


Schedule of Accreditation

issued by

United Kingdom Accreditation Service

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

 UKAS MEDICAL 9775 Accredited to ISO 15189:2012	Liverpool University Hospitals NHS Foundation Trust	
	Issue No: 005 Issue date: 04 November 2021	
	Blood Sciences Department Aintree University Hospital Longmoor Lane Liverpool L9 7AI	Contact: Dr. Lisa Bailey Tel: 0151 706 4374 E-Mail: lisa.bailey@liverpoolcl.nhs.uk Website: www.liverpoolcl.nhs.uk
Testing performed at the above address only		

Locations covered by the organisation and their relevant activities

Site activities performed away from the location listed above:

Location details	Activity
Main theatre A Aintree University Hospital	Storage of blood only. Under management responsibility of laboratory but no testing occurs at this site.
Phoenix Day Unit Aintree University Hospital	Storage of blood only. Under management responsibility of laboratory but no testing occurs at this site.
The Walton Centre Lower Lane Liverpool L9 7LJ	Storage of blood only. Under management responsibility of laboratory but no testing occurs at this site.
AED Theatre recovery	Storage of blood only. Under management responsibility of laboratory but no testing occurs at this site.



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DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
HUMAN BODY FLUIDS	<u>Biochemistry examination activities for the purposes of clinical diagnosis:</u> Quantitative determination of:	Documented in house methods and manufacturers instructions for
Serum/Urine	Sodium Potassium Chloride	Roche Cobas 8000 ISE Module (ion selective electrodes) BS-CORE-SOP-12 BS-CORE-SOP-30 BS-CORE-SOP-121
Serum/Plasma	Albumin Alkaline Phosphatase ALT AST Bicarbonate Carbamazepine Cholesterol Creatine Kinase (CK) C Reactive Protein Creatinine Direct bilirubin Gentamycin Gamma GT HDL Cholesterol Iron LDH Lithium Paracetamol Phenytoin Salicylate Theophylline Total bilirubin Triglyceride UIBC Valproate Vancomycin	Roche Cobas 8000/C702 Module (photometric) BS-CORE-SOP-25 BS-CORE-SOP-16 BS-CORE-SOP-112 BS-CORE-SOP-51 BS-CORE-SOP-123 BS-CORE-SOP-13 BS-CORE-SOP-9 BS-CORE-SOP-64 BS-CORE-SOP-39 BS-CORE-SOP-40 BS-CORE-SOP-107 BS-CAUH-SOP-18 BS-CORE-SOP-61 BS-CORE-SOP-3 BS-CORE-SOP-57 BS-CORE-SOP-109 BS-CORE-SOP-38 BS-CORE-SOP-22 BS-CORE-SOP-8 BS-CORE-SOP-19 BS-CORE-SOP-11 BS-CORE-SOP-119 BS-CORE-SOP-4 BS-CAUH-SOP-18 BS-CORE-SOP-20 BS-CORE-SOP-120
Serum/plasma	Ammonia Ethanol Lactate	BS-CORE-SOP-53 BS-CORE-SOP-5 BS-CORE-SOP-108



