Schedule of Accreditation

issued by

United Kingdom Accreditation Service

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



Locations covered by the organisation and their relevant activities

Laboratory locations:

Location details		Activity	Location code
Cellular Pathology Manchester Royal Infirmary Oxford Road Manchester M13 9WL	Local contact John Hayes – contact as above	Diagnostic histopathology cytology and cervical screening	A
ENT, Radiology Manchester Royal Infirmary Oxford Road Manchester M13 9WL	Local contact Jacquelyn Medlock Tel: 0161 276 5120 Jacquelyn.medlock@ mft.nhs.uk	FNA smear preparation staining and reporting.	В
The Christie NHS Foundation Trust Wilmslow Road Manchester M20 4B	Local contact Jacquelyn Medlock – contact as above	FNA smear preparation staining and reporting	с
Paediatric Histopathology Royal Manchester Children's Hospital Oxford Road Manchester M13 9WL	Local Contact: Emma Jacobs Tel: 0161 701 0603 Emma.jacobs@mft.nh s.uk	Paediatric Histopathology and Giving for Living (FISH)	D
Department of Histopathology Wythenshawe Hospital Southmoor Road Wythenshawe Manchester M23 9LT	Local Contact: Catherine McNulty Tel: 0161 292 4804 Catherine.McNulty@m ft.nhs.uk	Routine Histopathology Special Stains Immunohistochemistry DDISH Non-gynae / Diagnostic Cytology	E



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Testing performed by the Organisation at the locations specified

DETAIL OF ACCREDITATION

DETAIL OF AGOREDITATION				
Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code	
HUMAN BODY FLUIDS	Cytopathology examination activities for the purposes of clinical diagnosis	In-house documented procedures using manual methods or analysers in conjunction with manufacturer's instructions as specified		
Serous fluids, urine, CSF, cyst fluid, bronchial brush/alveolar lavage/wash/trap/ aspirate, bile duct/anal/penile brushes, synovial fluid, osteoarticular aspirate, cell agar blocks, fine needle aspirates, _breast, sputum, endoscopy samples, bladder	Examination of cellular material in order to identify or exclude morphological and cytological abnormalities.	Diagnostic cytology (non-gynae) in- house documented procedures for preparation, screening and reporting CYSPPRO5 CYSPPRO28 CYSPPRO39 CYSPPRO48 CYSCRPRO29	A	
and kidney washings.		CYSPPRO70 Preparation of Cytospins, smears, cell blocks and agar blocks	E	
		CYSPPRO75 Preparation of bronchoalveolar lavages for cell differential count	E	
		CYQUALPRO43 Internal Quality control in Cytology	E	
		HIREPRO17 Pathologist's reporting procedure - Cytology	E	
	Tinctorial stains for the demonstration of: Cells (nuclei and cytoplasm) and micro-organisms.	May-Grunwald Giemsa staining of slides CYSPPRO53 Gram's stain for synovial fluid specimens CYSPPRO20	A	



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HUMAN BODY FLUIDS (cont'd)	Cytopathology examination activities for the purposes of clinical diagnosis (cont'd)	In-house documented procedures using manual methods or analysers in conjunction with manufacturer's instructions as specified	
	Tinctorial stains for the demonstration of: Cells (nuclei and cytoplasm) and micro-organisms.	CYSPPRO67 Papanicolaou staining of Non-Gynaecological Cytology Specimens	E
		CYSPPRO68 May Grunwald Giemsa Staining of Non- Gynaecological Cytology Specimens	E
		CYSPPRO74 Cytology Haematoxylin and Eosin staining	E
Fine needle aspirates (various sites)	Examination of cellular material in order to identify or exclude morphological and cytological abnormalities.	Diagnostic cytology (non-gynae) in- house documented procedures for preparation, screening and reporting	B, C
		Attendance of BMS at Fine Needle Aspiration at Christie Hospital CYSPPRO30	В
		Attendance of BMS at Fine Needle Aspiration clinics at MRI including the Trafford site CYSPPRO38	B, C
	Tinctorial stains for the demonstration of: Cells (nuclei and cytoplasm)	Use of Rapi-Diff II CYSPPRO55	B, C
Synovial fluid	Detection of crystals	Microscopy using bi-refringence and fluorescence	A
		CYSPPRO66	
		CYEQPRO8	



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HUMAN BODY FLUIDS (cont'd)	<u>Cytopathology examination</u> <u>activities for the purposes of</u> <u>clinical diagnosis</u> (cont'd)	In-house documented procedures using manual methods or analysers in conjunction with manufacturer's instructions as specified	
Fluid bronchial lavage samples	Fat laden and hemosiderin laden macrophages	Fat Laden and Haemosiderin Laden Macrophages staining techniques (BAL) HISMPRO46	A, D
Liquid based cervical cell samples	Examination of cellular material to identify or exclude morphological and cytological abnormalities	Thinprep liquid based cytology preparation using Hologic T5000 slide processor and CYSRPRO1	A
		Thinprep slides stained using Papanicolau stain and TissueTek Sakura stainer, CYSPPRO2 CYEQMAN2 CYSPFRM6	A
		Thinprep processed stained slides coverslipped using TissueTek Sakura Tape Coverslipper CYEQMAN3 CYSPPRO2	A
		Manual screening and reporting using CYSCRPRO46 CYSCRPRO43 CYSCRPRO56	A



