportation: ambient

Testing Schedule: Monday, Wednesday with results one week later.

Order: Test #: 36165 CPT: 88271x4; 88275x2

Please direct any questions, or comments regarding this notice to Dr. William Kaliney (wkaliney@sbfm.org), Dr. Bobbie C. Sutton (bsutton@sbfm.org), Deborah H. Sun, Ph.D. (dsun@sbfm.org), or Sally Cornwall (scornwall@sbfm.org) or call South Bend Medical Foundation, (574) 234-4176 or (800) 544-0925.

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