

USER GUIDE

1. PURPOSE

The information contained in this User Guide has been developed in conjunction with our users in order to not just meet their needs and requirements but also includes appropriate advisory and interpretative services. This booklet provides detailed information about the diagnostic Eye Pathology service within the UCL Institute of Ophthalmology and we hope that it will enable you to make the most efficient use of the service. If you have any questions or require information about the service provided, please contact the laboratory directly and ask for advice from a Pathologist or one of the Biomedical Scientists as appropriate. Alternatively email your questions to pathadmin.ioo@ucl.ac.uk

The EyePath website (<https://eyepath.ucl.ac.uk/>) is an excellent resource for Pathology information. The website provides up to date news, sample requirements and TATs, contact details and frequently asked questions. Information which may benefit users, such as deviations from normal practice, down-time and matters which may impact on examination results are presented here.

2. DEPARTMENT OVERVIEW

The Department of Eye Pathology (DEP) in the UCL Institute of Ophthalmology provides a diagnostic service in ophthalmic histopathology and cytopathology. It is one of 4 laboratories within England making up the National Specialist Ophthalmic Pathology Service (NSOPS).

NSOPS laboratories are commissioned centrally by the NHS and are designated Highly Specialised Services. This means that qualifying NHS samples from patients within England, submitted to NSOPS laboratories for examination, are reported without charge to the referring clinician or organisation.

This DEP offers the largest ophthalmic pathology service within the UK and deals with around 3500 diagnostic specimens per annum. We aim to provide a high quality and timely service with provision of expertise in diagnosis by using an appropriate range of techniques including histology, histochemistry and immunocytochemistry.

The DEP has three Consultant Histopathologists (one full-time committed to diagnostic service and 2 part-time with other responsibilities (1.9 WTE)), two Senior Biomedical Scientists working under a Laboratory Manager plus clerical staff.

The DEP is committed to the safe and secure handling, storage and disposal of confidential information and accurately reporting results of investigations in a timely, confidential and clinically useful manner.

Material may be submitted elsewhere for expert opinion or for techniques not performed within the department, such as PCR studies (please see Appendix 1 for a list of referral centres). Extra tests like PCR are not covered by the commissioning arrangement and will be charged to the referring clinician. When these additional onward referrals are needed, only clinically relevant information will be shared with the destination department.

The department does not arrange or provide the following diagnostic laboratory services: microbiology, virology, immunology, haematology, biochemistry, immunofluorescence (including for Mucous Membrane Pemphigoid studies) or advice on control of infection.

USER GUIDE**3. CONTACT US**

The Department of Eye Pathology is situated on the first floor of the Cayton Street Building of the UCL Institute of Ophthalmology, Bath Street, London.

Postal address

For correspondence and for specimen deliveries:

Department of Eye Pathology.
UCL Institute of Ophthalmology,
11 - 43 Bath Street.
London. EC1V 9EL.
United Kingdom.

Laboratory Opening Times

Core Hours are 0900 – 1700 hours, Monday - Friday, excluding Public/Bank Holidays (England) and UCL closure days (<https://www.ucl.ac.uk/staff/term-dates>).

Additional notification of closure dates is published on <https://eyepath.ucl.ac.uk/>

NB: There is no out of hours or weekend service.

Key Contacts

Fax No: 0207 608 6862

Head of Department:

Professor Phil Luthert
Consultant Ophthalmic Pathologist
Tel: 0207 608 6818
Email: p.luthert@ucl.ac.uk

Clinical Enquiries:

Dr Caroline Thaug
Consultant Ophthalmic Pathologist
Tel: 0207 608 6890
Email: c.thaug@ucl.ac.uk

General Enquiries:

Clinical Administrator
Tel: 0207 608 6948
Fax: 0207 608 6862
Email: pathadmin.ioo@ucl.ac.uk

Technical Enquiries:

Mr David Essex
Laboratory Manager
Tel: 0207 608 6888
Email: d.essex@ucl.ac.uk

The DEP participates in an appropriate accreditation scheme, run through UKAS against ISO:15189. The Laboratory Manager also oversees the Quality Management System and any issues relating to that aspect of the DEP should be addressed to them in the first instance.

