

VERIPATH LABORATORIES

**Cytogenetics Laboratory**  
**Fluorescence in situ hybridization (FISH) Tests**  
**Neoplastic Disorders**

Neoplasm	Cytogenetic Aberration/Locus	Probe Name	Detection Parameters
<b>Chronic Myeloproliferative diseases</b>			
Chronic myelogenous leukemia	t(9;22)(q34;q11.2)	BCR/ABL	Detects <i>BCR/ABL</i> gene rearrangement
Hypereosinophilic syndrome	4q12 deletion	CHIC2	Detects deletions of <i>CHIC2</i>
Polycythemia vera	t(9;22)(q34;q11.2)	BCR/ABL	Diagnosis requires exclusion of <i>BCR/ABL</i> gene rearrangement
Essential thrombocythemia	t(9;22)(q34;q11.2)	BCR/ABL	Diagnosis requires exclusion of <i>BCR/ABL</i> gene rearrangement
<b>Myelodysplastic/myeloproliferative diseases</b>			
Chronic myelomonocytic leukemia	7cen	D7Z1	Detects monosomy 7
Juvenile myelomonocytic leukemia	7cen	D7Z1	Detects monosomy 7
<b>Myelodysplastic syndromes (MDS)</b>			
Myelodysplastic Disorder (MDS) FISH Panel (Probes can be ordered individually)	5p15.2/5q31	D5S721, D5S23/EGR1	Detects deletions or other aberrations of chromosome 5
	7q11.23/7q31	ELN, LIMK1, D7S613, D7S486, D7S522	Detects deletions or other aberrations of chromosome 7
	8cen	D8Z2	Detects gain of chromosome 8
	20q12	D20S108	Detects deletions in the long arm of chromosome 20
	11q23	MLL	Detects <i>MLL</i> gene rearrangement
<b>Acute myeloid leukemia (AML)</b>			
AML, FAB type M2	t(8;21)(q22;q22)	ETO/AML1	Detects <i>ETO/AML1</i> gene rearrangement
Acute promyelocytic leukemia, FAB type M3	t(15;17)(q24;q21.1) and variants	PML/RAR $\alpha$	Detects <i>PML</i> and/or <i>RAR<math>\alpha</math></i> gene rearrangement
AML, FAB type M4eo	inv(16)(p13q22) or t(16;16)(p13;q22)	CBF $\beta$	Detects <i>CBF<math>\beta</math></i> gene rearrangement
AML with 11q23 abnormalities	11q23	MLL	Detects <i>MLL</i> gene rearrangement
AML and MDS, therapy related			
Alkylating Agent Related	5p15.2/5q31	D5S721, D5S23/EGR1	Detects deletions or other aberrations of chromosome 5
	7q11.23/7q31	ELN, LIMK1, D7S613/ D7S486, D7S522	Detects deletions or other aberrations of chromosome 7
Topoisomerase II inhibitor-related	11q23	MLL	Detects <i>MLL</i> gene rearrangement

<b>Precursor B and T-cell Neoplasms</b>			
Precursor B-lymphoblastic leukemia/lymphoma (ALL) FISH Panel (Probes can be ordered individually)	t(9;22)(q34;q11.2)	BCR/ABL	Detects <i>BCR/ABL</i> gene rearrangement
	t(12;21)(p13;q22)	TEL/AML1	Detects <i>TEL/AML1</i> gene rearrangement
	11q23 rearrangement	MLL	Detects <i>MLL</i> gene rearrangement
	4cen/10cen/17cen	D4Z1/D10Z1/D17Z1	Detects trisomies of chromosomes 4, 10 and 17
Precursor T-lymphoblastic leukemia/lymphoma	9q34	ABL	Detects <i>ABL</i> gene amplification
	9p21	p16	Detects deletion of the <i>p16</i> gene
<b>Mature B-cell Neoplasms</b>			
Chronic lymphocytic leukemia/small lymphocytic lymphoma (CLL) FISH Panel (Probes can be ordered individually)	11q22.3	ATM	Detects deletions of the <i>ATM</i> gene
	12cen	D12Z3	Detects gain of chromosome 12
	13q14	RB1	Detects deletions of the <i>RB1</i> region
	17p13.1	TP53	Detects deletions of the <i>TP53</i> gene
Multiple myeloma (MM) FISH Panel (Probes can be ordered individually)	3cen	D3Z1	Detects gain of chromosome 3
	9cen	D9Z1	Detects gain of chromosome 9
	t(11;14)(q13;q32)	CCND1(BCL1)/IGH	Detects <i>MYEOV/IGH</i> gene rearrangement
	13q14	RB1	Detects deletions of the <i>RB1</i> region
	17p13.1	TP53	Detects deletions of the <i>TP53</i> gene
Extranodal marginal zone B-cell lymphoma (MALT lymphoma)	t(11;18)(q21;q21)	API2/MALT1	Detects <i>API2/MALT1</i> gene rearrangement
Follicular lymphoma	t(14;18)(q32;q21)	IGH/BCL2	Detects <i>IGH/BCL2</i> gene rearrangement
Mantle cell lymphoma	t(11;14)(q13;q32)	CCND1(BCL1)/IGH	Detects <i>CCND1(BCL1)/IGH</i> gene rearrangement
Diffuse large B-cell lymphoma	3q27	BCL6	Detects <i>BCL6</i> gene rearrangement
Burkitt lymphoma/leukemia	t(8;14)(q24.1;q32) and variants	CMYC/IGH	Detects <i>CMYC</i> and/or <i>IGH</i> gene rearrangement
<b>Mature T-cell and NK-cell Neoplasms</b>			
Anaplastic large cell lymphoma	t(2;5)(p23;q35)and variants	ALK	Detects <i>ALK</i> gene rearrangement
<b>Mastocytosis</b>			
Systemic mastocytosis	4q12 deletion	CHIC2	Detects deletions of <i>CHIC2</i>
<b>Solid Tumors</b>			
Alveolar Rhabdomyosarcoma	t(2;13)(q35;q14)and variants	FKHR	Detects <i>FKHR</i> gene rearrangement
Ewing Sarcoma	t(11;22)(q24;q12) and variants	EWSR	Detects <i>EWSR1</i> gene rearrangement
Myxoid Liposarcoma	t(12;16)(q13;p11.2)	FUS	Detects <i>FUS</i> gene rearrangement
Neuroblastoma	2p23-24	NMYC	Detects <i>NMYC</i> gene amplification
Synovial Sarcoma	t(X;18)(p11.2;q11.2)	SYT	Detects <i>SYT</i> gene rearrangement