

Department of Clinical Laboratory Genetics
Genome Diagnostics & Cancer Cytogenetics
Somatic Testing



Toronto General Hospital
 Eaton Wing 11-444, 200 Elizabeth Street
 Toronto, Ontario M5G 2C4
 Head: Tracy Stockley, PhD, FCCMG, FACMG
 Phone: (416) 340-4800 x5739/7624
 Fax: (416) 340-3596
 Hours of Operation (Mon-Fri) 8:30AM-4:30PM
 CAP: 7175217 CLIA:99D1106115
 IQMH: 4204-site 0141

Patient Information or Hospital Stamp Here

Last Name: _____

First Name: _____

Date of Birth (MM/DD/YYYY): _____

Gender: _____

Health Card #: _____

Hospital #: _____

Instructions:
THIS REQ IS FOR SOMATIC TESTING ONLY – see link at bottom of page for HEREDITARY REQ

1. Complete all information as requested
2. Send requisition with specimen to address above – **DO NOT COME TO TORONTO GENERAL FOR BLOOD DRAW**
3. Keep specimen at room temperature unless frozen
4. If shipping, send same day or next day delivery
5. Specimen labelling: **Name, DOB, MRN#, Date Taken**

Information For Reporting:
 Full Name of Referring Physician _____
 Physician Billing # _____
 Hospital/Address: _____

Phone: _____
 Fax: _____

Physician Signature: _____

Copy Report To: _____

Specimen Requirements – Genome Diagnostics:

- Peripheral blood**
 For leukemia/lymphoma - **20 ml in EDTA**
 For circulating tumour (cell free DNA) - **18 ml in STREK tubes**
 For all other testing - **5ml in EDTA**
- Bone marrow aspirate**
1-2 ml in EDTA
- Extracted DNA or RNA (>1µg)** (please circle nucleic acid)
 Tissue Source: _____
 Concentration: _____ Volume: _____

Extracted nucleic acid will only be accepted from an appropriately qualified laboratory (ex. IQMH or equivalent).

Solid Tumour: Keep shipped PE material below 30°C

- Tissue or cell block (PREFERRED)**
 -Recut H&E slide (slide will not be returned) and copy of the pathology report is required
 -note that a 3mm punch biopsy will be taken from block
- Unstained slides (only if BLOCK is not available)**
 - Cut **8 unstained sections** @ 7µm thickness on uncoated slides
 - **Air dry (not in oven)** unstained sections at room temperature.
 - For all tissues we require **2 H&E** stained sections, one cut before cutting slides from block and one cut after.
- PE tissue (curls)** 5x10µm sections in a sterile Eppendorf tube
- Fresh tissue:** 5mm³ frozen or in 10 ml sterile medium at room temperature
- Fresh/Fixed Cytology fluid:** as much as possible

Specimen Requirements - Cytogenetics:

- Bone marrow aspirate**
 1.5-2 ml in **sodium heparin**
- Peripheral blood**
 7 ml in **sodium heparin**
- Tissue biopsy** (5-10mm³ in **sterile** medium/saline)
- Paraffin Embedded Tissue (FISH)**
 -include circled H&E
 -2 x 4µm sections/probe on positively charged slides
- Cytology preparation (FISH)**
 -Air-dried smear/touch prep (1-2 per test)
 -Cytospin slide (1-2 per test)

See page 5 for Cytogenetics testing

**Department of Clinical Laboratory Genetics
Genome Diagnostics & Cancer Cytogenetics -
Somatic Testing**

Toronto General Hospital

Eaton Wing 11-444, 200 Elizabeth Street

Toronto, Ontario M5G 2C4

Head: Tracy Stockley, PhD, FCCMG, FACMG

Phone: (416) 340-4800 x5739/7624

Fax: (416) 340-3596

Hours of Operation (Mon-Fri) 8:30AM-4:30PM

Patient Information or Hospital Stamp Here

Last Name: _____

First Name: _____

Date of Birth (MM/DD/YYYY): _____

Gender: _____

Health Card #: _____

Hospital #: _____

Clinical Diagnosis/Reason for Referral:

Referral:

Diagnosis: _____

Monitoring: (for follow-up samples)

Treatment (specify type) _____

Other: _____

Date of last treatment _____

Genome Diagnostics Tests - Hematological

Leukemia: Single Gene testing

- ^BCR/ABL1 t(9;22)
- ^ABL1 kinase domain mutation
- ^RUNX1/RUNX1T1 (AML/ETO) t(8;21)
- ^CBFB/MYH11 Inv(16) or t(16;16)
- PML/RARA t(15;17)
- FLT3/NPM1 (new diagnosis)
- ^FLT3/NPM1 (prevalent case)
- CLL IGHV Somatic Hypermutation (**for patients requiring treatment only**)