USER GUIDE

4. HISTOLOGY: INVESTIGATIONS AVAILABLE AND SPECIMEN REQUIREMENTS

Histopathological examination of biopsy material, either diagnostic or excisional, of any tissue from the eye or its adnexal structures is offered by the DEP. Histology is used to view cells and structures within the sample in a manner which represents them *in vivo* as much as possible. This allows definitive diagnosis of numerous disease states, which have ramifications for the patient downstream, with regards further treatment(s) and/or excision.

Guidance on which specimens should be submitted for examination may be found at:

<https://www.rcophth.ac.uk/wp-content/uploads/2016/07/Ocular-Pathology-July-2016.pdf>
<https://www.england.nhs.uk/wp-content/uploads/2013/06/d12-ophth-path-service-ad-child.pdf>

The choice of methodology and appropriateness of the investigation are at the discretion of the consultant pathologist who is guided by details on the clinical request form and knowledge of laboratory methods and current "best practice". A list of the tests which currently form our diagnostic repertoire is in Appendix 2.

Ophthalmologists are free to discuss the methods employed for any given specimen, but the final decision remains a remit of the clinical pathologist. Similarly, patient preparation is the remit of the Ophthalmologist, we ask that you notify us of anything specific which you may have done which may affect our ability to process and adequately report the samples which you send, such as fixation in solutions other than Neutral Buffered Formalin.

All samples should be sent in the appropriate manner, in a fully labelled, leak-proof container with a legibly completed request form. These must have at a minimum the identifiers we require to unequivocally identify the patient (at least three of the following: Name (given name and surname), Date of Birth, Hospital Number, NHS number, Age, Address (including postcode) and/or Gender). Additionally, we need to know the name and whereabouts of the clinician requesting the examination, whom the finalised, authorised, report will be despatched to. We need to know the type of sample and the anatomical site of origin which is particularly important with ophthalmic samples. Clinically relevant history on the patient is important to give context to the sample itself, as is the date of the sample being taken.

All samples being sent to the DEP should be sent in accordance with UN3373 (<http://www.un3373.com/info/regulations/>). We strongly recommend the use of recorded delivery, with specimen despatch/receipt or 'fax back' forms to ensure an appropriate custody trail.

Histopathology Specimen Requirements

ALL Histology specimens should be submitted in an appropriately sized leak-proof container containing 10% neutral buffered formalin, the standard fixative for histology samples, at least ten times the volume of the sample itself. These samples should be in pots clearly labelled with all patient identifiers and site of origin of the sample, with an accompanying fully completed request form, which should make mention of any and all samples submitted for investigation.

If for any reason a sample is to be submitted in a solution other than Formalin, please indicate the solution and reason for this clearly on the request form.

No extraneous materials such as swabs, needles, tissues or papers should be placed in the specimen pot.

USER GUIDE

Fast Paraffin Processing

In cases (usually eyelid tumour surgery) where a lesion is being excised, and subsequent reconstruction depends on knowledge of whether the margins are tumour free, a “fast paraffin” approach may be considered.

This service is labour-intensive and must be booked as far in advance as practical by telephoning **0207 608 6948** to ensure availability of both technical and consultant time on the required days. We cannot guarantee availability of both parties if we are not given appropriate notice, at the absolute minimum 24 hours.

When booking, all relevant patient information should be to hand, including the minimum patient identifiers, relevant clinical history, name and contact details of the requesting clinician/service and the dates of both initial and prospective reconstructive surgery.

These samples should be sent to the DEP as per standard histopathology specimens, in formalin at least ten times the volume of the sample itself. These samples should be in labelled pots, with an accompanying fully completed request form.

