


Schedule of Accreditation

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United Kingdom Accreditation Service

2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

 <p>UKAS MEDICAL</p> <p>8661</p> <p>Accredited to ISO 15189:2012</p>	<p>Great Ormond Street Hospital for Children NHS Foundation Trust</p> <p>Issue No: 001 Issue date: 11 August 2017</p>	
	<p>Department of Histopathology Floor 3 Camelia Botnar Laboratories, Great Ormond Street Hospital for Children NHS Trust, Great Ormond Street, London WC1N 3JH</p>	<p>Contact: Dr. Michael Ashworth Tel: +44 (0)2078298663 Website: www.gosh.co.uk</p>
<p>Testing performed at the above address only</p>		

Additional site activity performed away from the laboratory

Location details	Activity
<p>Mortuary and Body Store Floor 0 Camelia Botnar Laboratories Great Ormond Street Hospital for Children Great Ormond Street London WC1N 3JH</p>	<p>Storage of Bodies Record Keeping (body identification and audit trail)</p>

DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
<p>Human Tissue and Body Fluids</p> <p>Fresh tissue</p>	<p><u>Histopathology examination activities for the purpose of diagnosis</u></p>	<p>Macroscopic and Microscopic examination. Documented in house methods incorporating manufacturers' instructions where relevant:</p> <p>Specimen Dissection SSOP 01.07- 1.08 SSOP 04.02</p> <p>Tissue processing Manufacturer's instructions for Leica, Peloris and Sakura, VIP in conjunction with documented procedures:</p> <p>SSOP 01.11 SSOP 01.11a SSOP 01.15</p>



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Human Tissue and Body Fluids (cont'd)	<u>Histopathology examination activities for the purpose of diagnosis (cont'd)</u>	Macroscopic and Microscopic examination. Documented in house methods incorporating manufacturers' instructions where relevant:
Formalin fixed tissue		Tissue embedding Manufacturer's instructions for Sakura, Tissue Tek in conjunction with documented procedures: SSOP 01.16
Formalin Fixed Paraffin Embedded Tissue (FFPE) sections on glass slides		Tissue sectioning Manufacturer's instructions for Leica, RM2245 and Thermo Fisher Shandon, ME+ in conjunction with documented procedures SSOP 01.17-FFPE
	Routine H and E staining for tissue architecture and nuclear detail (identification of basophilic and eosinophilic structures)	Manufacturer's instructions for Leica CV 5030 Autostainer in conjunction with documented procedures: SSOP 01.33 SSOP 01.34 SSOP 01.35 SSOP 01.36 SSOP 01.37 SSOP 01.38 SSOP 01.39 SSOP 01.40
Fresh Tissues	Frozen Section	Manufacturer's instructions for Leica C 1860 cryostat and Thermo Electron Cryotome in conjunction with documented method: SSOP 02.17



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Human Tissue and Body Fluids (cont'd)	<u>Histopathology examination for the purpose of diagnosis (cont'd)</u>	Macroscopic and Microscopic examination. Documented in house methods incorporating manufacturers' instructions where relevant:
	Special Staining to identify or exclude morphological and cytological abnormalities	Manual staining methods using in house documented procedures and the following stains:
	Identification of:	
Fresh Tissue /Frozen Section	Eosinophilic and basophilic structures	SSOP 05.41: Rapid Haematoxylin and Eosin (H&E) for frozen section and cytopspin
	Fats and lipids	Oil red O SSOP 05.25
	Lipid	Sudan Black SSOP 11.32
	Complement	C4d SSOP05.41
Fresh tissue smear	Differentiation of myopathies	Fresh Tissue smear (Tol Blue) SSOP12.04:
Formalin Fixed Paraffin Embedded Tissue (FFPE) sections on glass slides	Special staining Examination of tissues to identify or exclude morphological and cytological abnormalities	Manual staining methods using in house documented procedures and the following stains:
	Identification of:	
	Weakly sulphated and acidic mucins	Alcian Blue (AB) technique SSOP 05.03
	Acidic and neutral mucins	Alcian Blue Periodic Acid-Schiff (AB PAS) technique SSOP 05.03
	Amyloid	Congo Red technique SSOP 05.06
	Elastic connective tissue fibres	Elastic van-Gieson (EVG) (Miller's) technique SSOP 05.09



