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
Director: Suzanne Kamel-Reid, PhD 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
3.Keep specimen at room temperature unless frozen
4.If shipping, send same day or next day delivery
5.Specimen labelling: **Name, DOB, MRN#**

Referring Physician Signature:_____

Information for Reporting:
Full Name of Referring physician:
Hospital/Address:

Phone:
Fax:
Copy Report To:_____

Specimen Requirements - Molecular Diagnostics:

❑ **Peripheral blood**
20 mL in **EDTA** for leukemia/lymphoma
18 ml in **STREK** tubes for circulating tumour (cell free DNA)
5ml in **EDTA** for all other testing

❑ **Bone marrow aspirate**
1-2 ml in **EDTA**

❑ **Extracted DNA or RNA (>1µg)** (please circle nucleic acid)
Tissue Source _____
Concentration: _____ Volume:_____

Solid Tumour: Keep shipped PE material below 30°C

❑ **Tissue or cell block** (**PREFERRED**)
-H&E slide and copy of the pathology report is required
-note that two 1mm punch biopsies will be taken from block

❑ **Unstained slides** (**only if BLOCK is not available**)
- Cut **12 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**: 5mm^3 frozen or in 10 ml **sterile** medium at room temperature

❑ **CSF:** as much as possible
❑ **FNA:** 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** (5-10mm^3 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)

Collection date/time:_____

Collected by:_____

For Lab use only:

Please ensure that you are using an updated copy of this requisition available at:
http://www.uhn.ca/LMP/Health_Professionals/Documents/CytogeneticsandMolecularDiagnosticstests.pdf

Toronto General
Toronto Western
Princess Margaret
Toronto Rehab

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Clinical Diagnosis/Reason for Referral:

- ❑ **Diagnosis**
- ❑ **Monitoring** (follow-up sample)
  Treatment (specify type)_____
  (wks/mos/yrs) _____
- ❑ **Other:** _____

Cytogenetics Tests

*A Pathology / Hematology report must be sent. Tests will be **delayed** until this information is received.*

- ❑ **Karyotype**
- ❑ **FISH**
  - ❑ **CLL Panel** □ diagnostic □ follow-up (justify): _____
  - ❑ **Multiple Myeloma Panel** (*Magnetic separation requires ≥ 1mL marrow aspirate. If additional tests are requested please submit an additional 1.5-2mL of aspirate in a separate tube.)*

Lymphoma:

- ❑ **Diffuse aggressive B cell NHL Panel (includes MYC, IGH/BCL2, BCL6)**
  (separately: □ MYC □ IGH/BCL2 □ BCL6)
- ❑ **Anaplastic large cell lymphoma: ALK**
- ❑ **MALT lymphoma: MALT1 break-apart probe**
- ❑ **Mantle cell lymphoma: IGH/CCND1**
- ❑ **Follicular lymphoma: IGH/BCL2**

Solid Tumour:

- ❑ **Breast cancer: HER2**
- ❑ **Gliomas: 1p/19q**
- ❑ **Lung cancer : ALK (need additional u/s slide for IHC)**
- ❑ **Sarcoma** (specify) **:** □ EWSR1 □ FUS □ SS18

Molecular Testing continued on next page

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Molecular Diagnostics Tests - Hematological

Leukemia:
- ❑ BCR/ABL1 t(9;22)
- ❑ ABL1 kinase domain mutation
- ❑ KMT2A/AFF1 (MLL/AF4) t(4;11)
- ❑ RUNX1/RUNXT1 (AML/ETO) t(8;21)
- ❑ CBFB/MYH11 Inv(16) or t(16;16)
- ❑ KIT (if positive for t(8:21) or Inv (16))
- ❑ PML/RARA t(15;17)
- ❑ CEBPA
- ❑ *FLT3 (ITD only)/*NPM1