All samples generated within Moorfields Eye Hospital (MEH) should pass through Path Services for logging and dispatch to the DEP. It is worth noting that although the procedure may have been undertaken early in the day, if the sample is delayed in theatres before going to Path Services, or delayed at Path Services before going to the DEP, the efficiency of the fast paraffin service will be compromised.

Un-booked specimens for Fast Paraffin analysis may not be processed as expediently, leading to poor patient experience.

Unfixed Specimens

There is currently no reason to submit unfixed histology specimens to the DEP.

Fresh material may be of use in investigation of neoplasia by molecular diagnostic methods, but this must be arranged with an appropriate laboratory by the referring clinician. These fresh samples should not be sent to the DEP as they will be returned to sender with no investigations performed by us.

NB: In cases where sebaceous carcinoma is suspected, specimens should still be submitted in formalin.

Urgent Specimens

It should be indicated on the request form if the specimen requires urgent attention. The reason for the apparent urgency should be clearly explained.

It is recommended that specimens deemed to be urgent are received by the laboratory as early in the day as practicable, no later than 1500h.

A member of the laboratory staff should be informed prior to the dispatch of the specimen.

If a report is required by a particular date, this should be indicated on the request form. An attempt will be made to accommodate these requests, but a final report by said date cannot be guaranteed.

USER GUIDE

5. HISTOLOGICAL REVIEW

Cases which have been processed elsewhere about which a pathologist colleague wishes to receive a second opinion or have a case reviewed may be submitted to the DEP. In these instances we ask for the original slides, a copy of the report and all blocks for the case to be submitted together. Original material will be returned upon request when all investigations have been completed.

It is important that blocks are sent at the same time as slides to allow us to provide a timely service, rather than have to request blocks and await their arrival for any additional investigations.

Blocks and slides should be submitted with a cover letter on headed paper or a completed request form so that we are aware of where to send the report when authorised. The inclusion of a fax back or similar to confirm receipt of the samples is also encouraged.

6. CYTOLOGY: INVESTIGATIONS AVAILABLE AND SPECIMEN REQUIREMENTS

Cytology is the investigation of small samples of dispersed or dissociated cells and other tissue components devoid of natural tissue architecture.

Specimens for cytological investigations include surface impression cytology and cytology of fluid such as tears, aqueous, vitreous, or fluid from cystic lesions.

Cytological investigation provides a preliminary diagnostic and should not be regarded as providing a definitive diagnosis.

The practice of cytology is challenging and if there is uncertainty about its use in a particular case, it is preferable to discuss the case with the consultant pathologist prior to obtaining the specimen.

Cytology Specimen Requirements

Impression cytology drums should be submitted in a fully labelled pot containing formalin and with a fully completed request form, in a manner similar to histology specimens. We stain these with a dual Immunocytochemistry technique for both Cytokeratin 12 (for corneal epithelium) and Cytokeratin 19 (for conjunctival epithelium), allowing us to determine conjunctivalisation of the cornea.

Aspirates of fluids (e.g. vitreous) please inform the laboratory in advance (at least 1 working day) by telephoning 0207 608 6888 if a fluid cytology specimen is to be submitted. All samples should be received in fixative:

Anyone wishing to submit aqueous or vitreous specimens for cytopathology should follow the current version of 'Aqueous and Vitreous Cytopathology Protocol' (refer to Appendix 3) and complete a cytology request form. The protocol with request forms are available to download and print from our website (<https://eyepath.ucl.ac.uk/>) under '*Vitreous Form*'.

The syringe used in the collection of the sample may be submitted with the fluid inside. **Needles must be removed and the syringe capped and secured.** To fix the sample, draw an equal volume of 10% formalin up into the same syringe. Indication should be made on the request form as to whether the specimen is fixed or not.