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Materials/Products tested Type of test/Properties measurement Standard specifications/ Equipment/Techniques used Location Code HUMAN BODY FLUIDS (cont'd) Cytopathology examination activities for the purposes of clinical diagnosis (cont'd) In-house documented procedures using manual methods or analysers instructions as specified In-house documented procedures using manual methods or analysers instructions as specified Synovial fluid Quantitation of white blood cells Cellometer Vision cell counter using fluorescence CYSPRO16 A Liquid based cervical cell samples Sample preparation and referral to ISO 15189:2012 accredited laboratory (UKAS reference 8393) for the purposes of HPV DNA test using Abbott m2000 system CYSCRPRO1 CYSCRPRO20 A HPV DNA result from ISO 15189:2012 accredited laboratory (UKAS reference 8393) Interpretation and reporting of HPV DNA results CYSCRPRO46 CYSCRPRO20 A				
(cont'd)activities for the purposes of clinical diagnosis (cont'd)using manual methods or analysers in conjunction with manufacturer's instructions as specifiedSynovial fluidQuantitation of white blood cellsCellometer Vision cell counter using fluorescence CYSPPRO16ALiquid based cervical cell samplesSample preparation and referral to ISO 15189:2012 accredited laboratory (UKAS reference 8393) for the purposes of HPV DNA test using Abbott m2000 systemCYSRPRO1 CYSCRPRO20AHPV DNA result from ISO 15189:2012 accredited laboratory (UKAS referenceInterpretation and reporting of HPV DNA resultsCYSCRPRO46 CYSCRPRO20A	Materials/Products tested	measured/Range of		
Liquid based cervical cell samplesCellsusing fluorescence CYSPPRO16ALiquid based cervical cell samplesSample preparation and referral to ISO 15189:2012 accredited laboratory (UKAS reference 8393) for the purposes of HPV DNA test using Abbott m2000 systemCYSRPRO1 CYSCRPRO20AHPV DNA result from ISO 15189:2012 accredited laboratory (UKAS referenceInterpretation and reporting of HPV DNA resultsCYSCRPRO46 CYSCRPRO20A		activities for the purposes of	using manual methods or analysers in conjunction with manufacturer's	
samplesreferral to ISO 15189:2012 accredited laboratory (UKAS reference 8393) for the purposes of HPV DNA test 	Synovial fluid		using fluorescence	A
15189:2012 accredited HPV DNA results CYSCRPRO20		referral to ISO 15189:2012 accredited laboratory (UKAS reference 8393) for the purposes of HPV DNA test		A
	15189:2012 accredited laboratory (UKAS reference	Interpretation and reporting of		A



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
HUMAN TISSUES AND FLUIDS	Histopathology Preparation and examination of tissue to identify or exclude morphological & cytological abnormalities	Macroscopic and Microscopic examination using in-house procedures (listed) in conjunction with manufacturer's instructions for the following methods (where relevant)	
Formalin fixed tissues		Macroanalysis and dissection, Advanced Specimen Dissection HIRDPRO95	A
		Specimen dissection downdraft benches:	
		HIRDPRO151 Cut Up Tasks	E
		Decalcification HIRDPRO40 adult HIRDPRO104 paediatric	A, D
		Tissue processing, automated method using Thermo Excelsior AS Leica ASP300, Peloris Sakura VIP 6AI Shandon Excelsior	A, D, E A A D D E
		Processing Tissue to Wax in Cellular Pathology	
		HIRDPRO137 Adult HIRDPRO12 – Paediatric	A D
		IEQPRO2 Shandon Excelsior Processors	E
		Tissue embedding using embedding centres; Leica, Thermo Shandon Leica Histocore Arcadia	A, D A, E A, E D
		Shared (ORC AH/PH): Manual Paraffin Wax Embedding	
		HIMLPRO21 HIMLPRO79 Tissue Embedding	A, D E



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HUMAN TISSUES AND FLUIDS (cont'd)	<u>Histopathology (</u> cont'd) Preparation and examination to identify or exclude morphological & cytological abnormalities (cont'd)	Macroscopic and Microscopic examination using in-house procedures (listed) in conjunction with manufacturer's instructions for the following methods (where relevant)	A, E
Formalin fixed tissues (cont'd)		Auto embedding using the Sakura Paraform tissue embedding cassettes and the Sakura A120 automated embedder HIRDPRO50 HIMLPRO19 HIMLPRO79 Wythenshawe Tissue Embedding Tissue sectioning (Microtomy): Manual method using microtomes: Leica Leica Histocore multicut Leica RM2255 Leica RM2145 Leica RM2235 Leica RM2245 Leica RM2245 Leica RM2135 Microm HM335E ThermoShandon Finesse E / ME+ Microtomy HIMLPRO2 Adult Histopathology Routine Microtomy HIMLPRO13 Paediatric Histopathology HIMLPRO71 Cutting Sections on Manual Microtomes	A, D, E A / E A D A, D E A D E A D E



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HUMAN TISSUES AND FLUIDS (cont'd)	Histopathology (cont'd) Preparation and examination to identify or exclude morphological & cytological abnormalities (cont'd)	Macroscopic and Microscopic examination using in-house procedures (listed) in conjunction with manufacturer's instructions for the following methods (where relevant)	
Fresh tissue Frozen tissue		Rapid frozen section. Cryotomy and manual Haematoxylin and Eosin (H&E) staining using ThermoFisher NX50 Leica Cryostat Bright OTF 5000: Procedure for frozen sections: HIRDPRO34 Paediatric Histopathology CYSPPRO73 Frozen Section Technique Preparation of Frozen Sections Use of Class 2 Cabinet and Cryostats HIRDPRO109 Adult Histopathology H&E Frozen/ Wax hand Staining HISMPRO34 Adult Histopathology HIMLPRO74 Hand H&E protocol HIRDPRO34	A, D, E A, E D C E A A E D



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HUMAN TISSUES AND FLUIDS (cont'd)	Histopathology (cont'd) Preparation and examination to identify or exclude morphological & cytological abnormalities (cont'd)	Macroscopic and Microscopic examination using in-house procedures (listed) in conjunction with manufacturer's instructions for the following methods (where relevant)	
Formalin fixed, paraffin embedded (FFPE) tissue	Basophilic and eosinophilic tissue structures	Routine H&E staining and coverslipping	A, D, E
		Automated method using Tissue- Tek Prisma Plus Automated Stainer and Film Coverslipper, Leica Autostainer XL and Leica Coverslipper CV5030 H&E staining Decal HISMPRO35	A, E D
		Shared (AH/PH ORC): Staining Techniques in Cellular Pathology HISMPRO43	A, D
		HIMLPRO75 Tissue-Tek Prisma Plus Autostainer and coverslipper	E
	Detection of the following:	Special staining using manual methods and the following stains	A, D, E
	Mast cells	Acid Toluidine Blue HISMPRO28 Adult	A
		HISMPRO61 Toluidine Blue	E
	Acid & Neutral mucins	Alcian Blue PAS + Diastase HISMPRO10 Adult HISMPRO49 Paediatric	A D
	Acid & Neutral mucins	Alcian Blue PAS HISMPRO30	A
	Hyaluronic acid	Alcian Blue + Hyaluronidase HISMPRO12	A
	Acid mucins	Alcian Blue HISMPRO10	A



