



# FLUORESCENCE IN-SITU HYBRIDIZATION (FISH) HEMATOLOGICAL DIAGNOSTICS



**BIOSCIENTIA**  
INTERNATIONAL

Family name, first name of patient: \_\_\_\_\_

\_\_\_\_\_ Date of birth: \_\_\_\_\_

Id.No.: \_\_\_\_\_

Physician: \_\_\_\_\_

Signature: \_\_\_\_\_ Place, Date: \_\_\_\_\_

Client data

Barcode

Please choose and mark the requested probes for the above mentioned patient.

## Acute Myeloid Leukemia [AML]

- BCR/ABL1 t(9;22)(q34;q11.2)
- CBFβ/MYH11 inv(16)(p13q22)/t(16q22)
- D7S522 with control D7Z1 (7q deletion/monosomy 7)
- D20S108 (deletion 20q12) and D8Z2 (trisomy 8)
- EGR1 (5q31), RPS14 (5q33) with control in 5p15 (5q deletion/monosomy 5)
- KMT2A(MLL) t(11q23)
- PML/RARA t(15;17)(q24.1;q21.1)
- RPN1/MECOM t(3;3)(q21.3;q26.2)/inv(3)(q26.2)
- RUNX1T1/RUNX1 t(8;21)(q22;q22)
- TET2 (deletion 4q24) with control 4q12
- TP53 (17p13) in combination with ATM (11q22) (deletion 17p/11q)
- Trisomy 8 (D8Z2)
- Trisomy 11 (D11Z1)
- Trisomy 21 (RUNX1: 21q22)
- Others: \_\_\_\_\_

- TP53 (17p13) in combination with ATM (11q22) (deletion 17p/i(17q), deletion 11q)
- Trisomy 8 (D8Z2)
- TET2 (deletion 4q24) with control 4q12
- Loss Y-chromosome (DYZ3)
- Others: \_\_\_\_\_

## Chronic Myeloproliferative Neoplasias [MPN] / Chronic Myelomonocytic Leukemia [CMML] / Chronic Eosinophilic Leukemia [CEL] / Hypereosinophilic Syndrome [HES]

- BCR/ABL1 t(9;22)(q34;q11.2)
- CKS1B(1q21)/CDKN2C(1p32.2) (trisomy 1 or 1q)
- ETV6/RUNX1 (deletion 12p/ETV6-rearrangement)
- D7S486 (7q31) with control D7Z1 (deletion 7q/monosomy 7)
- D20S108 (deletion 20q12) and D8Z2 (trisomy 8)
- FGFR1 t(8p11)
- PDGFRA/CHIC2/FIP1L1 (deletion 4q12, FIP1L1-/PDGFR-rearrangement)
- PDGFRB t(5q32)
- TET2 (deletion 4q24)
- Trisomy 8 (D8Z2)
- Trisomy 9 (D9Z3)
- TP53 (17p13) in combination with ATM (11q22) (deletion 17p/i(17q), deletion 11q)
- Others: \_\_\_\_\_

## Chronic Myeloid Leukemia [CML]

- BCR/ABL1 t(9;22)(q34;q11.2)
- TP53 (17p13.1) in combination with ATM (11q22.3) (deletion 17p/i(17q))
- Trisomy 8 (D8Z2)
- Others: \_\_\_\_\_

## Myelodysplastic Syndrome [MDS]

- Complete panel (deletion 5q/monosomy 5, deletion 7q31/monosomy 7, trisomy 8, deletion 12p, deletion 17p/i(17q), deletion 20q12, trisomy 21, -Y)
- CKS1B(1q21)/CDKN2C(1p32.2) (gain 1 or 1q)
- ETV6/RUNX1 (deletion 12p; deletion 21q22/trisomy 21)
- D7S486 (7q31) with control D7Z1 (deletion 7q/monosomy 7)
- D20S108 (deletion 20q12) and D8Z2 (trisomy 8)
- EGR1 (5q31), RPS14 (5q33) with control in 5p15 (deletion 5q/monosomy 5)

## Chronic Lymphocytic Leukemia [B-CLL] / Small Lymphocytic Lymphoma [SLL] / Lymphoplasmocytic Lymphoma Waldenstrom Macroglobulinemia

- Complete B-CLL panel (deletion 6q23, deletion 11q22, trisomy 12, deletion 13q14, deletion 13q34, IGH-rearrangement t(14q32), deletion 17p13)
- ATM (11q22) and TP53 (17p13) (deletion 11q, deletion 17p)
- BCL3 t(19q13)

- BCL6 t(3q27)/gain 3q
- CCND1/IGH t(11;14)(q13;q32)
- IGH/BCL2 t(14;18)(q32;q21)/trisomy 18
- MYB (6q23) with controls in 6q21 (SEC63) and D6Z1
- MYC t(8q24)/gain 8q24
- Centromere 12, DLEU (13q14), LAMP1 (13q34) (trisomy 12, deletion 13q14, deletion 13q)
- Others: \_\_\_\_\_