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Serum/Plasma	Amylase Calcium Magnesium Phosphate Urate Urea	BS-CORE-SOP-100 BS-CORE-SOP-110 BS-CORE-SOP-29 BS-CORE-SOP-122 BS-CORE-SOP-18 BS-CORE-SOP-10
Urine	Creatinine Microalbumin	BS-CORE-SOP-41 BS-CORE-SOP-18
Serum/Plasma/CSF	Glucose	BS-CORE-SOP-65
Serum/Plasma/urine/CSF	Total Protein	BS-CORE-SOP-102 Roche Cobas 8000/e602 (chemiluminescentimmunoassay with photometric detection)
Serum	AFP CA125 CA19-9 CEA Cortisol Digoxin Ferritin FSH fT3 fT4 Folate GH hCG hs-TnT LH NT-proBNP Oestradiol Progesterone Prolactin PTH PSA	BS-CORE-SOP-26 BS-CORE-SOP-67 BS-CORE-SOP-70 BS-CORE-SOP-71 BS-CORE-SOP-89 BS-CORE-SOP-7 BS-CORE-SOP-117 BS-CORE-SOP-106 BS-CORE-SOP-97 BS-CORE-SOP-96 BS-CORE-SOP-114 BS-CORE-SOP-111 BS-CORE-SOP-63 BS-CORE-SOP-118 BS-CORE-SOP-2 BS-CORE-SOP-17 BS-CORE-SOP-14 BS-CORE-SOP-1 BS-CORE-SOP-15 BS-CORE-SOP-88 BS-CORE-SOP-72
Serum	<u>Detection of SARS-CoV-2 IgG and IgM antibody against nucleocapsid (N) antigen</u>	Elecsys anti-SARS-CoV-2 assay on Roche Cobas e602, SOP BS-CORE-SOP-144



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HUMAN BODY FLUIDS	<u>Biochemistry examination activities for the purposes of clinical diagnosis:</u> SHBG Testosterone TSH Vitamin B12	Documented in house methods and manufacturers instructions for BS-CORE-SOP-23 BS-CORE-SOP-24 BS-CORE-SOP-95 BS-CORE-SOP-66 TOSOH HLC-723G8 (HPLC with photometric detection)
Whole blood only	Glycated haemoglobin (HbA1c)	BS-NONA-SOP-44
Whole blood only	Blood gas analysis: pH Blood gas sodium Blood gas potassium Blood gas chloride Ionized calcium	Roche Cobas b221 Module (direct ion selective electrode) BS-CAUH-SOP-30
Whole blood only	pCO2 pO2	Roche Cobas b221 Module (gas diffusion electrode) BS-CAUH-SOP-30
Whole blood only	Blood gas lactate	Roche Cobas b221 Module (enzymatic amperometry) BS-CAUH-SOP-30
Whole blood only	Total Hb Oxyhaemoglobin Carboxyhaemoglobin Methaemoglobin	Roche Cobas b221 Module (photometric) BS-CAUH-SOP-30
Serum/Urine	Osmolality	Advanced micro Osmometer (freezing point depression) BS-CAUH-SOP-51



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Urine	Calculated Tests (data from primary tests, primary test sample requirements listed under that test)	BS-CAUH-SOP-36
Urine	24hr Urine Calcium Excretion	
Urine	24hr Urine Creatinine Excretion	BS-CAUH-SOP-30
Urine	24hr Urine Phosphate Excretion	
Urine	24hr Urine Potassium Excretion	BS-CAUH-SOP-30
Urine	24hr Urine Protein Excretion	
Urine	24hr Urine Sodium Excretion	BS-CAUH-SOP-30
Urine	24hr Urine rate Excretion	
Urine	24hr Urine Urea Excretion	BS-CAUH-SOP-30
Serum	Acute Kidney Injury	
Serum	Anion Gap	BS-CAUH-SOP-30
24 hour urine and Serum	AST/Platelet Ratio	
24 hour urine and Serum	Calcium Clearance	BS-CAUH-SOP-30
24 hour urine and Serum	Calcium: Creatinine ratio	
24 hour urine and Serum	Calcium Excretion Index	BS-CAUH-SOP-30
Serum	Calculated Osmolarity (part of OGAP)	
Serum	Cholesterol:HDL Ratio	BS-CAUH-SOP-30
24 hour urine and Serum	Creatinine clearance	
Serum	eGFR	BS-CAUH-SOP-30
Serum	Estimated Monomeric Prolactin	
Serum	Fractional Excretion Magnesium	BS-CAUH-SOP-30
Serum	Free Androgen Index	
Serum	Globulin	BS-CAUH-SOP-30
Serum	Iron saturation %	
Serum	LDL	BS-CAUH-SOP-30
Serum	Macroprolactin	
Urine	Urine Albumin:Creatinine Ratio	BS-CAUH-SOP-30
Serum	Non-HDL Cholesterol	
Serum	Osmolar Gap	BS-CAUH-SOP-30
Serum	Serum Ascites Albumin Gradient	
Urine	Urine Protein Creatinine Ratio	BS-CAUH-SOP-30
Serum	Adjusted Calcium	
Serum	Free Testosterone	BS-CAUH-SOP-30
Plasma	Total Iron Binding Capacity	
Serum	Ethanol	BS-CAUH-SOP-30
Whole blood only	Standard bicarbonate	