USER GUIDE

If the patient is being investigated for probable lymphoma, we retain some of the fluid for later molecular (PCR) analysis at a site of our choosing, where required. Vitreous PCR does not work optimally on formalin fixed samples, so please aliquot some of the initial fluid sample into a separate clearly labelled Eppendorf (or similar) and mix with an approximately equal volume of neat alcohol, prior to fixation of the remainder in formalin (as above).

Larger samples like 'washings' can be submitted in either the cassette or collection bag. As above, formalin should be mixed with the sample which should be clearly labelled and sealed prior to sending to the DEP.

If microbiological investigation is required, the requesting clinician must submit a separate specimen to an appropriate microbiology service. **The DEP will return any microbiology specimens it may receive in error, we will not split samples or forward them on.**

7. 'HIGH RISK/DANGER OF INFECTION' SPECIMENS

It is the responsibility of the requesting clinician to indicate on the **REQUEST FORM AND SPECIMEN** if the patient is known or suspected to be within a "High Risk/Danger of Infection" category (e.g. HIV, T.B, Hepatitis B/C etc.), to facilitate appropriate handling.

Specimen Containment

It is the responsibility of the referring clinical/surgical team to ensure that all specimens are submitted to the laboratory in suitable and approved containers.

Approved specimen containers have leak-proof lids and the appropriate hazard warning sign for the fixative e.g. formalin. There should be adequate absorbent material within the container to absorb any spill.

Ensure specimen containers are closed securely and placed inside a sealed specimen bag.

Specimens received leaking or damaged are a danger to all those who encounter them, including theatre staff, porters and laboratory staff. Histology samples are irreplaceable, once removed they cannot be resampled, if a pot leaks to the extent that the sample integrity is compromised, appropriate diagnosis would not be possible.

Leakage from a specimen container may seriously compromise the diagnostic process. If a specimen is deemed unsuitable for safe processing by the laboratory staff, it may be disposed of and the requesting clinician informed of the problem as soon as is practicable.

8. HOW TO SUBMIT SPECIMENS FOR INVESTIGATION

Request Forms and Sample Labelling

For all specimens submitted to the laboratory, a fully completed request form **MUST** accompany each case. You may use request forms provided by us or by your own local histopathology department, as long as it is suitable for histopathology or cytology specimens.

Request forms must provide for:

- unique identification of the patient.
- a destination for the report and any charging information.
- the laboratory with the clinician contact details (in the event discussion of the case is required).

USER GUIDE

- date and time of specimen collection/removal and investigations required (e.g. histology/cytology).
- type of specimen and anatomical site of origin
- clinical information so that the pathologist may handle the specimen appropriately and interpret microscopic findings in the proper context.
- an awareness of any health and safety issues with a given specimen.

With this in mind, **please provide complete information on the request form.** Failure to adequately complete any portion of a request form may lead to errors, the responsibility for which will lie with the referring ophthalmologist.

NB: The patient's NHS number should be stated (when available), as this provides a unique identifier, together with the patient's first and last names, date of birth, gender, hospital number (if appropriate) and ethnicity if of clinical relevance.

Each specimen container, no matter how small, must also be labelled with the appropriate patient identification data (minimum of 3 identifiers e.g. first and last name, date of birth/age, gender and preferably patient's NHS/Hospital No). The information must be consistent with the request form, to prevent errors in specimen and patient identification. Multiple specimens from the same patient should also identify the specimen individually.

Reusable postal boxes (<http://www.daklapack.co.uk/medical-packaging/medical-mailing-boxes/set-p650-un3373/8712963012106/>) and one use Royal Mail Safeboxes (<http://www.royalmail.com/business/services/sending/parcels-uk/safebox>) are recommended for samples from outside of Moorfields. These will be returned to sender for reuse where possible.

9. REJECTION OF SPECIMENS

Specimens are rejected in certain circumstances, but we attempt to reduce delay by dealing with these issues promptly.

