

KCH Tissue Science User Handbook

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Contents

1.	Introduction	3
1.1	Purpose and Scope	3
1.2	Responsibilities – N/A	3
1.3	Definitions - N/A	3
2.	Health and Safety – N/A	3
3.	Tissue Sciences Department	3
3.1	Core Histopathology Laboratory	3
3.2	Frozen sections.....	4
3.3	Renal histopathology	4
4.	Contact Us.....	4
4.1	Contact Address.....	4
4.2	Contact and Enquiries.....	5
4.3	Hours of Opening	5
4.4	Clinical Staff Contact Details.....	5
4.5	Section Leads	6
4.6	Complaints.....	7
4.7	Protection of Patient Information	7
5.	Histopathology Information	8
5.1	Stock Specimen Containers	8
5.2	Hazards	9
5.3	Special Fixatives	9
5.4	Renal Biopsies	9
5.5	Fresh/Unfixed Tissue	9
5.6	Products of conception/ectopic pregnancy samples.....	9
5.7	External Blocks and Slides.....	11
5.8	Cancer Pathway Requests	11
5.9	Request Forms and Labelling	11
5.10	Histology Turnaround Times (TATs).....	12
5.11	Retention of formalin fixed specimens	13
5.12	Specimen deliveries to the laboratory	13
6.	Other Specialist Services	13
6.1	Advanced Diagnostics.....	13
7.	References	17
8.	Referral services	17
	The referral labs used by KCH are:.....	17
9.	Appendices – N/A.....	18

1. Introduction

1.1 Purpose and Scope

This purpose of this document is to act as guide to services user from the Tissue Sciences department based at King's College Hospital. The information within this document can be used by any staff member that require histological investigation of tissues.

1.2 Responsibilities – N/A

1.3 Definitions - N/A

2. Health and Safety – N/A

3. Tissue Sciences Department

The Synnovis Analytics Cellular Pathology laboratory is a UKAS (United Kingdom Accreditation Service) accredited medical laboratory (No. 9075); accredited to ISO15189:2012 for the scope described in the UKAS Schedule of Accreditation which can be found on the UKAS web-site: <https://www.ukas.com/find-an-organisation/?q=SYNNOVIS> . At the time of writing, certain tests and services provided by the laboratory are not covered by the UKAS scope of accreditation. Users of the Cellular Pathology service should refer to the UKAS schedule of accreditation on the UKAS web-site, for a list of currently accredited tests.

3.1 Core Histopathology Laboratory

Histopathology is a core diagnostic pathology service that involves the study of tissue structures in disease process and plays a major role in cancer diagnosis and patient management.

All investigative tissue samples from theatre operations, clinics and various other internal and external sources are sent to the department for diagnosis. We process tissue taken from patient's surgical tissue during operations or biopsies from investigatory procedures. We receive tissue samples (either as a wet specimen or as blocks/slides) into our main processing area and conduct microscopic analysis. We then either produce a report or send the sample to the Advanced Diagnostics laboratory for further tests.

Areas of expertise include:

- Surgical Pathology and its Specialties
- Breast Pathology
- Dermatopathology
- Endocrine Pathology

- Gastrointestinal Pathology
- Genitourinary Pathology
- Gynaecological Pathology
- Haematopathology
- Respiratory pathology

The laboratory works in conjunction with Liver Studies (KCH), Cytology and also Renal and Endocrine pathology at St. Thomas' Hospital, and Head and Neck/Oral Pathology (head & neck and maxillo-facial samples) at Guy's Hospital.

3.2 Frozen sections

In addition to processing fixed tissue, the department offers a frozen section service at KCH, incorporating receipt of fresh tissue for diagnostic purposes, enzyme histochemistry, clinical trials and tissue banking.

In addition the department also supports the Moh's Clinic with the dermatology department located in the Unit 6, KCH Business Park, Denmark Hill.

3.2.1 Immunocytochemistry and molecular pathology

Advanced Diagnostics is a section within the Histopathology department which, offers immunocytochemistry, immunofluorescence, chromogenic and fluorescent in-situ hybridisation and molecular testing.