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Human Tissue and Body Fluids (cont'd)	<u>Histopathology examination activities for the purpose of diagnosis (cont'd)</u>	Macroscopic and Microscopic examination. Documented in house methods incorporating manufacturers' instructions where relevant:
Formalin Fixed Paraffin Embedded Tissue (FFPE) sections on glass slides	Special staining to identify or exclude morphological and cytological abnormalities	Manual staining techniques using in house documented procedures and the following stains:
	Identification of:	
	Haematopoietic cells and <i>Helicobacter pylori</i> -like organisms	Giemsa technique SSOP 05.24
	Myofibrils	Gomori Trichrome SSOP 11.37
	Elastic fibres, mast cells, sulphated mucins	Gomori Aldehyde Fuchsin SSOP 05.10
	Detection of organisms	Gram stain SSOP 05.14
	Agryophil cells	Grimelius SSOP 05.15
	Detection of fungi	Grocott SSOP 05.16
	Basophilic and eosinophilic structures	Haematoxylin and Eosin SSOP 05.17 and 41
	Urine mucopolysaccharide	Haust and Landing Toluidine Blue SSOP 11.34
	Mucins	High Iron Diamine SSOP 05.19
	Carbohydrate	Lugols Iodine SSOP 06.12
	Myelin sheaths	Luxol Fast Blue SSOP 12.12
	Fibrin	Martius Scarlet Blue (MSB) SSOP 05.45
	Melanin and argetaffin granules	Masson Fontana SSOP 05.22
	Collagen	Masson one step SSOP 05.11
	Connective tissue elements	Masson Trichrome technique SSOP 05.11



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Human Tissue and Body Fluids (cont'd)	<u>Histopathology examination for the purpose of diagnosis (cont'd)</u>	Macroscopic and Microscopic examination. Documented in house methods incorporating manufacturers' instructions where relevant:
Formalin Fixed Paraffin Embedded Tissue (FFPE) sections on glass slides	Special staining to identify or exclude morphological and cytological abnormalities	Manual staining techniques using in house documented procedures and the following stains:
	Identification of:	
	Nucleic acids , polysaccharides	Methanolic Toluidine Blue SSOP 05.35
	Nuclear material	Nuclear Fast Red SSOP 11.25
	Hepatitis B surface antigen	Orcein SSOP 05.33
	Glycogen, mucopolysaccharide components, fungi and basement membranes	Periodic Acid Schiff SSOP 05.27
	Pituitary cell types	Periodic Acid-Schiff (PAS) Orange G SSOP 11.50
	Polysaccharides	Periodic Acid Schiff Diastase – Celloidin
	Glycogen	Periodic Acid Schiff-Celloidin SSOP 11.27
	Renal pathology (BM)	Periodic Acid Methanamine SSOP 05.26
	Ferric Iron	Perls Prussian Blue SSOP 05.28
	Copper	Rhodanine SSOP 05.31
	Melanin	Schmorl SSOP 05.32
	Mast cells / metachromatic tissue components	Toluidine Blue technique SSOP 11.24/35/36
	Calcium	Tripp and Mackay SSOP 05.36
	Collagen connective tissue fibres	van-Gieson (HVG) SSOP 05.18



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Formalin Fixed Paraffin Embedded Tissue (FFPE) sections on glass slides	Special staining to identify or exclude morphological and cytological abnormalities Identification of: Calcium Mycobacterium e.g. M. leprae Infectious disease eg spirochetes Acid and alcohol-fast bacilli	Manual staining techniques using in house documented procedures and the following stains: Von Kossa SSOP 05.37 Wade Fite SSOP 05.38 Warthin Starry SSOP 05.39 Ziehl-Neelsen (ZN) technique SSOP 05.40
Human Tissue and Body Fluids (cont'd)	<u>Histopathology examination for the purpose of diagnosis (cont'd)</u>	Macroscopic and Microscopic examination. Documented in house methods incorporating manufacturers' instructions where relevant:
Formalin Fixed Paraffin Embedded Tissue (FFPE) sections on glass slides and fresh frozen tissue on slides	Immunohistochemistry To identify or exclude morphological and cytological abnormalities. Identification of : Adenovirus Cytokeratin (CK), LMW CK (LMW & HMW) Fusion protein eg lymphomas Amyloid precursor Histiocytes/Hepatocellular Ca Hepatic tumours Embryonic cell in normal tissue and germ tumours Basement membrane Astrovirus Muscle fibres	Manufacturer's instructions for Leica Bond Max Immunohistochemistry in conjunction with documented procedures and the following antibodies: SSOP 07.23 Adenovirus AE1 AE1/AE3 ALK-1 Alzheimer precursor Alpha 1 Antichymotrypsin Alpha 1 Antitrypsin Alpha Feto-protein Alpha V Integrin Astrovirus B-1 Integrin



