NEO GENOMICS

FISH and Cytogenetics

Fluorescence in Situ Hybridization (FISH) and Cytogenetics services

Trust the experts with over 20 years of expertise.

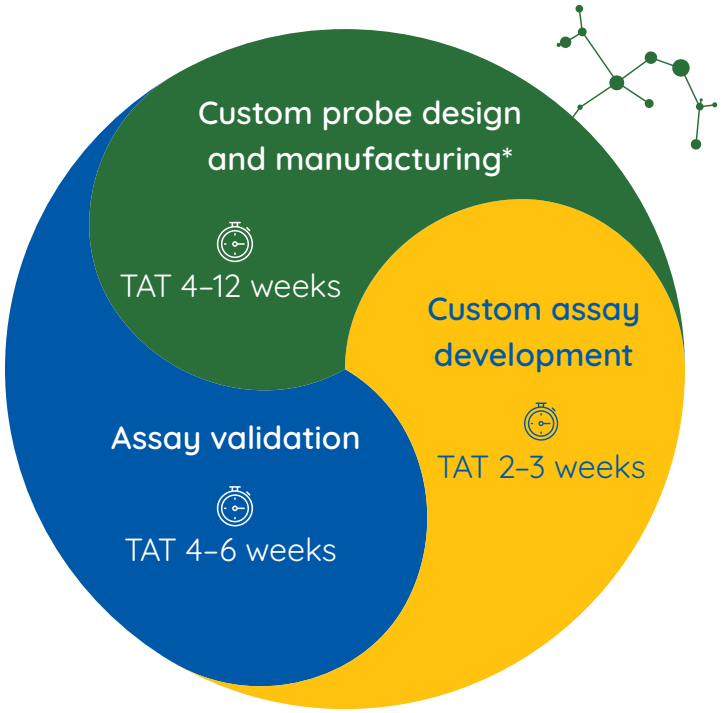
At NeoGenomics, we offer comprehensive and validated FISH probes to detect gene amplification, rearrangement, translocation, deletion and gain, as well as custom FISH probe assays and validation with quick turnaround and standardized workflow. In addition, we provide exceptional cytogenetics services, including cytogeneticist review, cell culturing and accurate chromosomal analysis.

FISH

- Provides FISH coverage of over 90 different loci
- >60 tests with global LDT and IVD testing options
- Single marker assays and disease- focused panels
- Available in the U.S. (Fort Myers)
- Custom FISH assay development, including probe design
- Phase 3 CDx FISH trial experience
- Sample types including FFPE, blood, bone marrow
- Plasma cell enrichment available for plasma cell disorders

For current listing, please contact a NeoGenomics representative at 866.776.5907, option 3 or email us at **pharmaservices@neogenomics.com**

Assay development and validation workflow



Cytogenetics

Available in U.S. (Fort Myers)

Oncology chromosome analysis

- Bone marrow aspirate
- Peripheral blood for CLL only

Indications available:

- Myeloid
- Lymphoid
- Plasma cell

FISH assays and panels

Bold indicates Pharma assays that are validated and ready for use. The others indicate assays from the Clinical Division which are available to transfer to Pharma Services (assay transfer TAT 4~6 weeks).

- **11q Aberration in NHL**
- **13q Deletion**
- 1p/19q Deletions for Glioma
- **1p36 Deletion**
- **6q Deletion**
- ALK (2p23) for Lymphoma
- **ALK for NSCLC (IVD)**
- ALL Adult FISH Panel
- ALL FISH Panel (Ph-Like)
- ALL Pediatric FISH Panel
- **AML Favorable-Risk Panel**
  t(8;21), t(15;17), inv(16)
- AML Non-Favorable Risk Panel (non-NY)
- **AML Standard Panel**
  5, 7, 8/20, MLL, t(8;21), t(15;17), inv(16)
- **BIRC3(API2)/MALT1 t(11;18)**
- **BCL2 (18q21)**
- **BCL6 (3q27)**
- BCR/ABL1 t(9;22)
- BRAF Rearrangement
- **CBFB inv(16)**
- **CCND1(BCL1)/IgH t(11;14)**
- CDKN2A (p16) Deletion FISH for ALL
- CDKN2A (p16) Deletion FISH for Mesothelioma
- CDKN2C/CKS1B
- **CLL FISH Panel (LDT and IVD options)**
  LDT: 6q, ATM/TP53, 12/13, t(11;14)
  IVD: ATM/TP53, 12/13
- CRFL2 Break-Apart
- DDIT3 (CHOP)
- DUSP22-IRF4 Rearrangement
- **EGFR Amplification**
- EGFR1/RPS14/5- (5)
- Eosinophilia FISH Panel
- EPOR Break-Apart
- FGFR2 Rearragement
- **FGFR3/IgH t(4;14)**
- **HER2 Breast and Gastric Cancer (LDT and IVD options)**
- **High-grade/Large B-cell Lymphoma *(Double/Triple Hit)**
  MYC, BCL2, BCL6
- IgH (14q32)
- **IgH/BCL2 t(14;18)**
- **IgH/MAF t(14;16)**
- **IgH/MAFB t(14;20)**
- Low Grade/ Small B-Cell Lymphoma Panel
- JAK2 (9p24.1)
- MALT1 (18q21)
- MDM2
- **MDS Standard FISH Panel**
  5, 7. 8/20, MLL
- MDS Extended FISH Panel
- MET FISH
- **MLL (11q23)**
- MPN FISH Panel
- **MYC (8q24)**
- **MYC/IgH/Cen 8 t(8;14)**
- MYC Amplification for Angiosarcoma
- **MYCN (n-MYC) Amplification**
- NTRK 1, 2, 3 FISH Panel
- NTRK3 FISH
- NUP98
- PDGFRA Amplification
- PDGFRA Rearrangement
- PDGFRB Rearrangement (22q13)
- Plasma Cell Myeloma FISH Panel
- **Plasma Cell Myeloma IgH Complex FISH Panel**
  t(4;14), t(11;14), t(14;16), t(14;20)
- **Plasma Cell Myeloma Prognostic FISH Panel**
  1pq(CDKN2C/CKS1B), t(4;14), t(11;14), 13q, t(14;16), t(14;20), TP53/NF1
- **PML/RARA t(15;17)**
- PTEN
- PTPRT/8+ (8/20)
- RARA Break-Apart
- RET FISH
- ROS1
- **RUNX1T1/RUNX1 (ETO/AML1) t(8;21)**
- SS18 (SYT) FISH
- TCL1
- **TP53/NF1 (del17p)**
- TP63 Rearrangement