The laboratory is a referral centre for Her-2 and molecular testing.

The laboratory offers B and T cell rearrangement, microsatellite instability (MSI) and cancer gene panel by Next Generation Sequencing.

Please refer to section 6.0 for more details.

3.3 Renal histopathology

This department facilitates the receipt and specimen transfer of renal sample to St Thomas' Hospital for diagnostic reporting.

4. Contact Us

The Histopathology department is located on second floor of the Bessemer Wing, Bessemer Road, King's College Hospital.

4.1 Contact Address

Department of Histopathology
2nd Floor, Bessemer Wing

King's College Hospital
Denmark Hill
London
SE5 9RS

4.2 Contact and Enquiries

Histology Enquiries:

Tel: 020 3299 3045

Fax: 020 3299 3670

Email: kch-tr.histopathologyoffice@nhs.net

If you are calling for clinical advice and interpretation of the histopathology report, the secretarial staff will put you through to the Consultant Pathologist reporting the case you require.

4.3 Hours of Opening

The department is open from 08:00 – 17:30, Monday to Friday (except bank holidays). An on call service is provided over the weekend and bank holidays. This service is limited and only available 09:00-17:00. Please contact the switchboard to be transferred to the on call consultant during these times.

4.4 Clinical Staff Contact Details

4.4.1 Acting Clinical Lead for Histopathology laboratory (Laboratory Director)

Dr Mojisola Giwa: mgiwa@nhs.net ext 31742

4.4.2 Acting Clinical Lead for Histopathology laboratory

Dr Olivia McKinney ext 31412

4.4.3 Cytology Clinical Lead

Dr Mark Howard: mark.howard7@nhs.net ext 36169

4.4.4 Acting Molecular Clinical lead

Dr Jeanne Boissiere: jeanneboissiere@nhs.net ext 36732

4.4.5 Acting Clinical Lead for Histopathology

Dr Chirag Shah: chirag.shah@nhs.net ext 33758

4.4.6 Consultants and Specialities

Consultants	Speciality	Extension
Dr Abdel Selim	Gynaecology, Dermatology, Cytology	33605
Dr Abishek Dashora	Haematology	31967
Dr Afsheen Wasif	Breast, Dermatology, Cytology, Gastrointestinal	33531
Dr Chirag Shah	Urology, Haematology, Breast	33758
Dr Claudia Mestre	Breast, Liver Studies	32672
Dr Hizbullah Shaikh	Gynaecology, Cytology, Gastrointestinal, Respiratory	
Dr Hong Li	Breast, Gastrointestinal, Gynaecology	
Dr Jeanne Boissiere	Dermatology, Gynaecology, Urology	36732
Dr Jon Salisbury	Dermatology, Haematology, Orthopedic	33093
Kalnisha Naidoo	Breast, Cytology	33041
Dr Liron Barea Slonim	Haematology	37836
Dr Marianna Philippidou	Dermatology, Urology	33515
Dr Mark Howard	Gastrointestinal, Endocrine, Cytology	36169
Dr Mihir Khan	Gastrointestinal, Gynaecology	31742
Dr Mojisola Giwa	Gastrointestinal, Respiratory, Gynaecology, Urology	31742
Dr Nuzhat Akbar	Breast, Gastrointestinal, Cytology	
Dr Olivia McKinney	Breast, Gynaecology, Respiratory, Cytology	31412

4.5 Section Leads

4.5.1 Service Delivery Manager

Khadijah Owusu-Ansah: khadijah.owusu-ansah@nhs.net Ext: 33042

4.5.2 Operations Managers

Core Histology: Getnet Demissie: getnet.demissie@nhs.net Ext: 33043

Advanced Diagnostics: Coralie Pennaneac'h: coralie.pennaneac'h@nhs.net
Ext: 33091

Liver Histology: James Croud: james.croud@nhs.net Ext: 36345

4.5.3 Senior Quality Manager

Michael Makele: michael.makele@nhs.net Ext: 34671

4.5.4 Quality Manager

Janet Okafor: janet.okafor@nhs.net Ext: 34610

4.5.5 Training Officers

Core Histology:

- Jane Seaton: jane.seaton@nhs.net Ext: 33266

Advanced Diagnostics:

- Coralie Pennaneac'h: coralie.pennaneac'h@nhs.net Ext: 33091

4.5.6 Health and Safety Officers

- Core Histology: Getnet Demissie getnet.demissie@nhs.net
Ext: 33043
- Arya Pillai: arya.pillai@nhs.net Ext: 33266

Advance Diagnostics:

- Sharon D'Costa: sharon.dcosta@nhs.net Ext: 34168

4.6 Complaints

Complaints may be made directly to the department, via PALS or via Synnovis Customer Support. Complaints are handled according to the Synnovis Complaints Policy and Procedure located at <http://www.synnovis.co.uk/customer-service>.

4.7 Protection of Patient Information

All patient information is handled under the terms of the Data Protection Act 2018. All personal information received by Synnovis is dealt with according

to the Synnovis Privacy, Data Protection & Cookie Policy which is available at <http://www.synnovis.co.uk/privacy-policy>

5. Histopathology Information

Prompt fixation is fundamental to good histological technique. In difficult or unusual cases, any query concerning correct tissue preparation should be directed to the Core Laboratory by telephoning KCH Ext: 33266.

Histological specimens are routinely fixed in 10% neutral buffered formalin (10% formal saline), and specimen containers with fixative are provided from the department of Histopathology (ring KCH Ext: 33266 before 5:00pm as the department closes at 5:30pm).

Exceptions, where unfixed tissue must be brought promptly to the laboratory include:

- Frozen sections (except any case known to be or suspected of being an infection risk), which should be pre-booked - for more information please refer to the 'Frozen Section' information.
- Renal biopsies
- Lymph nodes (except any case known to be or suspected of being an infection risk)
- Needle localisation biopsies of breast
- Foetuses and placentae for histological examination
- Bone biopsies (when metabolic disease is suspected)
- Where tissue from gross specimens is required for non-histological investigations
- Muscle and nerve biopsies are dealt with in the Department of Clinical Neuropathology (KCH Ext: 31957).

Specimens must not be squashed into containers inadequate for their size and should be covered by at least 10 to 20 times their volume with fixative.

Histopathology specimens contained in 10% formal saline should be stored at ambient temperatures (between 15°C - 25°C) prior to delivery of the sample to the Histopathology department, these samples should never be refrigerated as this will severely reduce the rate of fixation and preservation by formaldehyde, this will then reduce the morphological quality of the sample.

5.1 Stock Specimen Containers

New stocks of pre-filled 60ml formalin pots can be obtained from Cellular Pathology Specimen Reception. All other size specimen pots/containers can be supplied by prior arrangement within normal working hours. Any containers that the department prefill with formalin will carry a specimen

label and hazard sign. During out of hours, weekend, and bank holiday please contact the Porter service as an emergency supply may be obtained.

Specimen Reception Ext: **34038**

5.2 Hazards

Formalin is a hazardous substance and care is to be taken when in use. **Formalin** is a clear fluid with a pungent toxic vapour. Formalin pots must be checked for leakage and expiry date; also, handle carefully using gloved hands. If pots are beyond their expiry date, return to Histopathology for disposal. Beware of spills and inhaling vapour, as formaldehyde is a toxic agent that may cause mild to severe irritation of skin and mucous membranes. Wear gloves when opening a specimen pot, tighten the lid when closing, and place the labelled specimen pot into a plastic pathology specimen bag. Wash off any spills with copious amounts of water. In the event of a formalin spillage, wipe it immediately with a De-Formalizer pad; wash the affected area with water and wash your hands.

5.3 Special Fixatives

Michel's fluid is used for IMF samples please see section 6.0 for more information.

5.4 Renal Biopsies

Renal biopsies must be collected on gauze moistened with saline solution for routine Histology.