**Malignant Hematology NGS panel -
Acute Myeloid Leukemia (Funded by
MOH for New Diagnosis only)**

Comprehensive Sequencing (NGS), includes:

ASXL1	CUX1	GNAS	KRAS	PTPN11	TP53
BCOR	DDX41	IDH1	MPL	RAD21	U2AF1
BCORL1	DNMT3A	IDH2	MYD88	RUNX1	WT1
BRAF	ETNK1	IKZF1	NOTCH1	SETBP1	ZRSR2
CALR	ETV6	IRF1	NPM1	SF3B1	
CBL	EZH2	JAK1	NRAS	SH2B3	
CEBPA	FBXW7	JAK2	PAX5	SRSF2	
CSF3R	FLT3	KIT	PHF6	STAG2	
CTNNA1	GATA2	KMT2A	PPM1D	TET2	

***Please provide a Karyotype report if analysis was not done at UHN**

**Lymphoma: please attach
corresponding pathology report**

- ^B-cell Clonality
- ^T-cell Clonality
- ^MYD88

**Bone marrow/Stem cell transplant
monitoring:**

^15 STRs and amelogenin XY loci

Please specify:

- Donor
- Recipient Pre-SCT
- Recipient Post-SCT

Other:

- ^BRAF (p.V600E/K only) (Hairy cell leukemia, Langerhans cell histiocytosis, Erdheim-Chester)
- ^KIT (Mastocytosis - BM or involved tissue preferred)
- ^JAK2 (Exon 12 + Exon 14 p.V617F) / CALR (MPD)

**Identity Testing (15 STRs and
amelogenin XY loci):**

^Specimen matching (Please provide control specimen, specimen in question and details)

Virus Detection (Nasopharyngeal Carcinoma):

^Quantitative EBV from blood plasma

^Indicates a test that will be billed to the referring hospital, laboratory, physician or medical group.

**Department of Clinical Laboratory Genetics
Genome Diagnostics & Cancer Cytogenetics –
Somatic Testing**

Toronto General Hospital

Eaton Wing 11-444, 200 Elizabeth Street

Toronto, Ontario M5G 2C4

Head: Tracy Stockley, PhD, FCCMG, FACMG

Phone: (416) 340-4800 x5739/7624

Fax: (416) 340-3596

Hours of Operation (Mon-Fri) 8:30AM-4:30PM

Patient Information or Hospital Stamp Here

Last Name:

First Name:

Date of Birth (MM/DD/YYYY):

Gender:

Health Card #:

Hospital #:

Note: Please send requisitions to specimen holding facility to ensure that block/slides accompany requisitions when sent to testing lab

Genome Diagnostics Tests – Solid Tumour

Adenocarcinoma of the Lung

- EGFR -- Exons 18,19,20,21 (clinically relevant variants only)
- EGFR – p.T790M mutation only (solid tumour/cell block)
- *EGFR – p. T790M mutation only (Circulating tumour DNA in blood) ***peripheral blood in STRECK tube required (see pg. 1 for specimen requirements)**

Please indicate primary EGFR mutation:

- Exon 19 deletion
- Exon 21 L858R
- Other _____

Colorectal Adenocarcinoma

- Comprehensive Sequencing (NGS) (BRAF, KRAS, NRAS, PIK3CA)
- MLH1 Methylation (**Please include IHC MMR results if completed**)
- ^MSI - Only performed for cases with equivocal IHC MMR results -requires normal reference (normal tissue or blood)

Endometrial Carcinoma

- MLH1 Methylation (**Please include IHC MMR results if completed**)
- ^MSI – Only performed for cases with equivocal IHC MMR results -requires normal reference (normal tissue or

Gastrointestinal Stromal Tumour

- ^Comprehensive Sequencing (NGS) (KIT, PDGFRA)

Glioma

- ^MGMT methylation
- ^IDH1/IDH2 Sequencing

Melanoma (Somatic)

- BRAF (p.V600E/K only)
- Comprehensive Sequencing (NGS)

BAP1	CDK6	GNA11	KIT
BRAF	CDKN2A	GNAQ	NRAS
CDK4	EIF1AX	HRAS	SF3B1

Papillary Thyroid Carcinoma

- ^BRAF (p.V600E/K only)

^Indicates a test that will be billed to the referring hospital, laboratory, physician or medical group.

