TRICORE REFERENCE LABORATORIES

FLUORESCENCE IN SITU HYBRIDIZATION (FISH) AVAILABLE FROM TRICORE

Turnaround Time

Average turnaround time is 24 to 48 hours, Monday through Friday.
Specimens received prior to 3 pm will be read the following day.
Samples received prior to 3 pm on Friday will be reported out Monday.
STAT FISH analysis can be arranged for Saturday.

FISH Analysis May Be Done On The Following Specimen Types

Bone marrow aspirate
Direct (unstained) bone marrow smear or destained bone marrow smear
Peripheral blood
Amniotic fluid, chorionic villi sample, products of conception
Fresh tissue
Formalin-fixed, paraffin-embedded, non-decalcified tissue (selected probes only, see below)

Hematologic Cancer DNA FISH Probes

Acute myelogenous leukemia

RUNX1T1/RUNX1 (*ETO/AML1*) dual color, dual fusion probe	t(8;21)
PML/RARA dual color, dual fusion probe	t(15;17)
CBFB dual color, breakapart probe	inv(16), t(16;16)
MLL dual color, breakapart probe	t(11q23)
BCR/ABL1 dual color, dual fusion probe	t(9;22)

Myelodysplastic syndrome/Acute myeloid leukemia

ERG1/D5S23, D7S486/CEP7, CEP 8, D20S108	5q-/-5, 7q-/-7, +8, 20q-

These probes may be ordered separately or as a panel

Chronic myelogenous leukemia

BCR/ABL1 dual color, dual fusion probe	t(9;22)

Hypereosinophilic syndrome

CHIC-2 deletion, *FIP1L1-PDGFRA* tri-color rearrangement probe	4q12 CHIC-2

Acute lymphoblastic leukemia

ETV6/RUNX1 ES (TEL/AML1) dual color, single fusion probe with extra signal	t(12;21)
MLL dual color, breakapart probe	t(11q23)
BCR/ABL1 dual color, dual fusion probe	t(9;22)
CEP 4, CEP 10, CEP 17 (pediatric pre *B-ALL*)	+4, +10, +17

These probes may be ordered separately or as a panel

Chronic lymphocytic leukemia - FDA approved

CLL 5 probe panel: *CEP 12, D13S319, LSI13q34, p53 & ATM*	+12, del(13q14.3, del 13q34) del(17p13.1) & del(11q22.3)

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Non-Hodgkin lymphoma

IgH/MYC, CEP 8 tri-color, dual fusion translocation probe	t(8;14) Burkitt lymphoma
IgH/BCL2 dual color, dual fusion translocation probe	t(14;18) Follicular lymphoma
IgH/CCND1 dual color, dual fusion probe	t(11;14) Mantle cell lymphoma
MYC dual color break apart probe	8q24 MYC
BCL2 dual color break apart probe	18q21 FL
BCL6 dual color break apart probe	3q27 DLCL

Multiple myeloma/plasma cell myeloma

These probes may be ordered separately or as a panel

IgH/CCND1 dual color, dual fusion probe	t(11;14), del(13q14.3, del13q34)
D13S319/LSI13q34, p53	del(17p13.1)
IgH/FGFR3	t(4;14)

NEW MM PANEL UNDER CONSTRUCTION:

TP53/CEP7	del(17p13.1)
IgH/FGFR3	t(4;14)
IgH/MAF	t(14;16)
CKS1B	+1q21

Sex mismatched bone marrow transplant

CEP X & CEP Y	XX/ XY

Solid Tumor FISH Probes

LSI *EWSR1* (22q12) dual color, breakapart probe	Ewing sarcoma
LSI *EGFR* (7p12)/CEP 7 dual color amplification probe	Glioma
LSI *ALK* 2p23 dual color, breakapart probe-FDA approved	Adenocarcinoma

Paraffin embedded FISH analysis

Probes for t(8;14), t(11;14), t(14;18), *MYC*, *BCL2*, *BCL6*, *ALK* 2p23, and Ewing sarcoma (*EWSR1*) can be ordered on formalin-fixed, paraffin embedded, non-decalcified tissue samples. Turn-around time is 2~4 days on cut samples.

Breast Cancer

PathVysion *HER-2* FISH analysis on formalin fixed paraffin embedded breast tissue.
Average turnaround time is 2~3 days on cut samples.

Lung Cancer

ALK, *ROS1*, *RET*, *MET* FISH analysis on formalin fixed paraffin embedded lung tissue. Average turn-around time is 2~3 days on cut samples.

Glioma

EGFR, 1p36, 19q13 FISH analysis on formalin fixed paraffin embedded brain tissue. Average turn-around time is 2~3 days on cut samples.

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UroVysion Bladder Cancer

UroVysion FISH analysis for CEP3/CEP7/CEP17 and 9p21 on voided urine. FISH and Cytology require minimum of 60 mL in lab provided collection kit. Average turnaround time is 3~4 days.

Prenatal FISH Analysis

Recommend minimum of 15~18ml of amniotic fluid for FISH & routine chromosome analysis.

Prenatal Aneuploid Test (PAT)	X, Y, 13, 18 & 21

Constitutional Abnormalities

Routine chromosome analysis and specific probe for clinically indicated syndrome would be run concurrently. Average turnaround time for FISH analysis on metaphases is 2 days for anueploidy analysis, 3~4 days for microdeletion metaphase analysis. STAT aneuploid FISH for 13, 18, 21 or X&Y is 24 hours. Sodium heparin peripheral blood sample is required.

Aneuploidy FISH analysis

Trisomy 21 (Down syndrome)
Trisomy 13 (Patau syndrome)
Trisomy 18 (Edward syndrome)
Monosomy X (Turner syndrome)
CEP X/CEP Y and CEP X/SRY (sex ambiguity, Klinefelter syndrome)

Microdeletion FISH analysis

Kallmann syndrome	Xp22.3	(send out assay)
DiGeorge syndrome	22q11.2	
Prader-Willi/Angelman syndrome	15q11-q13	(two probe set - D15S10 and SNRPN)
Smith-Magenis syndrome	17p13.3	(send out assay)
Williams syndrome	7q11.23	(send out assay)
Cri-du-Chat syndrome	5p15.2	(send out assay)
1p36 syndrome	1p36	(send out assay)
Wolf-Hirschhorn syndrome	4p16.3	(send out assay)
Subtelomere panel	all telomeres	(send out assay)

Array CGH (Comparative genomic hybridization)

Currently this assay is being sent out. Submit one peripheral blood sodium heparin tube and one EDTA tube.

Other probes may be available upon request. For more information, please contact TriCore Cytogenetics at 505-938-8430.