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Formalin Fixed Paraffin Embedded Tissue (FFPE) sections on glass slides and fresh frozen tissue on slides	Immunohistochemistry To identify or exclude morphological and cytological abnormalities Identification of : Carcinoma Lymphoma/Carcinoma Lymphomas Lymphoma Epithelial cell types Tumour marker eg Carcinoma Complement (Renal disease) Complement (Renal disease) Gastrointestinal and pulmonary disease Ganglion cells (Hirschsprung disease) Apoptosis Apoptosis Cardiovascular disease Cardiovascular disease T antigen on lymphocytes T cell subset T cell subset T cell marker Endothelial marker Carcinoma/Lymphoma Histiocytes/Langerhan cell GIST,RCC,Germ cell tumour Stem cells and Neuro tum. Lymphoma Histiocytes Lymphoma Monocyte/macrophage cells Pan t-lymphocytes Pan B-cell Follicular Dendritic cells Lymphomas	Manufacturer's instructions for Leica Bond Max Immunohistochemistry in conjunction with documented procedures and the following antibodies: SSOP 07.23 Beta-catenin Bcl-2 Bcl-6 BerH2 Ber-EP4 Bombesin C1q C3 Calcitonin Calretinin Caspase 8 Caspase 3 -Cleaved Caveolin CCC9 CD3 CD4 CD8 CD20 CD31 CD10 CD1a CD117 (c-KIT) CD133 CD138 CD14 CD15 CD163 CD2 CD20 CD21 CD25



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Human Tissue and Body Fluids (cont'd)	<u>Histopathology examination for the purpose of diagnosis (cont'd)</u>	Macroscopic and Microscopic examination. Documented in house methods incorporating manufacturers' instructions where relevant:
Formalin Fixed Paraffin Embedded Tissue (FFPE) sections on glass slides and fresh frozen tissue on slides	Immunohistochemistry To identify or exclude morphological and cytological abnormalities Identification of : Lymphomas Stem cell/endothelium sarcoma Stem cell/endothelium sarcoma Lymphoma Neuropath, glial cells Pan Leukocyte marker (T&B) Pan T-cell marker Neural cell adhesion molecule NK cells, neuroendocrine cells Pan B-cell marker Lymphoma Sarcomas, spindle cell tumours Carcinoma Neuroendocrine Cytomegalovirus Cytomegalovirus Cytokeratin in specific epithelium CK for Carcinoma CK for Carcinoma CK in gastrointestinal cells Cellular proliferation/differentiation and neoplastic disease Collagen (Neuromuscular dis.) Lymphatic endothelium Intermediate filaments Epstein Barr Virus Epstein Barr Virus Lymphoma/carcinoma/meningioma Cardiac and skeletal muscle Endothelial cells Histiocytic and Connective tissue tumours Lymphoma (Hodgkins)	Manufacturer's instructions for Leica Bond Max Immunohistochemistry in conjunction with documented procedures and the following antibodies: SSOP 07.23 CD30 CD31 CD34 CD4 CD44 CD45 CD5 CD56 CD57 CD79a CD8 CD99 CEA (Carcino Embryonic Antigen) Chromogranin CMV CMV in situ Cytokeratin 7 (CK7) Cytokeratin 14 (CK14) Cytokeratin 19 (CK19) Cytokeratin 20 (CK20) C-MYC Collagen 6 D2-40 Desmin D33 EBV EBV-ISH Epithelial Membrane Antigen Emerin Factor VIII Factor 13a Fascin