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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
HUMAN TISSUES AND FLUIDS (cont'd)	Histopathology (cont'd) Preparation and examination to identify or exclude morphological & cytological abnormalities (cont'd)	Macroscopic and Microscopic examination using in-house procedures (listed) in conjunction with manufacturer's instructions for the following methods (where relevant)	
Formalin fixed, paraffin embedded (FFPE) tissue	Detection of the following: (cont'd)	Special staining using manual methods and the following stains	A
(cont'd)	Acid mucins	Alcian Blue (pH2.5) – Acid Mucins & ABPAS HISMPRO49	D
	Amyloid	Alkaline Congo Red HISMPRO53	D
	Amyloid	Congo Red Highman's HISMPRO22	A
	Elastic/Muscle/Connective tissue	Elastic Van Gieson HISMPRO31 HISMPRO51	A D
	Elastic/Muscle/Connective tissue	HISMPRO56 Elastic Stains (HEEL)	E
	Haematopoietic cells	Giemsa for haematological cells HISMPRO23	A
	Gram positive and Gram- negative bacteria	Gram HISMPRO32	A
		Modified Gram HISMPRO45	D
		HISMPRO57 Gram stain	E
	Fungi	Grocott HISMPRO33 HISMPRO2	A D
	Collagen	Haematoxylin Van Gieson HISMPRO36	A, D
	Myelin	Luxol Fast Blue H&E HISMPRO6	D



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HUMAN TISSUES AND FLUIDS (cont'd)	Histopathology (cont'd) Preparation and examination to identify or exclude morphological & cytological abnormalities (cont'd)	Macroscopic and Microscopic examination using in-house procedures (listed) in conjunction with manufacturer's instructions for the following methods (where relevant)	
Formalin fixed, paraffin embedded (FFPE) tissue	Detection of the following: (cont'd)	Special staining using manual methods and the following stains	
	Fibrin	MSB HISMPRO13 HISMPRO50	A D
	Melanin	Masson Fontana HISMPRO25 HISMPRO47	A D
	Connective tissue	Masson Trichrome HISMPRO14	A, D
	Removal of melanin	Melanin Bleach HISMPRO20	А
	Helicobacter	Modified Giemsa HISMPRO16	A
	Acid fast bacilli	Modified ZN HISMPRO52	D
	Adipose cells	Oil Red O HISMPRO4	D
	Hepatitis B surface antigen, copper associated protein	Orcein HISMPRO3	A, D
		HISMPRO60 Shikata	E
	Fungi/Glycogen/Mucins	PAS HISMPRO37	A, D
	Basement membranes	Periodic Acid Methenamine Silver HISMPRO38	A, D
	Digestion of glycogen	PAS Diastase HISMPRO39	A, D



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	measurement	Equipment/Techniques used	Code
HUMAN TISSUES AND FLUIDS (cont'd)	Histopathology (cont'd)	Macroscopic and Microscopic examination using in-house	
	Preparation and examination to identify or exclude morphological & cytological abnormalities (cont'd)	procedures (listed) in conjunction with manufacturer's instructions for the following methods (where relevant)	
Formalin fixed, paraffin embedded (FFPE) tissue (cont'd)	Detection of the following: (cont'd)	Special staining using manual methods and the following stains	
	Ferric Iron and haemosiderin	Perl's HISMPRO17 HISMPRO48	A D
	Reticulin fibres	Reticulin stain HISMPRO40 HISMPRO7	A D
	Copper	Rhodanine HISMPRO26	A
	Copper	Rubeanic Acid HISMPRO18	A
	Amyloid	Sirius Red HISMPRO19	A
	Neutral mucin	Southgates Mucicarmine HISMPRO41	A
	Acid mucins	Toluidine Blue – Mast Cells HISMPRO1	D
	Calcium	Von Kossa HISMPRO15	A
	Mycobacterium leprae	Wade Fite HISMPRO42	A
	Spirochaetes	Warthin-Starry HISMPRO9	A
	Acid fast bacilli	Ziehl-Neelsen HISMPRO27	A
	Proteoglycans, acid mucins, hyaluronic acid	Colloidal Iron HISMPRO11	A



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HUMAN TISSUES AND FLUIDS (cont'd)	Histopathology (cont'd) Preparation and examination to identify or exclude morphological & cytological abnormalities (cont'd)	Macroscopic and Microscopic examination using in-house procedures (listed) in conjunction with manufacturer's instructions for the following methods (where relevant)	
Formalin fixed, paraffin embedded (FFPE) tissue	Detection of the following:	Documented in-house procedures for automated (A) staining using the Ventana Benchmark for special stains:	E
	Acid Mucopolysaccharides Acid and neutral mucopolysaccharides Amyloid Helicobacter/microorganisms Fungi (Aspergillus and Pneumocystis)	HISMPRO63 Alcian Blue HISMPRO63 Alcian Blue Periodic Acid Schiff + / - Diastase HISMPRO63 Congo Red HISMPRO63 Giemsa HISMPRO63 Grocott HISMPRO63	
	Connective tissue Neutral mucopolysaccharides, glycogen and fungus Haemosiderin and ferric acid Reticulin fibres Tubercle bacilli	HISMPRO63 Masson Trichrome HISMPRO63 Periodic Acid Schiff + / - Diastase HISMPRO63 Perl's Prussian Blue HISMPRO63 Reticulin (Gordon and Sweets) HISMPRO63 Ziehl Neelsen	
FFPE, Cell Blocks, Cytological preparations and frozen sections.	Detection of the following:	Immunohistochemistry Automated method using the Roche Ventana Benchmark Ultra,	A, D, E
		Ventana Benchmark Ultra Operation guide HIICCPRO19	A, D
		HIICCPRO28 Immunohistochemistry – Ultraview and OptiView polymer kit and DDISH staining for BenchMark Ultra	E
		Immunofluorescence staining HIICCPRO9	А
		Immunofluorescence staining: HIICCPRO1 Paediatric Histopathology	D



