

## HEMATOLOGY | ONCOLOGY | LYMPHOMA FISH

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### INDICATION-SPECIFIC TESTING and PANELS

▶ **Acute Lymphocytic Leukemia/Lymphoma (ALL)-Pediatric**

- ABL1 [9q34]
- ABL2 [1q25.2]
- BCR::ABL1 [t(9;22)] / LSI 9q34
- CRLF2 [Xp22.33/Yp11.3]
- ETV6::RUNX1 (TEL::AML1) [t(12;21)]
- Hyperdiploidy
  - 4 centromere
  - 10 centromere
  - 17 centromere
- KMT2A (MLL) [11q23]
- PDGFRB/CSF1R [5q32]

**Acute Lymphocytic Leukemia/Lymphoma (ALL)-Adult**

- 4 centromere
- 10 centromere
- 17 centromere
- BCR::ABL1 [t(9;22)] / LSI 9q34
- CDKN2A/2B [9p21]
- CRLF2 [Xp22.33/Yp11.3]
- ETV6::RUNX1 [t(12;21)(p13;q22)]
- IGH/14q32
- KMT2A (MLL) [11q23]
- TCF3::PBX1/t(1;19)(q23;p13.3)
- TP53 [17p13.1]

*Expanded Ph-like ALL Panel*

- ABL1 [9q34]
- ABL2 [1q25]
- EPOR [19p13.2]
- JAK2 [9p24]
- MYC [8q24]
- PDGFRB/CSF1R [5q32]

**Acute Lymphocytic Leukemia/Lymphoma (ALL)-Ph-like**

- ABL1 [9q34]
- ABL2 [1q25.2]
- BCR::ABL1 [t(9;22)] / LSI 9q34
- CRLF2 [Xp22.33/Yp11.3]
- EPOR [19p13.2]
- JAK2 [9p24]
- PDGFRB/CSF1R [5q32]

**Acute Lymphocytic Leukemia/Lymphoma (ALL)-T-cell**

- 6q21 / 6q23
- BCR::ABL1 [t(9;22)] / LSI 9q34
- CDKN2A (P16) [9p21]
- KMT2A (MLL) [11q23]
- TRA/D (TCR) [14q11.2]
- TRB (TCRB) [7q34]

**Acute Myeloid Leukemia (AML)**

- 8 centromere
- CFBF [16q22]
- D7S486 [7q31] / 7 centromere
- EGR1 [5q31]
- KMT2A (MLL) [11q23]
- MECOM (EVI1) [3q26.2]
- NUP 98 [11p15]
- PML::RARA [t(15;17)]
- RARA [17q21]
- RUNX1::RUNX1T1 (AML1::ETO) [t(8;21)]
- TP53 [17p13.1] / 17 centromere

**Burkitt lymphoma**

- IGH::MYC / 8 centromere [t(8;14)]
- MYC [8q24]

**Chronic Lymphocytic Leukemia (CLL)**

- 6q23
- 12 centromere
- ATM [11q22.3]
- D13S319 [13q14] / 13q34
- IGH [14q32]
- IGH::CCND1 [t(11;14)]
- TP53 [17p13.1] / 17 centromere

**Chronic Myeloid Leukemia (CML)**

- BCR::ABL1 [t(9;22)] / LSI 9q34
- MECOM [3q26.2]\*
- TP53 [17p13.1] / 17 centromere\*
- 8 centromere\*
- 19p13 / 19q13\*

\*when concurrent Chromosome Analysis is not performed and BCR::ABL1 fusion is detected

**Eosinophilia**

- ABL1 [9q34]
- BCR::ABL1 [t(9;22)] / LSI 9q34
- CFBF [16q22]
- ETV6 (TEL) [12p13]
- FGFR1 [8p12]
- FIP1L1 / CHIC2 / PDGFRA [4q12]
- JAK2 [9p24]
- PDGFRB [5q32]

**Follicular Lymphoma**

- IGH::BCL2 [t(14;18)]

**Myelodysplastic Neoplasm (MDS)**

- 8 centromere
- D7S486 [7q31] / 7 centromere
- EGR1 [5q31]
- KMT2A (MLL) [11q23]
- MECOM (EVI1) [3q26.2]
- NUP98 [11p15]
- TP53 [17p13.1] / 17 centromere