### Non-Hodgkin-Lymphoma [NHL] / B-Cell-Lymphoma [B-NHL]

- Complete panel (deletion 6q23, deletion 11q22, trisomy 12, deletion 13q14, deletion 13q34, IGH-rearrangement t(14q32), deletion 17p13)
- ALK t(2p23) in ALK+ DLBCL
- ATM (11q22) and TP53 (17p13) (deletion 11q, deletion 17p)
- BCL3 t(19q13)
- BCL6 t(3q27)/gain 3q
- CCND1/IGH t(11;14)(q13;q32)
- CCND3/IGH t(6;14)(p21;q32)
- CDKN2A (p16, 9p21) with control CEP9 (deletion 9p)
- IGH t(14q32)
- IGH/BCL2 t(14;18)(q32;q21)/gain 18q
- MALT1 t(18q21)
- MYB (6q23) with controls in 6q21 (SEC63) and D6Z1
- MYC t(8q24)/gain 8q24
- MYC/IGH t(8;14)(q24;q32)
- Centromere 12, DLEU (13q14), LAMP1 (13q34) (trisomy 12, deletion 13q14, deletion 13q)
- Others: \_\_\_\_\_

### T-Cell-Lymphoma [T-NHL]

- ALK t(2p23)
- ATM (11q22.3) and TP53 (17p13.1) (deletion 11q, deletion 17p)
- ETV6/RUNX1 (deletion 12p)
- MYC t(8q24)/gain 8q24
- PDGFRA/CHIC2/FIP1L1 (deletion 4q12, FIP1L1/PDGFR-rearrangement)
- TCR  $\alpha/\delta$  t(14q11)
- Others: \_\_\_\_\_

### Plasma Cell Myeloma / Multiple Myeloma / MGUS

For FISH analysis, "magnetic activated cell sorting" [MACS] will be initially performed to isolate CD138+ plasma cells

- Complete panel (deletion 1p32.3, amplification 1q21, deletion/gain 11q22, trisomy 12, deletion 13q14, deletion 13q34, monosomy 13, IGH-rearrangement t(14q32), deletion 17p13)
- Aneuploidies of the chromosomes: 5 (5p15), 9 (9q22), 15 (15q22)
- ATM (11q22) and TP53 (17p13) (deletion/gain 11q, deletion 17p)
- CKS1B (1q21)/CDKN2C (1p32.2) (deletion 1p/amplification 1q)
- CCND1/IGH t(11;14)(q13;q32)
- CCND3/IGH t(6;14)(p21;q32)
- FGFR3/IGH t(4;14)(p16;q32)
- IGH t(14q32)
- IGH/MAFA t(14;16)(q32;q23)

- IGH/MAFB t(14;20)(q32;q12)
- MYC/IGH t(8;14)(q24;q32)
- Centromere 12, DLEU (13q14), LAMP1 (13q34) (deletion 13q/monosomy 13)
- Others: \_\_\_\_\_

### Acute Lymphoblastic Leukemia / B-Cell Acute Lymphoblastic Leukemia [B-ALL]

- Aneuploidies of the chromosomes 4 (D4Z1), 10 (D10Z1), 17 (D17Z1),
- Aneuploidies of the chromosome 21 (RUNX1)
- BCR/ABL1 t(9;22)(q34;q11.2)
- CDKN2A (p16, 9p21) with control CEP9 (deletion 9p)
- E2A(TCF3) t(19p13.3)
- ETV6/RUNX1 t(12;21)(p13;q22)
- ETV6/RUNX1 (deletion 12p/amplification RUNX1)
- IGH t(14q32)
- KMT2A(MLL) t(11q23)
- KMT2A(MLL)/AFF1(AF4) t(4;11)(q21.3-q22.1;q23.3)
- KMT2A(MLL)/MLLT1(ENL) t(11;19)(q23.3;p13.3)
- KMT2A(MLL)/MLLT3(AF9) t(9;11)(p21.3;q23.3)
- KMT2A(MLL)/MLLT4(AF6) t(6;11)(q27;q23.3)
- MYB (6q23) with controls in 6q21 (SEC63) and D6Z1
- MYC t(8q24)
- MYC/IGH t(8;14)(q24;q32)
- TCF3/PBX1 t(1;19)(q23;p13.3)
- Others: \_\_\_\_\_

### T-Cell Acute Lymphoblastic Leukemia [T-ALL]

- CDKN2A (p16, 9p21) with control CEP9 (deletion 9p)
- MYB (6q23) with controls in 6q21 (SEC63) and D6Z1
- TCR  $\alpha/\delta$  t(14q11)
- Others: \_\_\_\_\_

### Severe Aplastic Anemia [AA]

- D7S486 (7q31) with control D7Z1 (7q deletion/monosomy 7)
- DLEU (13q14), (13q14) with control LAMP1 (13q34) (deletion 13q14.3)
- MYB (6q23) with controls in 6q21 (SEC63) and D6Z1
- TP53 (17p13) in combination with ATM (11q22) (deletion 17p)
- Trisomy 8 (D8Z2)
- Trisomy 21 (RUNX1: 21q22)
- Others: \_\_\_\_\_

### Chromosome X- and Y-specific FISH after BMT

- Chromosome X- and Y-specific probes (DXZ1, DYZ3)
- Others: \_\_\_\_\_