If there are anomalies with samples (i.e. discrepancies between the request form and specimen labelling, specimens in inadequately labelled containers or accompanied by inadequately completed request forms) the clinician will be contacted to resolve the issue, resulting in a delay in processing.

Samples for disciplines other than Cellular Pathology are rejected immediately. These will be returned to sender for forwarding to appropriate departments, such as Microbiology, Haematology and so forth.

The DEP does not provide Immunofluorescence (IF/DIF/IMF) for Mucous Membrane Pemphigoid studies (MMP), these should be sent directly to an appropriate local centre.

Factors which can affect the performance of examinations:

- Inadequate sample size
- Poor/inappropriate fixation
- Inadequate Clinical detail

USER GUIDE

For these reasons we ask that referring clinicians are generous in providing as much material as possible for examination in a manner which is most useful (i.e. whole resections as opposed to piece meal). All samples are sent in formalin (with the exception of cytology fluids) and that as much relevant clinical information is also included.

10. SPECIMEN TRANSPORTATION TO THE LABORATORY

Mailed or Couriered Specimens

Specimens mailed or couriered should be packaged in approved containers and in accordance with the requirements of the delivery service - UN3373 (see section 4). At the very least this is a sealed pot which can withstand a fall from desk height, this should be placed inside a bag with sufficient absorbent material such that any leak would be contained. This should then be placed in a suitable, labelled, postal box for transport.

Hospitals more local to the department may make their own delivery arrangements via porters or delivery van services.

To confirm receipt of specimen(s) by the department, it is recommended that a 'confirmation of receipt fax-back' form, providing the sender's confidential fax number, is enclosed with the specimen(s).

The front desk at the DEP is manned 0700-1900h Monday to Friday and 0800-1200h on Saturdays. We are able to receive Formalin Fixed postal/couriered samples between these hours.

Users at Moorfields Eye Hospital

Moorfields Pathology Services is located in clinic 5, on the ground floor of the main hospital, and is not linked to, part of, or runs the DEP, which is located separately within the UCL Institute of Ophthalmology.

All specimens from Moorfields Hospital, its clinics, theatres and/or satellite sites should be sent via Moorfields Pathology Services so that accurate recording and tracking may be made. This includes specimens from private patients, vitreous fluids etc.

Moorfields Pathology Services can be contacted on telephone extension number 2166 (prefixed with 74 if from within the IoO). Enquiries about histopathology and cytology reports for Moorfields patients should initially be made to this telephone number.

Specimen pots and request forms are available in the operating theatres and to service users at Moorfields Eye Hospital (and satellite sites) from Moorfields Pathology Services.

11. REPORTS

The department aims to provide a timely as well as a high quality service.

Target turnaround times (from specimen receipt to availability of an authorised report) are within 7-10 calendar days. Our current average turnaround time is 2 days.

It is not always possible to have a final report available within the above stated times. Complex cases may require a sequential series of special investigations, and in the case of

USER GUIDE

referrals from elsewhere, time may be spent awaiting submission of further diagnostic material at our request.

If a report is required by a particular date, this should be indicated on the request form. An attempt will be made to accommodate these requests, but a final report by a particular date cannot be guaranteed.

Uncertainty of Measurement and outcome are part of our accreditation requirements. The Department stresses that both macroscopic and microscopic measurements are an approximation and should be viewed within clinical context. The routine processes of fixation, processing, orientation and subsequent staining can have an effect on the size and shape of tissues which can invalidate stated measurements. Further information is available in IMM 021 Validation, Calibration and Uncertainty of Measurements, which looks in depth at the factors which can affect the outcome of the histology process. Issues with measurements that do not meet clinical requirements should be reported back to the department, please see section 11 – User Satisfaction and Complaints.

Reports Database

Clinicians can access authorised reports for patients from their own hospital using the web-based pathology database administered by the DEP. This database can be accessed from anywhere, at any time, and is time efficient for both the clinician and the DEP.