**Myeloproliferative Neoplasm (MPN)**

- 8 centromere
- BCR::ABL1 [t(9;22)] / LSI 9q34
- D7S486 [7q31] / 7 centromere
- D13S319 [13q14] / 13q34
- TP53 [17p13.1] / 17 centromere

**Myelodysplastic Neoplasm / Myeloproliferative Neoplasm (MDS/MPN)**

- 8 centromere
- BCR::ABL1 [t(9;22)] / LSI 9q34
- D7S486 [7q31] / 7 centromere
- D13S319 [13q14] / 13q34
- EGR1 [5q31]
- KMT2A (MLL) [11q23]
- MECOM (EVI1) [3q26.2]
- NUP98 [11p15]
- TP53 [17p13.1] / 17 centromere

**Mantle Cell Lymphoma**

- IGH::CCND1 [t(11;14)]

**Marginal Zone Lymphoma**

- 12 centromere
- BCL6 [3q27] / 3 centromere
- D7S486 [7q31] / 7 centromere
- IGH [14q32]
- MALT1 [18q21] / 18 centromere

**Non-Hodgkin Lymphoma (NHL)**

- BCL6 [3q27]\* / 3 centromere
- BCL2 [18q21] / 18 centromere
- IGH::MYC / 8 centromere [t(8;14)]
- MYC [8q24]
- TP53 [17p13.1] / 17 centromere
- \* alternate & major breakpoint

**Multiple Myeloma (MM)**

- CDKN2C [1p32.3] / CKS1B [1q21.3]
- D13S319 [13q14] / 13q34
- Hyperdiploidy
  - 9 centromere
  - 11 centromere
- IGH [14q32 abnormalities]
- IGH::CCND1 [t(11;14)]
- IGH::FGFR3 [t(4;14)]
- IGH::MAF [t(14;16)]
- IGH::MAFB [t(14;20)]
- MYC [8q24]
- TP53 [17p13.1] / 17 centromere

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### ▶ PROBE LIST

Centromere enumeration	CRLF2 [Xp22.33/Yp11.3]	IRF4 / DUSP22 [6p25.3]
6q21	D13S319 [13q14/13q34]	JAK2 [9p24]
6q23	D7S486 [7q31] / 7 centromere	KAT6A::CREBBP [t(8;16)]
15q22	DEK::NUP214 [t(6;9)]	KMT2A (MLL) [11q23]
19p13 / 19q13	DUSP22 / IRF4 [6p25.3]	MALT1 [18q21] / 18 centromere
20q12	EGR1 [5q31]	MECOM (EVI1) [3q26.2]
ABL1 [9q34]	EPOR [19p13.2]	MLLT10 (AF10) [10p12]
ABL2 [1q25.2]	ETV6 (TEL) [12p13]	MLLT10 (AF10)::PICALM [t(10;11)]
ALK [2p23]	ETV6::RUNX1 (TEL::AML1)[t(12;21)]	MYC [8q24]
ATM [11q22.3]	FGFR1 [8p12]	NUP98 [11p15]
BCL2 [18q21] / 18 centromere	FIP1L1 / CHIC2 / PDGFRA [4q12]	P2RY8 [Xp22.3/Yp11.3]
BCL6 [3q27]	IGH [14q32 abnormalities]	PBX1::TCF3 [t(1;19)]
BCR::ABL1 [t(9;22)] / LSI [9q34]	IGH::BCL2 [t(14;18)]	PDGFRB / CSF1R [5q32]
BIRC3 (API2)::MALT1 [t(11;18)]	IGH::CCND1 [t(11;14)]	PML::RARA [t(15;17)]
CBFB [16q22]	IGH::FGFR3 [t(4;14)]	RARA [17q21]
CBFB::MYH11 [inv(16)/ t(16;16)]	IGH::MAF [t(14;16)]	RUNX1::RUNX1T1 (AML1::ETO) [t(8;21)]
CCND1 [11q13]	IGH::MAFB [t(14;20)]	TCL1A [14q32]
CCND2 [12p13]	IGH::MALT1 [t(14;18)]	TP53 [17p13.1] / 17 centromere
CCND3 [6p21.1]	IGH::MYC / 8 centromere [t(8;14)]	TRA/D (TCR) [14q11.2]
CDKN2A (P16) [9p21]	IGK [2p11.2]	TRB (TCRB) [7q34]
CDKN2C [1p32.3] / CKS1B [1q21.3]	IGL [22q11]	

Probes can be ordered individually or in a custom panel. Order FISH Interphase test (FISH\_INT).