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Human Tissue and Body Fluids (cont'd)	<u>Histopathology examination activities for the purpose of diagnosis (cont'd)</u>	Macroscopic and Microscopic examination. Documented in house methods incorporating manufacturers' instructions where relevant:
Formalin Fixed Paraffin Embedded Tissue (FFPE) sections on glass slides and fresh frozen tissue on slides	Immunohistochemistry To identify or exclude morphological and cytological abnormalities Identification of : T cell marker squamous carcinoma Leukaemia Neuroendocrine cell Human chorionic gonadotrophin Human Growth Hormone Lymphocytes Melanocytes (melanoma) Herpes Simplex I/II Herpes Simplex I Herpes Simplex II Carcinoma vs Germ cell tumour Tumours (rhabdoid, sarcoma) Endocrine Macrophages, microglia Leucocytes Immunoglobulin A Immunoglobulin G Immunoglobulin M Interleukin 8 Kappa light chains Kappa and Lambda light chains Mitosis Macrophages Lambda light chains Lysosomal associated membrane protein Lysosomal associated membrane protein Langerhans cells Luteinizing Hormone Macrophages Endothelial cell marker	Manufacturer's instructions for Leica Bond Max Immunohistochemistry in conjunction with documented procedures and the following antibodies: SSOP 07.23 Foxp3 GLUT-1 Glycophorin C Glucagon HCG Human Growth Hormone HLA DR HMB45 Herpes Simplex I and II Herpes Simplex I Herpes Simplex II Inhibin INI-1 Insulin Integrin AV1 Integrin B1 IgA IgG IgM IL-8 Kappa Kappa and Lambda in situ Ki67 KP1 Lambda Lamp-1 Lamp-2 Langerin LH Lysozyme LYVE-1



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Formalin Fixed Paraffin Embedded Tissue (FFPE) sections on glass slides and fresh frozen tissue on slides	Immunohistochemistry To identify or exclude morphological and cytological abnormalities Identification of :	Manufacturer's instructions for Leica Bond Max Immunohistochemistry in conjunction with documented procedures and the following antibodies: SSOP 07.23
	Macrophage marker Microtubule marker Mast Cells Muscle (neuropathology) Sarcoma/Lymphoma Cytokeratin (Broad Range) lympho-haemopoietic neoplasms Leukaemia Small Round cell tumours Germ cell tumours Endothelium Ganglion cells/macrophages Lymphoma/neuropath Tumour marker Tumour marker CNS marker Lymphoma Neuroendocrine Tumour marker Macrophage marker Tumour marker Tumour marker Pancreatic polypeptide Prealbumin Proinsulin Prolactin Schwann cells, nerve processes, S100 Positive neoplasms Lung Tumour (eg RCC) Thyroid Toxoplasma Prealbumin, Liver	MAC 387 MAP2 Mast Cell Tryptase Merosin MIC2 MNF 116 MUM-1 Myeloperoxidase NB84 OCT-3/4 O-Nectin O-Pontin P4EBP P53 P62 Parvalbumin PAX5 Pancreatic cocktail P component PGM1 Plakoglobin PLAP Pancreatic polypeptide Prealbumin Proinsulin Prolactin S100 Surfactant B TFE3 Thyroglobulin Toxoplasma Transthyretin



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<p>Human Tissue and Body Fluids (cont'd)</p> <p>Formalin Fixed Paraffin Embedded Tissue (FFPE) sections on glass slides and fresh frozen tissue on slides</p>	<p><u>Histopathology examination activities for the purpose of diagnosis (cont'd)</u></p> <p>Immunohistochemistry To identify or exclude morphological and cytological abnormalities</p> <p>Identification of :</p> <p>Growth factor Mesenchymal cell origin Tumour differentiator Tumour marker e.g. Wilms</p>	<p>Macroscopic and Microscopic examination. Documented in house methods incorporating manufacturers' instructions where relevant:</p> <p>Manufacturer's instructions for Leica Bond Max Immunohistochemistry in conjunction with documented procedures and the following antibodies: SSOP 07.23</p> <p>VEGF VG1 Vimentin V-CAM WT-1</p>
<p>Human Tissue and Body Fluids (cont'd)</p> <p>Neuromuscular tissue samples</p>	<p><u>Neuropathology examination activities for the purpose of diagnosis</u></p>	<p>Macroscopic and Microscopic examination. Documented in house methods incorporating manufacturers' instructions where relevant:</p> <p>Specimen Dissection SOP12.01 SOP12.04 SOP1223</p> <p>Tissue processing Manufacturer's instructions for Leica, Peloris and Sakura, VIP in conjunction with documented procedures:</p> <p>SOP01.11 SOP01.11a SOP01.15</p> <p>Embedding Manufacturer's instructions for Sakura, Tissue Tek in conjunction with documented procedures: SOP01.16</p>