Department of Clinical Laboratory Genetics
Genome Diagnostics & Cancer Cytogenetics –
Somatic Testing

Toronto General Hospital

Eaton Wing 11-444, 200 Elizabeth Street

Toronto, Ontario M5G 2C4

Head: Tracy Stockley, PhD, FCCMG, FACMG

Phone: (416) 340-4800 x5739/7624

Fax: (416) 340-3596

Hours of Operation (Mon-Fri) 8:30AM-4:30PM

Patient Information or Hospital Stamp Here

Last Name:

First Name:

Date of Birth (MM/DD/YYYY):

Gender:

Health Card #:

Hospital #:

Note: Please send requisitions to specimen holding facility to ensure that block/slides accompany requisitions when sent to testing lab

Genome Diagnostics Tests – Solid Tumour

Polymorphous Low Grade Adenocarcinoma (PLGA) Salivary gland

^PRKD1 Sequencing

Serous Carcinoma – High Grade (Ovarian/Tubal/Peritoneal)

Comprehensive Sequencing (NGS) (BRCA1, BRCA2)

Tumour Cellularity within circled area _____%

EXTERNAL pathology review required prior sending material.

For Solid Tumour: Circled HE required prior to sending block. **Tumour cellularity must be a minimum of 20% tumour within circled area.**

A ~3mm area will be cored from block. If a block cannot be sent, please send sections (see page 1).

For Cytology Specimens: **Tumour cellularity must be a minimum of 10% tumour.** Please see page 1 for specimen requirements.

Virus Detection

^HPV (DNA tissue testing-37 genotypes)

^Indicates a test that will be billed to the referring hospital, laboratory, physician or medical group.

**Department of Clinical Laboratory Genetics
Genome Diagnostics & Cancer Cytogenetics -
Somatic Testing**

Toronto General Hospital

Eaton Wing 11-444, 200 Elizabeth Street
Toronto, Ontario M5G 2C4

Head: Tracy Stockley, PhD, FCCMG, FACMG

Phone: (416) 340-4800 x5739/7624

Fax: (416) 340-3596

Hours of Operation (Mon-Fri) 8:30AM-4:30PM

Patient Information or Hospital Stamp Here

Last Name: _____

First Name: _____

Date of Birth (MM/DD/YYYY): _____

Gender: _____

Health Card #: _____

Hospital #: _____

A Pathology / Hematology report must accompany or be sent (fax/email) for all bone marrow samples and solid tumour testing. Samples will be banked and testing delayed until this information is received.

Clinical Diagnosis/Reason for Referral:

- Diagnosis:** _____
- Monitoring:** (follow-up sample)
Treatment (specify type) _____
(date of last treatment) _____
- Other:** _____

**proper interpretation of post-transplant karyotyping requires information about transplant type*

- Pre-transplant monitoring
- Post-transplant monitoring
Type of transplant auto allo sex-mismatch
Date of transplant (mm/yy): _____

Conventional Cytogenetics

- ^G-banded karyotyping on bone marrow
- ^G-banded Karyotyping on peripheral blood
(Only to confirm a constitutional abnormality detected on bone marrow karyotype)

FISH for Hematologic Disorders

Chronic Lymphocytic Leukemia

- ^CLL FISH Panel (11q del, trisomy 12, 13q del, 17p del)
- diagnostic
- follow-up (justify): _____

Chronic Myelogenous Leukemia

- ^BCR/ABL1 (only for molecular negative)

Plasma Cell Neoplasms with CD138 Cell Enrichment

(Magnetic separation requires ≥ 1mL marrow aspirate. If other tests are requested, e.g. karyotype, please submit an additional 1.5-2mL of aspirate in a separate tube.)

- ^Multiple Myeloma Panel
- ^Amyloidosis Panel

Eosinophilia FISH Panel

- ^PDGFRA / PDGFRB / FGFR1

MDS/AML Panel

(ordered automatically for failed karyotypes)

- ^Del(5q)/-5 and Del(7q)/-7
- ^KMT2A Break-apart
- ^MECOM 3q26 rearrangement

Lymphoid Disorders:

High Grade B-cell Lymphoma Panel

- ^Entire Panel
- ^MYC
- ^IGH/BCL2 t(14;18)(q32;q21)
- ^BCL6

Anaplastic large cell lymphoma

- ^ALK

MALT lymphoma

- ^MALT1

Mantle cell lymphoma

- ^CCND1/IGH t(11;14)(q13;q32)

Follicular lymphoma / Diffuse Large B-Cell Lymphoma

- ^IGH/BCL2 t(14;18)(q32;q21)
- ^BCL6

Solid Tumour*:

Breast cancer

- HER2 Amplification

Brain Cancer: Gliomas

- ^1p/19q Co-deletion FISH

Lung Adenocarcinoma

- ALK
- ^ROS1

Sarcoma and Carcinoma FISH

- ^EWSR1 - EWS-Family Tumours
- ^FUS – Low Grade Fibromyxoid Sarcoma
- ^SS18 – Synovial Sarcoma
- ^MAML2 – Mucoepidermoid Carcinoma
- ^ETV6 – Secretory Carcinoma
- ^CDKN2A (p16) – Malignant Mesothelioma

***tests are performed on FFPE tissue only, see specimen requirements. For cytology specimens please contact the lab to inquire if test is validated.**