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HUMAN TISSUES AND FLUIDS (cont'd)	<u>Histopathology</u> (cont'd) Preparation and examination to identify or exclude morphological & cytological abnormalities (cont'd)	Macroscopic and Microscopic examination using in-house procedures (listed) in conjunction with manufacturer's instructions for the following methods (where relevant)	
FFPE, Cell Blocks, Cytological preparations and frozen sections (cont'd)	Detection of the following: (cont'd)	Immunohistochemistry	
nozen sections (cont d)	Myoepithelial cells, smooth muscle	Actin (Smooth Muscle Actin)	D, E
	Sebaceous carcinoma	ADFP (Adipophilin)	A
	Pan Cytokeratin, epithelial cells	AE1/AE3 (Cytokeratin Cocktail)	A, D
	Neoplastic liver diseases, yolk sac tumours and mixed germ cell tumours	AFP (Alpha-1-Fetoprotein)	A, D, E
	Anaplastic lymphoma	ALK-1	A, D
	ALK positive non-small cell lung carcinomas		E
	NSCLC companion diagnostic	ALK (D5F3)	А
	Hairy cell leukaemia	Annexin A1	A
	Prostate carcinoma	Androgen Receptor	A, E
	GI tract epithelium, fibromatosis, epithelium	B Catenin (Beta Catenin)	A, D, E
	Basal epithelial cells	Basal Cell Cocktail	A
	B cells & Interfollicular T cells	BCL2	A, D, E
	Germinal centre B cells	BCL6	A, D, E
	Differentiates adenocarcinoma from mesothelioma	Ber-EP4 (Epithelial Antigen)	Α, Ε



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HUMAN TISSUES AND FLUIDS (cont'd)	<u>Histopathology</u> (cont'd) Preparation and examination to identify or exclude morphological & cytological abnormalities (cont'd)	Macroscopic and Microscopic examination using in-house procedures (listed) in conjunction with manufacturer's instructions for the following methods (where relevant)	
FFPE, Cell Blocks, Cytological preparations and frozen sections (cont'd)	Detection of the following: (cont'd)	Immunohistochemistry	
	Peritubular and glomerular capillaries	C4d	A
	Tumours of lung, endometrium and ovarian origin	CA125	A
	Pancreatic disease/tumour	CA19.9	А
	Clear cell renal cell carcinoma	CAIX	А
	Medullary thyroid tumours	Calcitonin	A, D
	Smooth muscle	Caldesmon	A, D, E
	Mesothelia, nerves	Calretinin	A, D, E
	Langerhans/ dendritic cells	CD1a	A, D, E
	Peripheral T lymphocytes	CD2	A, D
	Pan T cell marker	CD3	A, D, E
	Helper T Cells	CD4	A, D, E
	T cells, neoplastic B cells, , T cell lymphomas	CD5	A, D, E
	Natural killer T cells	CD8	A, D
	T follicular helper cells, follicular lymphoma	CD10	A, D
	Granulocytes Reed-Sternberg cells	CD10 CD15- leu m1	E E



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HUMAN TISSUES AND FLUIDS (cont'd)	Histopathology (cont'd)	Macroscopic and Microscopic examination using in-house	
	Preparation and examination to identify or exclude morphological & cytological abnormalities (cont'd)	procedures (listed) in conjunction with manufacturer's instructions for the following methods (where relevant)	
FFPE, Cell Blocks, Cytological preparations and frozen sections (cont'd)	Detection of the following: (cont'd)	Immunohistochemistry	
	Reed-Sternberg, activated T cells, Hodgkin's lymphoma	CD15	A, D
	Pan B cell marker, follicular dendritic cells	CD20	A, D, E
	Follicular dendritic cells, B cells, some T cells	CD21	A, D, E
	B Cell lymphocyte differentiation	CD22	A, D
	B cells, Reed-Sternberg cells Follicular dendritic cells	CD23	A, E A, D
	Reed-Sternberg, Hodgkin's lymphoma and ALCL	CD30	A, D, E
	Vascular endothelial cells and Haematopoietic cells	CD31	A, D, E
	Myeloid cells	CD33	А
	Vascular endothelial cells, T cells and some soft tissue	CD34	A, D, E
	B cells, plasma cells	CD38	A, D
	T Cells, myeloid cells	CD43	A, D
	T & B Cells (Pan-lymphocyte marker)	CD45/LCA	A, D, E
	Neurons, glia, schwann, Nk, T cells, neuroendocrine tumour	CD56 / CD56 (NCAM)	A, D, E
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HUMAN TISSUES AND FLUIDS (cont'd)	Histopathology (cont'd) Preparation and examination to identify or exclude	Macroscopic and Microscopic examination using in-house procedures (listed) in conjunction with manufacturer's instructions for	
	morphological & cytological abnormalities (cont'd)	the following methods (where relevant)	
FFPE, Cell Blocks, Cytological preparations and frozen sections (cont'd)	Detection of the following: (cont'd)	Immunohistochemistry	
	Natural killer cells, Hodgkin's and T cell markers	CD57	A, D, E
	Megakaryocytes	CD61	А
	Macrophages	CD68	A, D, E
	Pan B cell marker	CD79a	A, D, E
	Pancreatic islets, T cells, neuroectodermal tumour cells	CD99	A, D, E
	Mast cells, GIST tumours	CD117 CD117 (CKIT)	A, D E
	Epithelium, plasma cells	CD138	A, D
	Histocytes, monocytes and macrophages in spleen and peripheral bolld	CD163	A, D
	Intestinal epithelium, Adenocarcinoma and carcinoid (intestinal epithelium)	CDX2	Α, Ε
	Adenocarcimoma	CEA (mono and poly)	А
	Epithelium	CEA	E
	Epithelium	CEA2	E
	Pancreatic islets, neurons, neuroendocrine cells	Chromogranin Chromogranin A	A, D E
	All epithelial types	CKAE1/AE3	E