**Double Triple Hit determination now using 5th WHO Classification criteria*

Specimen requirements

FISH

Heme samples	Tube requirements	Requirements
Bone marrow aspirate	1–2 mL sodium heparin tube. EDTA tube is acceptable.	Use cold pack for transport. Make sure cold pack is not in direct contact with specimen. Plasma Cell Enrichment testing specimens must arrive within 72 hours.
Peripheral blood	2–5 mL sodium heparin tube. EDTA tube is acceptable.	Use cold pack for transport. Make sure cold pack is not in direct contact with specimen.
Fixed paraffin tissue	**Slide requirements**	**Requirements**
H&E	Minimum of 1 slide cut at 4-5 µm	Use cold pack during transport of paraffin blocks and unstained slides. Cold pack should not be placed in direct contact with the specimen during shipping. Please use positively-charged slides and 10% NBF fixative. Do not use zinc fixatives. Most decalcification solutions are incompatible with FISH due to potential hydrolysis of the DNA. Limited acid decalcification (≤ 24 hours) in 5% formic acid can preserve DNA sufficient for FISH according to some studies. Other studies have demonstrated that EDTA decalcified bone material preserves DNA better and is preferable for FISH analysis.
FISH probe set	Minimum of 2 slides cut at 4-5 µm per marker	

Example: *2 probe set will require 5 total unstained slides: 4 slides for FISH probe sets + 1 H&E slide.*

Cytogenetics

Heme samples	Tube requirements	Requirements
Bone marrow aspirate	1–2 mL sodium heparin tube.	Individual specimens must arrive within 72 hours of draw. Do not freeze. Use cold pack for transport. Make sure cold pack is not in direct contact with specimen.
Peripheral blood	2–5 mL sodium heparin tube.	

Typical TAT

	FISH	Cytogenetics
Heme (peripheral blood, bone marrow aspirate)	**5 days**	**7 days** **9 days for plasma cell disorder**
Solid tissue (FFPE)	**Real time:** 7 days **Batch of 10:** 10 days **Batch of >10:** 2-3 weeks	

TAT in business days. TAT may be longer for ex-U.S. sites.

About NeoGenomics Pharma Services

NeoGenomics' Pharma Services unifies several innovative companies' scientific and medical leadership under one leading brand, offering one of the most comprehensive laboratory services menus available for biomarker testing supporting oncology clinical trials globally. We provide our clients with an unparalleled level of expertise, service, flexibility and scalability. Additionally, we offer alternative business models and solutions across the continuum of development from discovery to pre-clinical research and development through commercialization.

To learn more about NeoGenomics Pharma Services, visit us online at neogenomics.com/pharma-services, call us at 866.776.5907, option 3 or email us at pharmaservices@neogenomics.com

NeoGenomics, Inc. is a premier cancer diagnostics company, specializing in cancer genetics testing and information services. We offer one of the most comprehensive oncology-focused testing menus across the cancer continuum, serving oncologists, pathologists, hospital systems, academic centers, and pharmaceutical firms with innovative diagnostic and predictive testing to help them diagnose and treat cancer. Headquartered in Fort Myers, FL, NeoGenomics operates a network of CAP accredited and CLIA certified laboratories for full-service sample processing and analysis services throughout the US; and a CAP accredited full-service, sample-processing laboratory in Cambridge, United Kingdom.

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