A registration process is required before reports can be accessed. Registration is manual and may take a few days, so clinicians are recommended to register when they first start work in a new hospital.

The web address for the reports database is <https://eyepath.ucl.ac.uk/> together with an on-line 'Guide to Registering with EyePath' and 'Guide to Using EyePath'.

Unauthorised reports cannot be viewed on the database. Enquiries regarding unauthorised cases may be made to the Clinical Administrator on 0207 608 6948.

All personal information within the DEP is kept confidentially, only available where necessary to appropriate individuals. EyePath and thus all Patient Identifiable Data (PID) is stored on UCL computer systems, behind the highest level protection, which is in accordance with ISO 27001 – Information Security Management. Further information is available in the department policy D003, Management of Data and Information.

Clinical Advice and Interpretation

Advice to clinicians is readily available at all stages of the diagnostic process, from deciding what material to submit for examination to guidance on interpretation of the final report. All initial enquiries should be made to the Clinical Administrator on 0207 608 6948.

Please feel free to contact the reporting pathologist or one of the other consultants in the department for discussion of individual cases. If discussing a report, please quote the Laboratory Number which appears on the report and uniquely identifies the patient and specimen.

USER GUIDE

Time Limits for Requesting Additional Examinations

Paraffin wax blocks and stained slides are retained for a minimum of 30 years, should additional examinations be required. Residual tissue is kept for a minimum of three months after report authorisation. It is rare that we retain tissue as we process all of it in most circumstances. Alcohol fixed residual cytological material is also retained for a minimum of three months' post report sign out. After these time limits the material is disposed of in an appropriate manner which maintains patient confidentiality whilst satisfying both local and national guidance. Empty pots are retained for a week post examination, any issues relating to samples should be notified back to the DEP as soon as possible after discovery.

12. USER SATISFACTION AND COMPLAINTS

It is our aim to continually provide, maintain and improve the services of our department so that they most suit the needs and requirements of our users and benefit patient care.

Feedback questionnaires are issued regularly through NSOPS but, in the meantime, we appreciate any comments or suggestions that you consider would improve the quality of services provided.

Please contact our Head of Department, Professor Philip Luthert (p.luthert@ucl.ac.uk) with any comments, commendations, complaints or concerns.

Ad Hoc comments made at MDT or other gatherings may not be acted on formally, so we would prefer direct communication, regardless of the size or severity of your comment, concern or praise.

13. NON-NHS SERVICES PROVIDED BY THE DEPARTMENT

Specimens from Private Patients

The department accepts specimens from private patients, for which a charge will be made to the referring clinician. Arrangements should be made in advance for billing purposes. Please complete *Registration Form for Submission of Private Patient Work*, which is available on our website <https://eyepath.ucl.ac.uk>. A scale of charges is also available on the website and from the departmental secretary on request (pathadmin.ioo@ucl.ac.uk or 0207 608 6948).

NB: If the correct status of the patient (i.e. NHS or private) is not correctly declared, the requesting clinician may receive an invoice.

MEH: The request form accompanying such a specimen must clearly indicate that the specimen is from a private patient.

Users, other than MEH: A fully completed request form should be accompanied by a correspondence with the consulting room address (e.g. headed notepaper or a compliments slip) and including some reference (e.g. the patient's hospital number or initials) and requesting clinician's signature.

Alternatively, you may wish to make your histopathology examination request in the form of a referral letter on headed notepaper with the requesting clinician's signature.

USER GUIDE



Research

Being based in the UCL Institute of Ophthalmology, the ophthalmic pathology department is in an ideal position to provide services to support researchers.

Services can range from technical preparation of small numbers of slides to collaborative work with input from one or more consultant ophthalmic pathologists.

Please contact the department if you wish to discuss a project.

Training

Both ophthalmologists and histopathologists are welcome to spend time in the department if they wish to learn about ophthalmic pathology, either in preparation for examinations or in order to develop a subspecialist interest.