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HUMAN TISSUES AND FLUIDS (cont'd)	Histopathology (cont'd) Preparation and examination	Macroscopic and Microscopic examination using in-house procedures (listed) in conjunction	
	to identify or exclude morphological & cytological abnormalities (cont'd)	with manufacturer's instructions for the following methods (where relevant)	
FFPE, Cell Blocks, Cytological preparations and frozen sections (cont'd)	Detection of the following: (cont'd)	Immunohistochemistry	
	Basal epithelial cells, stratified squamous epithelium, mesotheliomas	CK5/6	A, E
	Simple epithelium, pneumocytes	CK7	A, D, E
	Simple glandular/transitional epithelium	CK8/18 (CAM 5.2)	A, D, E
	Basal epithelial cells	CK14	A, E
	GI tract epithelium, papillary thyroid carcinoma	CK19	A, E
	Small bowel / stomach epithelium / adenocarcinomas / columnar epithelium	СК20	A, D, E
	Cytokeratin marker	СК 34β E12	A, E
	Broad spectrum epithelial marker	CK MNF116	A, D, E
	CMV infected cells	CMV (Cytomeglovirus)	A, D, E
	Mantle Cell lymphoma, Expressed in variety of tumours	Cyclin D1	Α, Ε
	Endothelium, lymphatic, lymphatic endothelium, mesothelioma	D2-40 (Podoplanin)	A, D, E



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HUMAN TISSUES AND FLUIDS (cont'd)	<u>Histopathology</u> (cont'd) Preparation and examination to identify or exclude morphological & cytological abnormalities (cont'd)	Macroscopic and Microscopic examination using in-house procedures (listed) in conjunction with manufacturer's instructions for the following methods (where relevant)	
FFPE, Cell Blocks, Cytological preparations and frozen sections (cont'd)	Detection of the following: (cont'd)	Immunohistochemistry	
nozen sections (cont d)	Smooth muscle, skeletal cardiac, desmin filaments in muscle	Desmin	A, D, E
	GIST tumours	DOG1	A, E
	Epithelial cells, normal ductal epithelial cells, ductal adenocarcinoma	E-Cadherin	A, E
	EBV infected cells	EBV In-Situ Hybridisation	А
	Epithelial cells	EMA (Epithelial Membrane Antigen)	A, D, E
	Oestrogen receptor	ER (Oestrogen Receptor)	A, E
	Endothelial cells	ERG	A
	Endothelial cells	Factor VIII (Von Willebrand Factor)	A, D, E
	Dendritic cells	Factor X111A	E
	Fluorescent detection of Kappa light chains	FITC Anti-KAPPA	A
	Fluorescent detection of Lambda light chains	FITC Anti-LAMBDA	A
	Fluorescent detection of IgA Immunoglobulins	FITC IgA	A, D
	Fluorescent detection of IgG Immunoglobulins	FITC IgG	A, D



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FFPE, Cell Blocks, Cytological preparations and frozen sections (cont'd)	Detection of the following: (cont'd)	Immunohistochemistry	
nozen sections (cont d)	Fluorescent detection of IgM Immunoglobulins	FITC IgM	A, D
	Fluorescent detection of complement C3	FITC C3	A, D
	Fluorescent detection of complement C1Q	FITC C1Q	A, D
	Fluorescent detection of Fibrinogen	FITC Fibrinogen	A, D
	Peptide hormone gastrin	Gastrin	А
	Bladder cancers, breast cancer	GATA 3 (GATA binding protein 3)	A, E
	Breast apocrine tumours /prostate carcinomas	GCDFP-15 / Gross Cystic disease fluid protein	A, E
	Astrocytes, glial (brain), demonstrates astrocytes	GFAP (Glial Fibrillary Acidic Protein)	A, D
	Alpha islets of langerhans cells, pancreatic islets	Glucagon	A, D
	Differentiates hepatocellular tumours	Glutamine Synthetase	A
	Classification of lymphomas / Erythrocytes	Glyco A (Glycophorin A)	A, E
	Hepatocellular carcinomas	Glypican 3	А
	Helicobacter Pylorii infected gastric ducts & crypt	H pylori (Helicobacter pylori)	A, D, E



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FFPE, Cell Blocks, Cytological preparations and frozen sections (cont'd)	Detection of the following: (cont'd)	Immunohistochemistry	
	Mesothelioma	HBME-1 (Mesothelial Cell)	А
	Trophoblasts, Germ cell tumour marker	hCG (Human Chorionic Gonadotropin)	A, D
	Hepatocytes	Hepatocyte Hep Par 1	A E
	Herpes virus, Kaposi's sarcoma	HHV8 (Human Herpes Virus Type 8)	A, D
	Melanocytic cells	HMB45 (anti-Melanosome)	A, D, E
	Endometrial and prostate cancer	HNF1B	A
	HSV-1 infected cells	HSV-1 (Herpes Simplex Virus-1)	A, D, E
	Aid in assessment of breast cancer when Herceptin treatment is considered.	HER-2	E
	IgA immunoglobulins	IgA	А
	IgD immunoglobulins	IgD	А
	IgG immunoglobulins	IgG	А
	Subset of IgG Immunoglobulin	IgG4	А
	IgM immunoglobulins	lgM)	A, D
	Adrenal, granulosa cells	Inhibin	A, D
	Beta cells islets of langerhans	Insulin	A, D



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HUMAN TISSUES AND FLUIDS (cont'd)	Histopathology (cont'd)	Macroscopic and Microscopic examination using in-house	
	Preparation and examination to identify or exclude morphological & cytological abnormalities (cont'd)	procedures (listed) in conjunction with manufacturer's instructions for the following methods (where relevant)	
FFPE, Cell Blocks, Cytological preparations and frozen sections (cont'd)	Detection of the following: (cont'd)	Immunohistochemistry	
	Kappa light chains	Карра	А
	Proliferation marker	Ki67	A, D, E
	Langerhans cells	Langerin	A, D
	Histiocytes, granulocytes and monocytes	Lysozyme	A, D
	Lambda light chains	Lambda	А
	Apocrine breast tumours	Mammaglobin	E
	Mast cells	MCT (Mast Cell Tryptase)	А
	Melanocytes	MART-1/Melan A	A, D, E
	MMR testing for Lynch syndrome	MLH1	A
	Epithelial cells	MOC-31 (Epithelial Specific Antigen/Ep-CAM)	A
	MMR testing for Lynch syndrome	MSH2	A
	MMR testing for Lynch syndrome	MSH6	A
	Myeloid cells, leukaemia, melanoma marker	MPO (Myeloperoxidase)	Α, Ε
	Epithelial cells in various normal tissues	MUC-4	A, D
	Rhabdomyosarcoma	MyoD1 / Myosin	A, D, E