***Only done on samples with a normal karyotype, please include a cytogenetics report if done elsewhere**

Bone marrow/Stem cell transplant monitoring:
- ❑ 15 STRs and amelogenin XY loci

- Please provide donor and recipient Pre-BMT sample

Specify: Donor____ or Recipient: Pre BMT____ or Post BMT____

Lymphoma: attach corresponding pathology report if available
- ❑ B-cell Clonality
- ❑ T-cell Clonality
- ❑ MYD88

Other:
- ❑Mastocytosis: KIT (BM or involved tissue preferred)
- ❑JAK2 (Exon 12 + Exon 14 p.V617F) / CALR

For JAK2/CALR please Specify PV_____, ET____, MF_____ or MPN_____

- ❑ Hypereosinophilic syndrome (CEL: FIP1L1/PDGFRA)
- ❑ BRAF (p.V600E/K only) (Hairy cell leukemia, Langerhans cell histiocytosis, Erdheim-Chester)

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

Molecular Diagnostics Tests – Solid Tumour

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

Note: When multiple genes are tested, only clinically relevant variants will be reported.

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 also provide primary mutation if not tested at UHN**

Colorectal Adenocarcinoma
- ❑ Comprehensive Sequencing (NGS) (*BRAF, KRAS, NRAS, PIK3CA)*
- ❑ MSI - requires normal reference (normal tissue or blood)
- ❑ *MLH1* Methylation

Endometrial Carcinoma
- ❑ MSI - requires normal reference (normal tissue or blood)
- ❑ *MLH1 Methylation*

Gastrointestinal Stromal Tumour
- ❑ Comprehensive Sequencing (NGS) (*KIT, PDGFRA)*

Glioma
- ❑ *MGMT* methylation
- ❑ *IDH1/2* Sequencing

High Grade Serous Carcinoma (Somatic) (Ovarian/Tubal/Peritoneal)
- ❑ *BRCA1/2 Comprehensive Sequencing (NGS)*

NOTE: EXTERNAL pathology review and circled H&E slide required prior to sending block – please contact the lab for info

Melanoma (Somatic)
- ❑ *BRAF* (p.V600E/K only)
- ❑ Comprehensive Sequencing (NGS) (*BAP1, BRAF, CDK4, CDK6, CDKN2A, EIF1AX, GNA11, GNAQ, HRAS, KIT, NRAS, SF3B1)*

Papillary Thyroid Carcinoma
- ❑ *BRAF* (p.V600E/K only)

Polymorphous Low Grade Adenocarcinoma (PLGA) Salivary gland
- ❑ *PRKD1 Sequencing*

Virus Detection
- ❑ HPV (DNA tissue testing-37 genotypes)

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Molecular Diagnostics Tests -Solid Tumour continued

Individual Solid Tumour Gene Testing available (FFPE and Cytology specimens only):
Note: Some gene testing may not be funded by Cancer Care Ontario/MOHLTC, please inquire with the lab

Disease/Tumour Type (Required) _____

❑ *AKT1*	❑ *EGFR*	❑ *HRAS*	❑ *PTEN*
❑ *APC*	❑ *ERBB2*	❑ *KDR*	❑ *RAC1*
❑ *BAP1*	❑ *ERBB3*	❑ *KIT*	❑ *RAF1*
❑ *BRAF*	❑ *ERBB4*	❑ *KRAS*	❑ *RICTOR*
❑ *CCND1*	❑ *ERCC2*	❑ *MEK/MAP2K1*	❑ *RET*
❑ *CDK4*	❑ *ERCC5*	❑ *MET*	❑ *SF3B1*
❑ *CDK6*	❑ *FOXL2*	❑ *MTOR*	❑ *TP53*
❑ *CDKN2A*	❑ *GNA11*	❑ *NF1*	❑ *TYRP1*
❑ *CDKN2B*	❑ *GNAQ*	❑ *NRAS*	❑ *XPC*
❑ *CTNNB1*	❑ *GRIN2A*	❑ *PDGFRA*	
❑ *DDB2*	❑ *HGF*	❑ *PDGFRB*	
❑ *EIF1AX*	❑ *HOXD8*	❑ *PIK3CA*	