5.5 Fresh/Unfixed Tissue

Fresh/unfixed tissues samples that are sent due to clinical requirement or for rapid diagnosis must be transported **immediately** to the laboratory in a closed labelled container and handed to a member of laboratory staff these include frozen sections and enzyme histochemistry. **All these sample types should be pre-booked with the laboratory** at least 24 hours in advance (KCH) 33266 or 34038) to guarantee availability of staff/facilities.

5.6 Products of conception/ectopic pregnancy samples

Products of conception/ectopic pregnancy samples that are sent to Histopathology department for histological examination must be accompanied with a completed hospital request form and completed consent forms titled 'Authorisation for Treatment of Pregnancy Remains'

Specimens that should be pre-booked (24 hours' notice)

Type of specimen	How to be received	Who needs to be contacted
Rapid Frozen section	Unfixed (dry pot) URGENT	Inform the laboratory 24 hours prior Ext 33266
Rectal suction Biopsies (for Hirschsprung's)	Unfixed (dry pot) URGENT	Inform the laboratory 24 hours prior Ext 33266

To make a booking contact the Histopathology on Ext: 33266 and please include:

- Patient details,
- The estimated time/ date of frozen section,
- Intra-operative/Non intra-operative
- Theatre details,
- Contact names/number

It is important that full clinical information is provided with each case that must be brought unfixed to the department immediately after resection.

In the event of cancellation please notify the department.

Any biohazard should be indicated on the card and specimen. Any indication of infection type would be advantageous.

As there are no separate containment facilities for the handling of unfixed 'high-risk' tissue (e.g. TB, HIV, HBsAg), a frozen section service cannot be provided on these cases.

Any fresh placenta sample that does not come to the Histopathology department directly must be refrigerated before transport to the department.

5.6.1 Unfixed samples not for Histopathology

Placentas from babies that require a post-mortem examination should be sent unfixed to the KCH Mortuary - Ext: 33504/35928

For chromosomal investigations please contact the Synnovis Analytics Cytogenetics laboratory – 0207 188 1715.

Muscle and Nerve biopsies – samples to be sent to Enzyme Histochemistry at KCH Ext: 31957

5.7 External Blocks and Slides

Patient material sent for MDM review or second opinion are received into the department and allocated to a reporting consultant according to the speciality. When sending the material to the department use a traceable delivery system, with the blocks and slides securely packaged, to prevent loss/damage occurring. Refer to packaging instruct P650 for advice. The temperature of the material sent should be maintained at ambient temperature (15-25°C).

The laboratory must be informed upon delivery if any samples have been compromised (for example subjected to temperatures outside the stated range or in an event the safety of the carrier or the general public has been jeopardised).

5.8 Cancer Pathway Requests

When requesting Histology on patients that are on a cancer pathway, select 'Urgent' or '2WW' when submitting a request form.

5.9 Request Forms and Labelling

Each specimen should be labelled with the patient's name, date of birth, anatomical site and nature of tissue. It should have an accompanying purple request form (SF 185) or EPR form, where the details are written legibly (avoid the use of felt tip pen). These forms may be sourced via the EPR system, intranet or by contacting the laboratory directly on KCH Ext: 34038, or in person.

The request form must have the following details stated:

- **Patient name**
- **Gender**
- **Date of birth**
- **Hospital number** (If sending samples from external sources such as GP surgeries, a hospital number need only be provided if it is known)
- **Type of sample** (nature of tissue) and anatomical site of origin
- **Examination requested**
- **Consultant / clinician / healthcare provider**
- **Ward / clinic / patient location**
- **Date and time of sample collection**
- **Clinically relevant information** (required for examination performance and result interpretation purposes)

Please note: **The laboratory can accept request forms in various formats.** Please contact the laboratory if you are unsure of the correct format for use. If necessary, the laboratory is willing to cooperate with users in order

to clarify a request. The laboratory is able to provide confirmation of sample receipt.

For specimens to be accepted by laboratory staff all details on the specimen pot must match those on the request form, including the nature of specimen.

The sender will be contacted when histology samples are received without an appropriate request form. Testing will be delayed until a form is received in the laboratory. This will be logged as an incident where testing is delayed and patient care has been compromised on to the Trust Datix Electronic IR1 form.