The department does not currently form part of any rotational training scheme, which allows training placements to be tailored to an individual in a flexible manner.

Please contact one of the consultant ophthalmic pathologists if you wish to arrange a training placement.

USER GUIDE**APPENDIX 1. LIST OF REFERRAL CENTRES:**

Dr Eduardo Calonje Consultant Dermatopathologist St John's Institute of Dermatology 2 nd Floor South Wing St Thomas' Hospital London SE1 7EH	Dr Hasan Rizvi Consultant Histopathologist Department of Cellular Pathology The Royal London Hospital Whitechapel Road Whitechapel London E1 1BB
Dr Alan Ramsay Consultant Haematopathologist UCLH Department of Cellular Pathology The Rockefeller Building 21 University Street London WC1E 6JJ	Dr Richard Barlow Consultant Dermatologist St John's Institute of Dermatology 3rd Floor Southwark Wing Guy's Hospital Great Maze Pond London SE1 9RT
Dr Amrita Jay Cellular Pathology - Histopathology 4th Floor, Rockefeller Building 21 University Street London WC1E 6JJ	Dr Khin Thway Consultant Histopathologist Royal Marsden Hospital Fulham Road London SW3 6JJ
Consultant Pathologist Royal National Orthopaedic Hospital NHS Trust Brockley Hill Stanmore Middlesex HA7 4LP	Dr Luciane Dreher Irion Consultant Ophthalmic Pathologist Manchester Royal Infirmary Oxford Road Manchester M13 9WL
Dr Hardeep S Mudhar Consultant Ophthalmic Histopathologist Department of Histopathology E-Floor Royal Hallamshire Hospital Glossop Road Sheffield S10 2JF	UCL Advanced Diagnostics Histopathology Room 112, 1 st Floor. The Rockefeller Building 21 University Street London WC1E 6JJ
Hongxiang Liu, PhD, FRCPath Consultant Clinical Scientist Molecular Malignancy Laboratory and Department of Histopathology, Addenbrooke's Hospital Cambridge. CB2 0QQ	All of the referral centres we regularly refer cases (or work to) are enrolled in appropriate Accreditation schemes. We monitor these periodically to ensure that no episodes of poor performance have been reported and that the output of these departments is clinically and technically relevant.

USER GUIDE

APPENDIX 2: TESTS PERFORMED AT THE DEP.

Special Stains	Antibody Repertoire	
Alcian Blue	ACANTHAMOEBA	CK20
Alcian Blue PAS	AE1/AE3 (MCK)	CHROMOGRANIN A
Celestine Blue Haematoxylin	BCL-2	CYCLIN D1
Congo Red Alkaline	BCL-6	DESMIN
Giemsa	BerEP-4	EMA
Gomori's One Step Trichrome	CD3	GFAP
Gram Stain	CD4	HMB45
Gram Twort	CD5	HLA-DR
Grocott Hexamine Silver	CD8	IgD
Haematoxylin and Eosin	CD10	IgG
Haematoxylin Van Gieson	CD15	IgG4 (or EP4420)
Hyaluronidase Digestion	CD20	IgM
Martius Scarlet Blue	CD21	KAPPA
Masson Fontana	CD23	KI-67
Masson Trichrome for Granular Dystrophy	CD31	LAMBDA
Melanin Bleach	CD34	MEL A
Miller's Elastic Van Gieson	CD45	MNF116
Oil Red O	CD56	MUM-1
Periodic Acid Schiff	CD68	M. ACTIN
Periodic Acid Schiff with Diastase	CD79a	NEURO FILAMENT
Perls Prussian Blue	CD138	p63
Reticulin	CEA	RHODOPSIN
Toludine Blue	CK3	SMOOTH MUSCLE ACTIN
Von Kossa	CK7	S100
Wade Fite	CK12	STAT-6
Ziehl Neelson	CK14	SYNAPTOPHYSIN
	CK8/18 (CAM 5.2)	VIMENTIN
	CK19	VON WILLIBRAND FACTOR (FACTOR VIII)

Our repertoire is constantly evolving, we validate all of our tests and revalidate regularly. We are enrolled in External Quality Assurance (NEQAS) for both our Cellular Pathology Technique and Immunocytochemistry tests. Any of the above tests which do not feature in either of the listed NEQAS schemes are independently assessed by other NSOPS departments for their continued suitability.