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Human Tissue and Body Fluids (cont'd)	<u>Neuropathology examination activities for the purpose of diagnosis</u>	Macroscopic and Microscopic examination. Documented in house methods incorporating manufacturers' instructions where relevant:
Neuromuscular tissue samples		Tissue sectioning Manufacturer's instructions for Leica, RM2245 and Thermo Fisher Shandon, ME+ in conjunction with documented procedures SOP01.17 (FFPE) SOP02.17 (Frozen)
Human Tissue and Body Fluids (cont'd)	<u>Neuropathology examination activities for the purpose of diagnosis (cont'd)</u>	Macroscopic and Microscopic examination. Documented in house methods incorporating manufacturers' instructions where relevant:
Formalin Fixed Paraffin Embedded Tissue (FFPE) sections on glass slides and fresh frozen tissue on slides	Neuropathology special staining (automated) To identify or exclude morphological and cytological abnormalities	Manufacturer's instructions for Leica CV 5030 Autostainer in conjunction with documented procedures and the following special stains: SSOP01.33-01.40
Brain Smear	Identification of:	SSOP12.04
CSF		SSOP03.01
	Neurofibrillary tangles Nucleic acids Myelin sheaths (PNS) Nerve fibres Myelin sheaths (CNS)	Bielschowsky SSOP 12.19 NISSL SSOP 12.15 Solochrome Cyanin SSOP 12.14 Glees and Marsland SOP 12.09 Luxol Fast Blue (Kluver and Bareera) SSOP 12.12
	Tumour marker eg Neuropath Neuronal marker Pituitary Neuropath (growth factor) Neuropath (polyglutamine expansion) Neuropath (Glial tumours) Neuropathology (neural stem cells) Neuronal cell types (neuropath) Neuronal cells	Brachyury Calbindin FSH GAB 1C2 IDH Nestin Neu N Neurofilament



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Human Tissue and Body Fluids (cont'd)	Neuropathology examination activities for the purpose of diagnosis (cont'd)	Macroscopic and Microscopic examination. Documented in house methods incorporating manufacturers' instructions where relevant:
Formalin Fixed Paraffin Embedded Tissue (FFPE) sections on glass slides and fresh frozen tissue on slides	Neuropathology histochemical staining (automated) To identify or exclude morphological and cytological abnormalities	Manufacturer's instructions for Leica CV 5030 Autostainer in conjunction with documented procedures using the following histochemical stains:
Muscle	<p>Identification of:</p> <p>Neuronal cells Neuronal Cells Neurons, melanocytes, neuroendocrine cells Neuropathology Neuropathology endocrine dysfunction Purkinje cells Thyroid stimulating hormone Neuronal staining Classification of dementias Classification of medulloblastomas Muscle (neuropath) Muscle Dystrophin Muscle Dystrophin Muscle Dystrophin Limb –girdle Muscle dystrophies CNS tumours (eg. ETMR) Rare muscle dystrophies Rare muscle dystrophies Myoglobin sub typing muscle fibres sub typing muscle fibres Skeletal muscle sub typing muscle fibres sub typing muscle fibres Mac-C5b-9 Sarcoglycanopathies Sarcoglycanopathies Sarcoglycanopathies Sarcoglycanopathies Actin Smooth Muscle</p>	<p>Neurofilament 200KD NSE PGP 9.5</p> <p>PS6 RT97 Somatostatin Spectrin TSH TUJ-1 Ubiquitin YAP Dynorphin Dystrophin 1 Dystrophin 2 Dystrophin 3 Dysferlin LIN-28a Alpha dystroglycan Beta Dystroglycan Myoglobin Myosin -Developmental Myosin Fast Myogenin Myosin Neonatal Myosin -Slow Mac-C5b-9 Sarcoglycan Alpha Sarcoglycan Beta Sarcoglycan Delta Sarcoglycan Gamma Actin Smooth Muscle</p>