5.9.1 Specimen Labels

Fill in the specimen pot details using **a ballpoint pen or permanent marker**, not a fibre-tip pen where the ink will run should a spill occur.

All details should be filled, and where more than one specimen is taken, pot numbers and specimen information should match the details on the request card. At least two forms of personal ID must match, full name, and date of birth (and/or hospital number) together with the nature of specimen. **A discrepancy will result in a delay in processing and could impact on patient management.**

5.10 Histology Turnaround Times (TATs)

Diagnostic biopsy specimens TAT target is 7 calendar days from date of biopsy to the authorised report being available to the requestor (R.C. Path Key Performance Indicators 2013). Examples of diagnostic biopsies include needle core biopsies, endometrial biopsies/currettings, endoscopic biopsies, colposcopic biopsies and punch biopsies. Samples which require decalcification or additional tests (such as special stains and Immunohistochemistry) will take longer to report.

General Histology specimens TAT target is 10 calendar days from date of specimen collection to the authorised report being available to the requestor (R.C. Path Key Performance Indicators 2013). Examples include major cancer resections, integrated reporting of haematological malignancies, and benign therapeutic resections. Samples which require decalcification or additional tests (such as special stains and Immunohistochemistry) will take longer to report.

Molecular tests are excluded from this indicator but should have documented and agreed pathways with specified and monitored turnaround time.

5.11 Retention of formalin fixed specimens

Formalin fixed specimens are only retained in the laboratory for six weeks following verification of the report, unless otherwise requested by the clinician at the time of the original request for Histopathology, or by the reporting Consultant Pathologist. In both cases, a reason must be specified for retention of the tissue beyond the six weeks post-authorisation period.

5.12 Specimen deliveries to the laboratory

Specimens that arrive in the department with a tracking log will be signed for by laboratory staff providing the sample meets the acceptance criteria. Any discrepancies will be either returned or held pending resolution.

The laboratory must be informed upon delivery if any samples have been compromised (for e.g. subjected to temperatures outside the stated range) or in an event where safety of the carrier or the general public has been jeopardised. The laboratory will action the issue by contact the sender to resolve or eliminate recurrence.

Clearly mark all urgent specimens and any known biohazard such as HIV positive specimens.

Portering staff will collect specimens from designated sites and deliver directly to Tissue Sciences or to the Pathology Central Specimen Reception (CSR). Specimens received in CSR are sorted and delivered to Cellular Pathology immediately. Specimens may be delivered directly to the department.

Routine **out of hours** (17.30-08.00) specimens should be delivered to CSR, or left in formalin at a collection point for the next morning collection.

Specimens that are infectious should be **clearly labelled** with '**Danger of Infection**' stickers on the kangaroo bag, on the specimen and on the request form. Fixed specimens can be brought direct to the Histopathology laboratory. Fresh tissue with a known infection risk should be placed in formalin fixative before being sent to the laboratory.

6. Other Specialist Services

6.1 Advanced Diagnostics

Advanced Diagnostics is a section within the Histopathology department which, offers immunocytochemistry, immunofluorescence, chromogenic and fluorescent in-situ hybridisation and molecular testing.

The laboratory is a referral centre for Her-2 and molecular testing.

The laboratory offers B and T cell rearrangement, microsatellite instability (MSI) and cancer gene panel by Next Generation Sequencing.

6.1.1 Contact Us

The laboratory is located on the second floor of the Bessemer Wing, King's College Hospital.

6.1.2 Result Enquiries

Histology Office Tel 02032994033

Email: kch-tr.histopathologyoffice@nhs.net

6.1.3 Technical Enquiries

AD lab Tel 02032994168

Email: kch-tr.advanced-diagnostics@nhs.net

6.1.4 Request forms

Advanced Diagnostics request forms include:

- Molecular Test Request Form – LAD11

Tick test required NGS (KRAS, NRAS, BRAF, EGFR), MSI, MMR, IGH/TCR gene rearrangement, FISH (MYC, BCL2, BCL6, MALT, CCDN1, ALK)

- HER2 Request Form – LFAD12
- Immunohistochemistry Request Form – LFAD54

Specify required antibody/antibodies.