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FFPE, Cell Blocks, Cytological preparations and	Detection of the following: (cont'd)	Immunohistochemistry	
frozen sections (cont'd)	Rhabdomyosarcoma and Wilm's tumours, neutrophis and monocytes	Myogenin	Α, Ε
	Skeletal and cardiac muscle	Myoglobin	А
	Lung adenocarcinoma	Napsin A	А
	Smooth muscle	Napsin	E
	Neurofilaments, neurons	Neurofil (Neurofilament)	А
	B cells	Oct-2	А
	Germ cell tumours	Oct-3/4	A, D
	HPV marker	P16	A, E
	Lung, bladder, prostate carcinomas	P40	A, E
	Tumour suppressor gene	P53	A, D, E
	Beckwith-Wiedemann syndrome / hydatidiform mole	P57	A, E
	Basal cell epithelium	P63	A, E
	Molar Pregancy	P504S	E
	Prostate adenocarcinoma	PAP	А
	Clear cell renal cell carcinomas	PAX-2	A
	B cells	PAX-5	A, D



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FFPE, Cell Blocks, Cytological preparations and frozen sections (cont'd)	Detection of the following: (cont'd)	Immunohistochemistry	
	Renal cell/ovarian carcinomas	PAX-8	A, E
	NSCLC companion diagnostic	PD-L1 (SP263)	А
	Triple negative breast cancer	PD-L1 (SP142)	E
	Neurons	PGP 9.5	A, D
	Germ cells, placenta	PLAP	A, D, E
	MMR testing for Lynch syndrome	PMS2	A
	Polyoma virus	Polyoma (SV40)	A
	Progesterone marker	Progesterone Receptor	A, E
	Prostatic adenocarcinoma	Prostate Specific Antigen	A, E
	Prostatic intraepithelial neoplasia	Racemase (AMACR/P504S)	A
	Renal cell carcinomas	RCC	A
	ROS-1 Proto-oncogene Receptor Tyrosine Kinase positive lung cancer	ROS-1	E
	Melanocytes, nerve cells	S100	A, D, E
	Pancreatic islet delta cells	Somatostatin	A, D
	Melanocytes and myoepithelial cells, melanoma	SOX-10	A, D
	Solitary fibrous tumour	STAT6	А



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FFPE, Cell Blocks, Cytological preparations and frozen sections (cont'd)	Detection of the following: (cont'd)	Immunohistochemistry	
	Pancreatic islet cells, synaptic and neuroendocrine	Synapotphysin	A, D, E
	Lymphoblasts, cortical thymocytes, lymphoblastic leukaemia	TdT	
	Vascular tumours	Thrombomodulin	A, E
	Thyroid follicular cells, thyroid follicular carcinoma	Thyroglobulin	A, D, E
	Thyroid, thyroid tumours	TTF-1 TTF1 SPT24	A, D, E E
	Bladder/prostate/renal cancers	Uroplakin II	A
	Sarcomas, melanomas, lymphomas	Vimentin	A, D, E
	Wilms tumour	WT-1 (Wilms' Tumour Protein)	A, D, E



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FFPE, Cell Blocks, Cytological preparations and	Detection of the following: (cont'd)	Immunohistochemistry	
frozen sections (cont'd)		Immunofluorescent Detection of Renal Immunoglobulins HICCPRO1	
		Immunohistochemistry for non- paraffin material HIICCPRO16	
		Optimisation and Verification of Antibodies	
		HIICCPR07	
	Detection of Adenovirus	Adenovirus	D
	Alveolar Rahbdomyosarcoma	AP2B	D
	B cell Lymphocytes	BOB 1	D
	Neuroendocrine cells for interstitial lung disease	Bombesin	D
	Chordoma	Brachyury	D
	Rhabdoid tumours	BRG-1	D
	Smooth muscle cells	Calponin	D
	Epithelial and endothelial hepatocytes	CD13	D
	Basement membranes	Collagen 4	D
	Embryonal, Rhabdomyosarcoma, S. Sarcoma	EGFR	D



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FFPE, Cell Blocks, Cytological preparations and frozen sections (cont'd)	Detection of the following: (cont'd)	Immunohistochemistry	
	Ependyoma meningioma	EMA 1/20	D
	Histiocytes, dermatofibroma	Factor XIIIa (F13a)	D
	Ewing's / PNET	Fli-1	D
	Vascular endothelial cells, Infantile haemangioma	Glut-1	D
	Histone 3 trimethylated on lysine 27	H3. K27M	D
	Smooth muscle, skeletal cardiac	HHF35(MSA)	D
	Rhabdoid tumour	INI-1	D
	Embryonal tumour	LIN28A	D
	Histiocytes, squamous epithelia	Mac 387	D
	Dendritic cells, cerebral cortex	MAP-2	D
	Melanocytes, melanoma	MITF	D
	B cells	MUM1	D
	Myelin of the central and peripheral nervous systems	Myelin Basic Protein (MBP)	D
	Neurons	NeuN	D
	Neurofilaments, neurons	NFP	D
	Neurons neuroendocrine	NSE	D



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HUMAN TISSUES AND FLUIDS (cont'd)	<u>Histopathology</u> (cont'd) Preparation and examination to identify or exclude morphological & cytological abnormalities (cont'd)	Macroscopic and Microscopic examination using in-house procedures (listed) in conjunction with manufacturer's instructions for the following methods (where relevant)	
FFPE, Cell Blocks, Cytological preparations and frozen sections (cont'd)	Detection of the following: (cont'd)	Immunohistochemistry	
	NUT1 carcinoma	NUT-1	D
	Glial cells	OLIG-2	D
	Parvovirus Infected cells	Parvovirus	D
	Neuroblastoma	PHOX2B	D
	Pneumocystis carinii infected cells	Pneumocystis carinii	D, E
	Hepatocytes/ choroid lesions	Pre-albumin (transthyretin)	D
	Pneumocytes	SPA	D
	Pneumocytes	SPB	D
	Pneumocytes	SPC	D
	Translocation renal cell CA/ Alveolar soft sarcoma	TFE3	A
	Synovial sarcoma	TLE1	А
	Wilms tumour	WT1 N	