USER GUIDE

APPENDIX 3: AQUEOUS AND VITREOUS CYTOPATHOLOGY PROTOCOL. SPECIMEN COLLECTION AND DISPATCH

- If a diagnostic vitrectomy is to be performed, the laboratory should be informed, preferably 1 working day prior to specimen collection; **telephone 0207 608 6888**.
- The specific 'Aqueous/Vitreous Cytology' Request Form should be completed accurately and clearly, paying particular attention to identification of the referring Vitreoretinal (VR) surgeon and any Medical Retina / Paediatric team involved. If no alternative clinician is mentioned it will be assumed that the referring surgeon is responsible for ongoing management of the patient and that no-one else needs to be informed.
- It is the responsibility of the clinician to indicate on the request form and specimen container if the patient is known or suspected to be in a '**High Risk/Danger of Infection**' category.
- The specimen should be labelled accurately and clearly and be consistent with the request form.
- Incomplete or incorrect forms/specimens may be returned along with the specimen, with no investigations conducted.
- Please follow your own local procedures regarding storage and dispatch of samples. Such procedures may differ depending on whether the sample is being taken in or out of standard working hours.
- All samples should be fixed, whether or not the vitrectomy is being undertaken outside of normal laboratory hours (after 5pm), please do the following:
 - If it is likely that material will be required for Clonality/PCR investigations (for ?lymphoma), aliquot a small volume of the sample fluid into a separate Eppendorf (or similar suitable receptacle). Mix with an approximately equal volume of neat alcohol.
 - Fix the remaining material with an approximately equal volume of formalin (available in most clinic areas and theatres). This can be done by drawing formalin into the syringe used for the tap, before capping.
- Ensure that the form and the specimen(s) are labelled as to what has and has not been fixed.

The Department of Eye Pathology does not handle microbiology specimens.

Follow local protocols for Microbiology samples. We will not split samples for Micro and will dispose of any received.

HEALTH AND SAFETY IS CRITICAL WITH ALL SPECIMENS

- There must be no sharps included with the specimen e.g. needles;
- Specimen containers must be leak-proof and securely closed to avoid specimen leakage.
- Place the specimen in a self-seal specimen bag.
- Ensure there is appropriate sealing and packaging of the specimen to avoid breakage and to protect yourself, porters and laboratory staff. Ensure this completed request form accompanies the specimen.

LABORATORY

- The vitreous specimens will be processed according to the laboratory's current Standard Operating Procedures.
- Where possible, we shall store material for clonality (PCR) studies. (Note there is little scope for this with formalin fixed specimens. Additionally, the national funding for Ophthalmic Pathology does not include molecular testing and the sending Trust will be billed directly for PCR studies).

FORMAL REPORTING PROCESS

- Authorised reports are immediately available electronically on <https://eyepath.ucl.ac.uk>
- Printed reports are dispatched daily. These are sent to the original surgeon and where requested a copy report will go to a second clinician(s) if so named on the request form.
- We are happy to receive enquiries about unreported cases during laboratory hours (9-5 Mon-Fri).

For additional information please refer to the Ophthalmic Pathology Diagnostic Service User Guide available on our EyePath website <https://eyepath.ucl.ac.uk>

Department of Eye Pathology,
UCL Institute of Ophthalmology,
11-43 Bath Street, London, EC1V 9EL

Laboratory: **020 7608 6888**; Telephone Enquiries: **020 7608 6948**; Fax: **020 7608 6862**