Important: Specimen decalcification in acid solution are not recommended or validated for molecular testing and may generate invalid results. Please only provide specimen decalcified in EDTA solution.

All request forms must be fully completed with Patient Identifiers and patient clinical details, requester details, date/time sample sent and test(s) required.

Sample requirements are listed on the request forms.

Incomplete request forms or discrepancies may result in delay in processing the request.

The requestor will be contacted to provide any missing information or correct errors or discrepancies.

6.1.5 Sample Information

Samples sent to Advanced Diagnostics include FFPE blocks and slides.

The laboratory also receive peripheral blood, bone marrow aspirate and cerebro spinal fluids.

Specimen Type	Volume	Fixative	Container	Shipping Temperature	Storage Temperature
FFPE block/slide	Representative block/slides of tumour (and normal tissue)	N/A	Slide box	Ambient – 15°C to 25 °C	Ambient
Peripheral Blood	5cc	EDTA	Vacutainer	Ambient – 15°C to 25 °C	2°C-8°C
Bone Marrow Aspirate	5cc	EDTA	Vacutainer	Ambient – 15°C to 25 °C	2°C-8°C
Cerebro Spinal Fluid	5cc	N/A	25 ml Sterile Universal Tube	Ambient – 15°C to 25 °C	2°C-8°C
Genomic DNA	10-400ng/ul	N/A	Eppendorf/nunc tubes	Ambient – 15°C to 25 °C	2°C-8°C

6.1.6 Sample requirements

Test	Sample	Volume
KRAS, NRAS, BRAF, EGFR, MSI, MMR,	Histology report	N/A
	FFPE block or	1 representative tumour block + 1 normal (MSI only)
	FFPE slides	10 microns unstained sections on uncoated slides for DNA extraction 1 x 4 microns unstained section for H&E staining
Clonality	Histology report	N/A
	FFPE block or	1 representative tumour block + 1 normal (MSI only)
	FFPE slides	10 microns unstained sections on uncoated slides for DNA extraction 1 x 4 microns unstained section for H&E staining
	Peripheral Blood, Bone Marrow Aspirate	5cc in EDTA
	CSF	5cc in 25ml Sterile Universal containers
	Histology report	N/A

FISH (MYC, BCL2, BCL6, MALT, CCDN1, ALK)	FFPE block	1 x representative block
	FFPE slides	2 x 2 microns unstained section on coated slides and 1 x 4 microns unstained section for H&E staining
HER2 ICC (and HERFISH)	FFPE block or	1 representative block
	FFPE slides	4 x 3 microns unstained section on coated slides
	H&E	One H&E stained reference slide
Immunohistochemistry	FFPE block or	1 representative block
	FFPE slides	3 x unstained sections per IHC request on coated slides, at 4 micron thickness
Immunofluorescence for skin samples	Fresh Tissue	Michel's Medium (This is provided by the department please contact us for stock).

6.1.7 Turnaround Times

Test	TAT
Immunohistochemistry	2/3 days
HER2 + breast receptors (ER, PR, Ki67)	Up to 14 days
FISH	14 days
Molecular	14 days

6.1.8 Results

Upon authorisation, histology reports are available on EPR, HMD-S and Synnovis Results Online (www.synnovis.co.uk/results). In cases where requesters do not have access to EPR or Results Online, electronic copies of reports are emailed to secure nhs.net email addresses only.

6.1.9 Specimen Delivery

Deliveries to AD can be made to Synnovis Central Reception or preferably directly to the department to avoid delays in processing. Samples are date stamped immediately upon receipt and booked into the department LIMS system.

Peripheral blood, bone marrow aspirate and CSF fluids must be delivered to the laboratory without delay following collection of the specimen. Failure to deliver the specimen in a timely manner may result in loss of specimen viability and generate invalid results.

Cerebro spinal fluid specimen should be processed immediately upon receipt due to their fragile nature, therefore delivery should be made no later than 4:30 pm on a working day.