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HUMAN TISSUES AND FLUIDS (cont'd)	<u>Histopathology</u> (cont'd) Preparation and examination to identify or exclude morphological & cytological abnormalities (cont'd)	Macroscopic and Microscopic examination using in-house procedures (listed) in conjunction with manufacturer's instructions for the following methods (where relevant)	
FFPE tissue samples	Overexpression of BCOR in small round, spindle cell or undifferentiated sarcomas	BCOR	D
	Damaged neuronal axons	Beta Amyloid	D
	Covid-19 virus	Covid-19	D
	Embryonal rhabdomyosarcoma	HMGA2	D
	Toxoplasmosis	Toxoplasma gondii	D
Fresh fixed paraffin embedded tissue: Breast tissue	Determination of Her2 gene status.	DDISH (chromogenic in-situ hybridization) HIICCFRM66 HIICCPRO28 HIICCPRO29	E
FFPE slides (Formalin fixed paraffin embedded) tissue on glass slides	Morphological and cytological abnormalities	Interpretive/diagnostic microscopy HIREPRO15	E



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HUMAN TISSUES AND FLUIDS (cont'd)	<u>Histopathology</u> (cont'd) Preparation and examination to identify or exclude morphological & cytological abnormalities (cont'd) Electron Microscopy	Macroscopic and Microscopic examination using in-house procedures (listed) in conjunction with manufacturer's instructions for the following methods (where relevant)	
Resin tissue blocks	Electron Microscopy Examination of tissues to identify or exclude ultrastructural morphological abnormalities for diagnosis	Electron microscopy using Reichert Jung Ultracut E Ultramicrotome, JEOL JEM-1400 Electron Microscope Secondary fixation of specimens for Electron Microscopy using Osmium tetroxide (Osmicating) HIST INS EM 002 Hand processing EM Samples to Araldite HIST INS EM 003 Embedding in Electron Microscopy HIST INS EM 008 EM-Block Trimming HIST INS EM 012 Ultramicrotomy – Cutting Semi Thin Sections HIST INS EM 013 HIEMPRO19 Toluidine Blue Staining of semi-thin sections in Electron Microscopy HIST INS EM 017	A



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Resin tissue blocks and cell preparations	Examination of tissues to identify or exclude ultrastructural morphological abnormalities for diagnosis	Staining Ultra-Thin sections on Grids HIEMPRO23	A
		Digital Imaging & Ultrastructural Review Processing in Electron Microscopy HIEMPRO20	A
		Basic Operation of the JEOL-1400 Electron Microscope HIEMPRO18	A
		Extraction, Dissection and Dewaxing of tissue from Paraffin Wax Blocks for Electron Microscopy HIEMPRO13	A
		Dissection of Non-embedded tissue in Electron Microscopy HIEMPRO21	A
Human soft tissue tumours and neuroblastomas	Molecular detection of:	Manual Fluorescent in-situ hybridisation:	D
		GFL Molecular Diagnostic Tests HIMOLFRM4	D
		GFL Reporting a FISH Result HIMOLPRO16	D
		GFL Paraffin FISH HIMOLPRO8	D



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Human soft tissue tumours and neuroblastomas (cont'd)	Molecular detection of: (cont'd)	Manual Fluorescent in-situ hybridisation	
	Numerical gene aberrations of Tp53 and 17q22 associated with high risk neuroblastoma and medulloblastoma	17q Gain (p53/MPO) 17q Gain (tel17p/tel17q)	D
	Deletion of the 1p36 region associated with higher risk neuroblastoma	1p36 Deletion	D
	ALK gene rearrangements associated with Analaplastic karge cell lymphoma and inflammatory	ALK Break Apart	D
	DDIT3 gene rearrangements associated with Myxoid liposarcoma	CHOP (DDIT3) Break Apart	D
	COL1A1-PDGFB fusions associated with Dermatofibrosarcoma protuberans	COL1A1-PDGFB fusion	D
	ETV6 gene rearrangements associated with Infantile fibrosarcoma/CMN and mammary analogue carcinoma	ETV6 Break Apart	D
	EWSR1-ERG fusions associated with Ewing's sarcoma/PNET	EWS – ERG Fusion	D
	EWSR1-FLI1 fusions associated with Ewing's sarcoma/PNET	EWS – FLI1 Fusion	D



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Human soft tissue tumours and neuroblastomas (cont'd)	Molecular detection of: (cont'd)	Manual Fluorescent in-situ hybridisation	
	EWSR1 gene rearrangements associated with a variety of different tumours	EWS Break Apart EWSR break apart EWSR1 Break Apart	D D D
	FOXO1 gene rearrangements associated with Alveolar Rhabdomyosarcoma	FOXO1 Break Apart	D
	FOXO1-PAX3 fusions associated with Alveolar Rhabdomyosarcoma	FOXO1-PAX3 Fusion	D
	FOXO1-PAX7 fusions associated with Alveolar Rhabdomyosarcoma	FOXO1-PAX7 Fusion	D
	FUS gene rearrangements associated with a variety of different tumours	FUS Break Apart	D
	Amplification of the MDM2 gene associated with Lipomatous tumour	MDM2 Amplification	D
	Amplification of the MYC-C gene associated with higher risk medulloblastoma	MYC-C	D
	Amplification of the MYC-N gene associated with higher risk neuroblastoma and medulloblastoma	MYC-N Amplification	D
	PAX3 gene rearrangements associated with Alveolar Rhabdomyosarcoma	PAX3 Break Apart	D



