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

Toronto General Hospital
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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):
Sex:
Health Card #:
Hospital #:

Instructions:

THIS REQ IS FOR SOMATIC SOLID TUMOUR TESTING ONLY – see link at bottom of page for HEREDITARY and MALIGNANT HEMATOLOGY requisitions

1. Complete all information as requested
2. Send requisition with specimen to address above

If shipping, send same day or next day delivery
1. 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 circulating tumour only (cell free DNA) – 18 ml in **STRECK** tubes
☐ **Peripheral blood** - For Quantitative EBV – 5 ml in EDTA
☐ **Fresh/Fixed Cytology fluid:** as much as possible

Solid Tumour: Keep shipped PE material below 30°C
☐ **Tissue 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.

☐ **Cell Block or Paraffin Embedded Tissue (curls)** 5x10µm sections in a sterile Eppendorf tube
For Cytology specimens: Please provide ALL fixatives used:
_____

☐ **Fresh tissue**: 5mm^3 frozen or in 10 ml sterile medium at room temperature

Lymphoma: please attach corresponding pathology report

☐ ^B-cell Clonality
☐ ^T-cell Clonality
☐ ^MYD88
☐ CLL IGHV Somatic Hypermutation/TP53
(for patients requiring treatment only)

Other:

☐^**Identity Testing/Specimen Matching**
(15 STRs and Amelogenin XY loci):
-Please provide control specimen, specimen in question and details

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

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Genome Diagnostics Tests – Solid Tumour

Adrenal Cortical Carcinoma

☐ MLH1 Promotor Methylation **(For patients with IHC MMR deficiency, please include IHC results)**

Breast Cancer – Advanced/Metastatic

(For patients where PIK3CA directed therapy is being considered)

☐ Comprehensive Sequencing (NGS) - PIK3CA, ESR1

Colorectal and Small Bowel Carcinoma

☐ Comprehensive Sequencing (NGS) (BRAF, ERBB2, KRAS, NRAS, NRG1, NTRK1, NTRK2, NTRK3, PIK3CA, PTEN)

☐ MLH1 Promoter Methylation **(For patients with IHC MMR deficiency, please include IHC results)**

☐ ^MSI - Only performed for cases with equivocal IHC MMR results -requires normal reference (normal tissue or blood)

Endometrial Carcinoma (Invasive)

☐ Comprehensive Sequencing (NGS) (CTNNB1, KRAS, PIK3CA, POLE, PTEN, TP53)

☐ MLH1 Promotor Methylation **(For patients with IHC MMR deficiency, please include IHC results)**

☐ ^MSI – Only performed for cases with equivocal IHC MMR results - requires normal reference (normal tissue or peripheral blood)

Esophageal/Gastroesophageal Adenocarcinoma

☐ MLH1 Promotor Methylation **(For patients with IHC MMR deficiency, please include IHC results)**

Gastric Adenocarcinoma

☐ MLH1 Promotor Methylation **(For patients with IHC MMR deficiency, please include IHC results)**

Gastrointestinal Stromal Tumour

☐ ^Comprehensive Sequencing (NGS) (KIT, NTRK1, NTRK2, NTRK3, PDGFRA)

Glioma

☐ MGMT Promotor Methylation

☐ Comprehensive Sequencing (NGS) (ALK, ATRX, BRAF, CDK4, CDK6, CDKN2A, CTNNB1, EGFR, ERBB2, FGFR1, FGFR2, FGFR3, H3F3A, HIST1H3B, HRAS, IDH1, IDH2, KRAS, MDM4, MET, MYB, MYBL1, MYC, NF1, NRAS, NRG1, NTRK1, NTRK2, NTRK3, PDGFRA, PIK3CA, POLE, PTEN, RAF1, RB1, TERT Promoter, TP53)

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Genome Diagnostics Tests – Solid Tumour

Lung Adenocarcinoma

☐ Comprehensive Sequencing (NGS)
(ALK, BRAF, CTNNB1, EGFR, ERBB2, FGFR1, KRAS, MET, NRG1, NTRK1, NTRK2, NTRK3, PIK3CA, RB1, RET, ROS1, SMARCA4, STK11, TP53)

Note - all requests for Lung Comprehensive Sequencing will also have PD-L1 by IHC performed.

If PD-L1 testing has already been performed and/or is not required – please indicate by checking here ____.

☐ EGFR – p.T790M mutation only (solid tumour/cell block or cytology fluid)

☐ **^***EGFR – p.T790M mutation only (Circulating tumour DNA in blood) ***peripheral blood in STRECK tube required (see pg. 1 for specimen requirements)**

Melanoma

☐ **Cutaneous** - Comprehensive Sequencing (NGS)
(ALK, BAP1, BRAF, CCND1, CDK4, CDK6, CDKN2A, EIF1AX, ETV6, GNA11 , GNAQ, HRAS, KIT, MAML2, MAP3K3, MAP3K8, MET, MYB, NF1, NFIB, NRAS, NTRK1, NTRK2, NTRK3, NUTM1, SF3B1, TRIM11, RET, ROS, YAP1)

☐ **Uveal** - Comprehensive Sequencing (NGS)
(ALK, BAP1, BRAF, CCND1, CDK4, CDK6, CDKN2A, EIF1AX, GNA11, GNAQ, HRAS, KIT, NF1, NRAS, NTRK1, NTRK2, NTRK3, MBD4, PRKCA, PRKCB, PRKCD, PRKCE, PRKCG, PRKCH, PRKCI, PRKCQ, PRKCZ, SF3B1)