7. References

- European Committee for Standardization. Medical Laboratories – Requirements for quality & competence (ISO 15189:2012). Clause 5.4.2. October 2012.
- Reference RCPATH retention documentation.

8. Referral services

The referral labs used by KCH are:

Reference lab	Contact	Tests
St Thomas' Hospital Histopathology Lab Westminster Bridge road London SE1 7EH	Toby Hunt Toby.Hunt@synnovis.co.uk 020 7188 7188 Ext: 54659	Renals Immunohistochemistry (various antibodies) Endocrine cases ACE Non-Gynae Cytology
Guys Hospital Cancer Specialist Diagnostic Services Great Maze Pond London SE1 9RT	Michael Neat m.neat@nhs.net Nicola Foot Nicola.foot@gstt.nhs.uk	FISH (on a contingency basis) NTRK: ETV6-NTRK3 fusion
St Johns Dermatopathology St Thomas' Hospital Westminster Bridge Road London SE1 7EH	Dr Guy Orchard Guy.Orhcard@gstt.nhs.uk 0207 188 6327	Immunohistochemistry (various antibodies)
Head & Neck Pathology St Thomas' Hospital Westminster Bridge Road London SE1 7EH	Toby Hunt Toby.Hunt@synnovis.co.uk 020 7188 7188 Ext: 54659	Immunohistochemistry (various antibodies) Oral cases
Institute of Liver Studies King's College Hospital London SE5 9RS	James Croud 02032992237 James.croud@nhs.net	Immunochemistry (Hep Par1).
Neuropathology Lab King's College Hospital London SE5 9RS	General enquiries: (0)203 299 1951 Lawrence.doey@nhs.net	Immunohistochemistry (Toxoplasmosis Ab)
HSL Advanced Diagnostics 60 Whitfield Street London W1T 4EU	David Allen Tel: +44 (0)20 3912 0280 Fax: +44 (0)20 3912 0288 E-Mail: david.allen@hslpathology.com Website: www.hsl-ad.com	Immunochemistry (various antibodies) FISH
Genomic Health Inc 301 Penobscot drive Redwood City	Customer service: 02030318087	Oncotype DX

CA US		
Cyted UK Ltd 2 Falcon Road Hinchbrook Business Park Huntingdon PE29 6FG	Vicky Edwards 07917691556 Vicky.edwards@cyted.ai Website: www.cyted.ai	Specimen Reporting
Molecular Pathology Department Clinical Laboratory Services Queen Elizabeth Hospital Mindelsohn Way Edgbaston Birmingham B15 2WB	Dr Philippe Taniere Helen Stokes Tel: +44 (0) 121 371 3343 E-Mail: helen.stokes@uhb.nhs.uk Website: http://www.uhb.nhs.uk	C-Kit/PDGFR
Department of Haematological Medicine Ground Floor Bessemer Wing King's College Hospital Denmark Hill London SE5 9RS United Kingdom	Service Delivery Manager Reference Haematology Department of Haematology and Blood transfusion Kings College Hospital Denmark Hill London SE5 9RS 020 3299 2455 (ext 32455 internal only) chris.lambert@nhs.net	ABI AmpFLSTR kit multiplexed PCR reaction. Products analysed using Applied Biosystems 3130xl Genetic Analyser. DNA extraction (PB/BMA)
RMH Surrey The Royal Marsden Cancer Diagnosis Centre for Molecular Pathology The Royal Marsden NHS Foundation Trust Cotswold Road, Sutton Surrey SM2 5NG	rmh- tr.moleculardiagnosics@nhs.net cytogenetics@icr.ac. uk 0208 915 6565	FOXL2 targeted sequencing MET exon 4 skipping mutation
Poundbury Cancer Institute Newborough House 3 Queen Mother Square Poundbury, Dorchester Dorset DT1 3BJ	Dr Corrado D'Arrigo lab@histo.org <i>Tel: 01305 756485</i>	PD-L1 for Triple Negative Breast Cancer

9. Appendices – N/A