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Histopathology (cont'd) Preparation and examination to identify or exclude morphological & cytological abnormalities (cont'd)	Macroscopic and Microscopic examination using in-house procedures (listed) in conjunction with manufacturer's instructions for the following methods (where relevant)	
Molecular detection of: (cont'd)	Manual Fluorescent in-situ hybridisation	
PAX7 gene rearrangements associated with Alveolar Rhabdomyosarcoma	PAX7 Break Apart	D
Deletion of the SMARCB1 region associated with Rhabdoid tumours	SMARCB1 deletion	D
SS18 gene rearrangements associated with Synovial sarcoma	SS18	D
TFE3 gene rearrangements associated with Renal cell carcinoma and alveolar soft part tumour	TFE3 Break apart	D
USP6 gene rearrangements associated with Aneurysmal bone cyst	USP6 break apart	D
WT1 gene rearrangements associated with desmoplastic small round cell tumours	WT1 break apart	D
Chromosome 6 monosomy	CEN6	D
	measured/Range of measurementHistopathology (cont'd)Preparation and examination to identify or exclude morphological & cytological abnormalities (cont'd)Molecular detection of: (cont'd)PAX7 gene rearrangements associated with Alveolar RhabdomyosarcomaDeletion of the SMARCB1 region associated with Rhabdoid tumoursSS18 gene rearrangements associated with Synovial sarcomaTFE3 gene rearrangements associated with Renal cell carcinoma and alveolar soft part tumourUSP6 gene rearrangements associated with Aneurysmal bone cystWT1 gene rearrangements associated with desmoplastic small round cell tumours	measured/Range of measurementStandard spectrications/ Equipment/Techniques usedHistopathology (cont'd)Macroscopic and Microscopic examination using in-house procedures (listed) in conjunction with manufacturer's instructions for the following methods (where relevant)Molecular detection of: (cont'd)Manual Fluorescent in-situ hybridisationPAX7 gene rearrangements associated with Alveolar RhabdomyosarcomaPAX7 Break ApartDeletion of the SMARCB1 region associated with Rhabdoid tumoursSMARCB1 deletionSS18 gene rearrangements associated with Renal cell carcinoma and alveolar soft part tumourSS18 USP6 gene rearrangements associated with Aneurysmal bone cystWT1 gene rearrangements associated with desmoplastic small round cell tumoursWT1 break apart



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Frozen human tissue including muscle and rectal samples	Histochemistry for the identification of the following	Receiving of rectal biopsy fresh samples only HIMLPRO7	D
		Muscle biopsy handling HIMUSPRO1	D
		Reception and treatment of tumours in histopathology HIRDPRO35	D
		Muscle Enzyme histochemistry	D
		NADH HIMUSPRO6	
		SDH HIMUSPRO9	
		Cytochrome Oxidase HIMUSPRO7	
		Phosphorylase HIMUSPRO10	
		Combined CytOxSDH HIMUSPRO8	
		Acid Phosphatase HIMUSPRO13	
		Muscle Biopsy QC – Check Out HIMUSPRO3	
		Muscle QC Form HIMUSFRM3	



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Frozen human tissue including muscle and rectal samples (cont'd)	Histochemistry for the identification of the following (cont'd)	Muscle QC: Quick Reference Guide HIMUSFRM2	
		Muscle Request Log HIMUSFRM4	
		Muscle: Solution Preparation Instructions HIMUSFRM5	
		Histochemistry staining	D
	Mitochondrial abnormalities	NADH	D
	Mitochondrial abnormalities	Cytochrome Oxidase C	D
	Mitochondrial abnormalities / SDH activity	Cytochrome Oxidase C / SDH	D
	SDH activity	SDH	D
	McCardles disease	Phosphorylase	D
	Lysosyme activity	Acid Phosphatase	D
	Muscle IHC for the identification of	Muscle IHC HIMUSPRO5	D
	Membranous Proteins	Adhalin	D
	Membranous Proteins	Beta sarcoglycan	D
	Inflammatory Myopathies	CD3	D
	Inflammatory Myopathies	CD4	D
	Inflammatory Myopathies	CD8	D



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HUMAN TISSUES AND FLUIDS (cont'd)	<u>Histopathology</u> (cont'd) Preparation and examination to identify or exclude morphological & cytological abnormalities (cont'd)	Macroscopic and Microscopic examination using in-house procedures (listed) in conjunction with manufacturer's instructions for the following methods (where relevant)	
Frozen human tissue including muscle and rectal samples (cont'd)	Histochemistry for the identification of the following (cont'd)	Histochemistry staining (cont'd)	
	Inflammatory Myopathies	CD20	D
	Inflammatory Myopathies	CD45	D
	Inflammatory Myopathies	CD68	D
	Inflammatory Myopathies	CD79a	D
	Membrane attack complexes	C5b9	D
	Membranous Proteins	Dystrophin 1	D
	Membranous Proteins	Dystrophin 2	D
	Membranous Proteins	Dystrophin 3	D
	Membranous Proteins	Dysferlin	D
	Membranous Proteins	Emerin	D
	Membranous Proteins	Merosin2 300Kd	D
	Membranous Proteins	Merosin 80Kd	D
	Muscle Fibre Typing	MHC1	D
	Muscle Fibre Typing	MHCN	D
	Muscle Fibre Typing	MHCF	D
	Muscle Fibre Typing	MNCS	D
	Muscle Fibre Typing	MHCD	D
	Membranous Proteins	Spectrin	D



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Manchester University NHS Foundation Trust

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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code		
HUMAN TISSUES AND FLUIDS (cont'd)	Histopathology (cont'd) Preparation and examination to identify or exclude morphological & cytological abnormalities (cont'd)	Macroscopic and Microscopic examination using in-house procedures (listed) in conjunction with manufacturer's instructions for the following methods (where relevant)			
Frozen human tissue including muscle and rectal samples	Muscle Tinctorial / special stains for the identification of	Histochemistry staining using the following SOPs			
Samples		PAS and PAS Digest Technique for Muscle HIMUSPRO12			
		Modified Trichrome for Muscle Biopsies HIMUSPRO11			
	Tissue morphology	H&E	D		
	Glycogen storage disease	PAS	D		
	Glycogen storage disease	PAS/D	D		
	Lipid storage Disease	Oil Red O	D		
	Mitochondrial abnormalities	Modified Trichrome	D		
Frozen human tissue including muscle and rectal samples	Rectal Histochemistry for the identification of	Histochemistry staining using Acetylcholine Esterase method HISMPRO54	D		
	Identification of Neurons in rectal biopsy – Absence indicates Hirsch sprung Disease	ACHE Acetyl Choline Esterase			
Slides prepared in-house from the specimens listed above	Morphological assessment and interpretation/diagnosis	Microscopy using Nikon, Olympus, Zeiss, Leica and Leitz microscopes and SOPs CPQUALPRO23 and HIREPRO7	A, D, E		
END					