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Formalin Fixed Paraffin Embedded Tissue (FFPE) sections on glass slides	Neuromuscular Enzyme Histochemistry (manual) To identify or exclude morphological and cytological abnormalities	In house documented manual methods using the following enzymes: SSOP 10.01/02/03/05/06 SSOP 10.08 SSOP 11.51
	Identification of:	
	Acetylcholinesterase	Acetylcholinesterase SSOP 11.01
	Acetylcholinesterase	Rapid Acetylcholinesterase SSOP 11.02
	Acid Phosphatase	Acid Phosphatase – Gomori SSOP 11.03
	Acid Phosphatase	Acid Phosphatase AS-BI SSOP 11.04
	Adenylate Deaminase	Adenylate Deaminase SSOP 11.05
	Alcohol Dehydrogenase	Alcohol Dehydrogenase SSOP 11.06
	Alkaline Phosphatase	Alkaline Phosphatase – BCIP-NBT SSOP 11.07
	Alkaline Phosphatase	Alkaline Phosphatase – Napthol AS-TR SSOP 11.08
	ATPase	ATPase Fibre typing SSOP 11.11
	Alpha Glucosidase	Brush Border Alpha Glucosidase SSOP 11.12
	Cystine crystals	Cystine crystals SSOP 11.13
	Cytochrome Oxidase	Cytochrome oxidase SSOP 11.14
	Glucose 6 Phosphate	Glucose -6-Phosphatase SSOP 11.17
	Glycerol Phosphate dehydrogenase	Glycerophosphate dehydrogenase (Vit K) SSOP 11.10
	Lactase	Lactase – Azo coupling method SSOP 11.20
	Lactase	Lactase – Indigogenic method SSOP 11.21
	NAHD Dehydrogenase	NADH Dehydrogenase SSOP 11.23
	Esterase	Non-specific Esterase SSOP 11.24



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Formalin and glutaraldehyde fixed tissues	Electron Microscopy Demonstration of ultrastructural components of renal, muscle, cardiac, nerve and other tissues Production of micrographs for diagnostic and interpretive use.	Manufacturer's instructions for JEOL 1400 Electron Microscope and Leica Ultracut Microtome with in house documented methods: SSOP 09.03: Specimen reception, fixation and dissection SSOP 09.04: Resin Processing SSOP 09.07: Semi thin sectioning using the Ultra microtome SSOP 09.08: Ultrathin sectioning SSOP 09.10: EM staining schedule
Hair	Demonstration of ultrastructural components	SSOP 01.03 (B): Reception and booking in and Omni Reference guide
Platelets	Demonstration of ultrastructural components (Hermansky Pudlak)	SSOP 09.19 Diagnosis of Hermansky Pudlak (HP)
Buffy Coat	Demonstration of ultrastructural components - Vacuolated lymphocytes	SSOP 09.18
Urine	Demonstration of ultrastructural components - Metachromic Granules	SSOP 03.05



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Human Tissue and Body Fluids (cont'd):	<u>Cytopathology examination for the purpose of diagnosis</u>	Documented in house methods incorporating manufacturers' instructions where relevant:
	To identify or exclude morphological and cytological abnormalities	Macroscopic and Microscopic examination:
		SSOP 03.03: Use of Cytospin
		SSWOP 02.01: Handling of fresh/infectious specimens and use of Hepair Class 1 cabinet
		SSOP 06.01: Class 1 safety cabinet operating procedure
		SSOP 03.07: Use of centrifuge
CSF		SSOP 03.10: Cerebro Spinal Fluid (CSF)
Urine		SSOP 03.05: Urine for metachromatic granules
Body Fluids		SSOP 03.01: Body Fluids
Cyst Aspirates		SSOP 03.11: Craniopharyngioma cyst aspirate
Sputum		SSOP 03.04: Sputum
		SSOP 05.25: Oil Red O
		SSOP 05.41: Rapid Haematoxylin and Eosin (H&E) for frozen section and cytopspin
Trans bronchial Biopsy and lavage		SSOP 03.03: Transbronchial Biopsy and lavage
<u>All</u> slides prepared as above	Morphological assessment and interpretation/diagnosis	SRP002
END		