

**Oncology/Pathology
Client Services:
(800) 447-5816**

www.genzymegenetics.com/fish

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Hematologic Cancer FISH Probes & Profiles

Probes in bold type detect the most common abnormalities or abnormalities with prognostic significance in the disease groups listed. All the probes listed below may be ordered individually or as a profile based on medical necessity using the Genzyme test requisition form.

Probes listed in bold type represent standard profiles for each disease group. Probes in plain type may also be ordered to further characterize the diseases or detect additional abnormalities.

Acute Leukemias

PROBE	LOCUS/ABNORMALITY DETECTED
Acute Myelogenous Leukemia (AML)	
D20S108	20q-
D7S522/7cen	-7/7q-
EGR1/5p	-5/5q-
8cen	+8
MLL	11q23
AML1/ETO	t(8;21)
BCR/ABL	t(9;22)
CBFB	t(16;16), inv(16), del(16)
PML/RARA	t(15;17)
RARA	17q21/t(15;17), t(11;17), t(5;17)
Acute Lymphocytic Leukemia (ALL)	
BCR/ABL	t(9;22)
D21S259/D21S341/D21S342	+21 (adult)
MLL	11q23
TEL/AML1	t(12;21) (pediatric)
4cen	+4 (pediatric)
6cen	+6 (adult)
10cen	+10 (pediatric)
17cen	+17 (pediatric)
P16	del(9p)
IGH-BA [IGH5'/IGH3']	14q32.3 rearrangements
MYC-BA	8q24, t(2;8), t(8;14), t(8;22)
MYC/IGH	t(8;14)
Myeloproliferative Disorders (MPD) - Chronic Myelogenous Leukemia (CML)	
BCR/ABL	t(9;22)
D13S319/RB1	del(13)(q14.3)
D20S108	20q-
8cen	+8
9cen	+9
D7S522/7cen	-7/7q-
EGR1/5p	-5/5q
FIP1L1-PDGFRa (CHIC2)	4q12 del
Myelodysplastic Syndromes (MDS)	
D20S108	20q-
D7S522/7cen	-7/7q-
EGR1/5p	-5/5q-
8cen	+8
MLL	11q23
TP53	17p13.1

Lymphoproliferative Disorders

PROBE	LOCUS/ABNORMALITY DETECTED
Chronic Lymphocytic Leukemia (CLL)	
ATM	11q22.3
CCND1/IGH	t(11;14)
TP53	17p13.1
12cen	+12
D13S319	13q14.3
LAMP1	13q34
IGH-BA [IGH5'/IGH3']	14q32.3
Non-Hodgkin Lymphoma (NHL)	
BCL6	3q27
CCND1/IGH	t(11;14)
IGH/BCL2	t(14;18)
MYC-BA	t(2;8), t(8;14), t(8;22)
12cen	+12
ALK	t(2;5)
IGH-BA (IGH5'/IGH3')	14q32.3 rearrangements
MALT 1	18q21, t(11;18), t(14;18)
MYC/IGH	t(8;14)
Mantle Cell Lymphoma	
CCND1/IGH	t(11;14)
Follicular Lymphoma	
IGH/BCL2	t(14;18)
Burkitt's Lymphoma	
MYC-BA	t(2;8), t(8;14), t(8;22)
MYC/IGH	t(8;14)
MALT Lymphoma	
MALT 1	18q21/t(11;18), t(14;18)
Anaplastic Large Cell Lymphoma	
ALK	2p23/t(2;5) or variants

Plasma Cell Dyscrasia

PROBE	LOCUS/ABNORMALITY DETECTED
Multiple Myeloma (MM)	
CCND1/IGH	t(11;14)
FGFR3/IGH	t(4;14)
IGH/MAF	t(14;16)
RB1/D13S319	13q14
TP53	17p13.1
3cen	+3
IGH-BA [IGH5'/IGH3']	14q32.3
7cen	+7
9cen	+9
11cen	+11

Solid Tumor Cancer FISH Probes & Profiles

PROBE	LOCUS/ABNORMALITY DETECTED
Bladder Cancer Profile (UroVysion®) *	
p16	del(9)(p21)
3	+3
7	+7
17	+17
* UroVysion® is a registered trademark of Abbott Laboratories.	
Breast Cancer	
HER2/17cen	17q11.2-q12 amplification
Neuroblastoma	
NMYC	2p24.1 amplification
Ewing's Sarcoma	
EWSR1	22q12
Oligodendroglioma	
1p/19q deletions	1p/1q, 19p/19q

Specimen Requirements:

Peripheral Blood	5-10 ml in a green-top tube (sodium heparin)
Stem Cell Product	10-20 ml in a green-top tube (sodium heparin)
Fixed Bone Marrow Biopsy	1-2 cm (in length) – Do not decalcify
Fresh Bone Marrow Core Biopsy	1 cm (in length) in RPMI transport media – Do not decalcify
Bone Marrow Aspirate	2-3 ml in a green-top tube (sodium heparin)
Fine Needle Aspirate	2 ml in RPMI transport media
Fresh Tissue Biopsy	2 pieces (0.2cm x 0.2cm x 0.2cm) in RPMI transport media
Fixed Paraffin Block†	1 piece (0.2cm x 0.2cm x 0.2cm) – Specimens must be fixed in formalin
Cerebral Spinal Fluid	2 ml in a sterile plastic tube
Body Fluids	50-200 ml in a 1:1 dilution of RPMI (submit within 24 hours)
Urine	33 ml (added to Genzyme tube provided)

Probes or Probe Profiles:

FISH probes can be ordered either individually, in combination or in conjunction with conventional cytogenetics (karyotyping).

Please call Oncology/Pathology Client Services for additional information about these probes or on probes required, but not listed.

Only those probes marked with a † can be performed on fixed paraffin embedded tissue.



Doing More to Personalize Testing

Comprehensive Listing of Hematology/Oncology FISH Probes

PROBES	CLINICAL USE
ALK†	NHL
ATM	CLL
BCL6†	NHL
BCR/ABL	CML, AML, ALL
CBFB	AML-M4Eo
CCND1/IGH†	NHL, CLL, MM
D13S319	CLL
D20S108	MDS, AML, MPD
D21S259/D21S341/D21S342	AML, ALL
D7S522/7cen	MDS/AML
EGR1/5p	MDS/AML
ETO/AML1	AML, M2
FIP1L1-PDGFRa (CHIC2)	HES
FGFR3/IGH	MM
IGH-BA [IGH5'/IGH3']	NHL, CLL, MM
IGH/BCL2†	NHL
IGH/MAF	MM
LAMP1	CLL
MALT1†	NHL
MLL	MDS/AML, ALL
MYC†	Amplification
MYC-BA†	NHL, ALL
MYC/IGH†	NHL, ALL
P16	ALL
PML/RARA	AML-M3
RARA	AML-M3
RB1	MM
TEL/AML1	ALL
TP53	CLL, MM, NHL, MDS

Chromosome Enumeration

CENTROMERIC PROBES

Chromosome 3
Chromosome 4
Chromosome 6
Chromosome 7
Chromosome 8
Chromosome 9
Chromosome 10

CENTROMERIC PROBES

Chromosome 11
Chromosome 12
Chromosome 15
Chromosome 17
Chromosome 18
Chromosome X
Chromosome Y

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