Nasopharyngeal Carcinoma

☐ ^ Quantitative EBV detection from blood plasma

Ovarian Carcinoma

☐ **High Grade Epithelial Carcinoma (Ovarian/Fallopian/Peritoneal)** - Comprehensive Sequencing (NGS) - (BRCA1, BRCA2)

☐ **Epithelial and low malignant potential ovarian tumours** - MLH1 Promotor Methylation **(For patients with IHC MMR deficiency, please include IHC results)**

☐ **Sex-Cord Stromal Tumour -** Comprehensive Sequencing (NGS) - (APC, BCOR, CTNNB1, DICER1, EPC1, FLI1, FOXL2, JAZF1, NCOA1, NCOA2, NCOA3, NUTM2A, NUTM2B, PHF1, STK11, SUZ12, VHL, YWHAE, ZC3H7B)

☐ **Small cell Carcinoma (Hypercalcemic type - SCCOHT) -** Comprehensive Sequencing (NGS) - (SMARCA4)

Pancreatic Carcinoma (Invasive)

☐ MLH1 Promotor Methylation **(For patients with IHC MMR deficiency, please include IHC results)**

Prostate Carcinoma – (Advanced/Metastatic)

☐ Comprehensive Sequencing (NGS) - ATM, BRCA1, BRCA2, MLH1, MSH2, MSH6, PALB2, PMS2

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Genome Diagnostics Tests – Solid Tumour

Polymorphous Low Grade Adenocarcinoma (PLGA) Salivary gland

☐ ^ Comprehensive Sequencing (NGS) - (NFIB, PLAG1, PRKD1, PRKD2, PRKD3, RET, SS18)

Sebaceous Carcinoma/Neoplasms (Skin or Ocular)

☐ MLH1 Promotor Methylation **(For patients with IHC MMR deficiency, please include IHC results)**

Thyroid Carcinoma

☐ **Metastatic Sporadic Medullary Thyroid Carcinoma** - Comprehensive Sequencing (NGS) (BRAF, HRAS, KRAS, NRAS, NTRK1, NTRK2, NTRK3, PPARG, RET, TERT Promoter)

☐ **Metastatic Follicular Cell-Derived Thyroid Carcinoma (including Anaplastic, Papillary, Follicular and poorly differentiated Thyroid Carcinoma)**- Comprehensive Sequencing (NGS) (BRAF, HRAS, KRAS, NRAS, NTRK1, NTRK2, NTRK3, PPARG, RET, TERT Promoter)

☐ **Anaplastic, Poorly differentiated, High Grade Differentiated (High Grade Papillary, High Grade Follicular, High Grade Oncocytic), or Iodide Refractory Differentiated Thyroid Carcinoma** - Comprehensive Sequencing (NGS) (BRAF, HRAS, KRAS, NRAS, NTRK1, NTRK2, NTRK3, PPARG, RET, TERT Promoter)

Urothelial/Urinary Tract Carcinoma (Advanced/Metastatic)

☐ Comprehensive Sequencing (NGS) – (FGFR1, FGFR2, FGFR3, FGFR4)

Solid Tumour NGS Panel Testing

Important – EXTERNAL pathology review required prior to sending material for this assay

REQUIRED - Tumour Cellularity within circled area_____%

Circled H&E slide required prior to sending block. (Please send a recut as slide will be retained by UHN).

Tumour cellularity must be a minimum of 20% tumour within circled area. Please circle a ~3mm area to be cored from block. If a block cannot be sent, please send sections (see page 1).

☐ ^Comprehensive Sequencing (NGS) – For a complete list of genes available please contact the lab

Disease site:_____

Gene(s) requested:_____

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A Pathology 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/Reason for Referral:** _____

☐ **Follow up testing (reason):** _____

☐ **Other:** _____

Cytogenetics Specimen Requirements – Fluorescence *in situ* Hybridization (FISH):

☐ **Paraffin-Embedded Tissue Block**
- H&E slide, with area for FISH circled (slide will not be returned)

☐ **Unstained slides (FFPE)**
- Cut **three (3) unstained sections** per probe at 4 µm thickness on positively charged slides

☐ **Cytology Specimens**
- Air-dried smear/touch prep (1-2 per test)
- Cytospin slide (1-2 per test)
- Please indicate fixative(s) used

General Considerations for sending FFPE Tissues
- For all tissues we require **an H&E** slide, cut one level above or below the slides sent for testing with tumour area of interest **circled** where FISH is to be performed (slide will not be returned)*.
- Copy of pathology report is required
- **Air dry** unstained sections at room temperature
- **(DO NOT BAKE)**

Lymphoid Disorders:

Large B-Cell Lymphoma Panel
☐ ^Reflex Panel (BCL2 and BCL6 only when MYC Positive)

Burkitt Lymphoma
☐ ^MYC ONLY

Follicular lymphoma / Diffuse Large B-Cell Lymphoma
☐ ^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)

Solid Tumour:

HER2 Amplification (indicate tumour primary)
☐ Breast
☐ Gastric
☐ Endometrial

Brain Cancer: Gliomas
☐ 1p/19q + CDKN2A FISH (IDH Mut)
☐ EGFR + PTEN FISH (IDH WT)

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

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For all cytogenetics inquiries please contact cancercytogenetics@uhn.ca