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HUMAN BODY FLUIDS	<u>Blood Transfusion examinations to assist in clinical investigations</u>	Procedures documented in manufacturer's equipment manuals in conjunction with documented in-house procedures by the following methods:
EDTA whole blood	Blood group by detection and identification of antigens: A RhD Positive AB RhD Positive B RhD Positive O RhD Positive A RhD Negative AB RhD Negative B RhD Negative O RhD Negative C c E e K Jk ^a Fy ^a S	Automated using Ortho Vision (Column Agglutination Technology) BS-TAUH-SOP-1
EDTA plasma	Automated Antibody Screen: Rhesus: anti-C ^w , anti-C, anti-c, anti-D, anti-E, anti-e Kell: anti-K, anti-k, anti-Kp ^a Kidd: anti-Jk ^a , anti-Jk ^b Duffy: anti-Fy ^a , anti-Fy ^b Lutheran: anti-Lu ^a , anti-Lu ^b MNS: anti-M, anti-N, anti-S, anti-s Lewis: anti-Le ^a , anti-Le ^b P: anti-P ₁	BS-TAUH-SOP-1
EDTA whole blood	Direct antiglobulin test	BS-TAUH-SOP-1
	Electronic cross match	BS-TAUH-SOP-30
EDTA plasma	Serological Cross match	BS-TAUH-SOP-14



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EDTA plasma	Antibody panels – Antigens of the following systems: Rh – C,D,E,c,e,C ^w Kell – K,k,Kp ^a Duffy – Fy ^a , Fy ^b MNSs – M,N,S,s Kidd – Jk ^a , Jk ^b Lutheran – Lu ^a , Lu ^b Lewis – Le ^a , Le ^b P –P ₁	BIOVUE IAT and enzyme (Column Agglutination Technology) BS-TAUH-SOP-12
EDTA whole blood	Blood grouping A B O Rhesus D status	Manual methods using BIOVUE cassette (column agglutination technology) BS-TAUH-SOP-33
EDTA plasma	Antibody screen manual Rhesus: anti-C ^w , anti-C, anti-c, anti-D, anti-E, anti-e Kell: anti-K, anti-k, anti-Kp ^a Kidd: anti-Jk ^a , anti-Jk ^b Duffy: anti-Fy ^a , anti-Fy ^b Lutheran: anti-Lu ^a , anti-Lu ^b MNS: anti-M, anti-N, anti-S, anti-s Lewis: anti-Le ^a , anti-Le ^b P: anti-P ₁	BIOVUE IgG/Poly cards (column agglutination technology) BS-TAUH-SOP-32



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HUMAN BODY FLUIDS	<u>Haematological examinations for the purpose of clinical diagnosis</u>	Procedures documented in manufacturer's equipment manuals in conjunction with documented in-house procedures by the following methods:
Whole blood EDTA	Full blood count (FBC) analysis of the following parameters: Haemoglobin Red blood cells Haematocrit MCV MCH MCHC RDW Platelets White cell count Neutrophils Lymphocytes Monocytes Eosinophils Basophils Nucleated Red Blood Cell (NRBC) count Reticulocyte count	Sysmex XN automated analysers; hydrodynamic focusing, fluorescent staining, differential laser light scatter SOP: 'Use of the XN9000 XN Analysers for Full Blood Count Testing': AH-GHAE-SOP-8
Whole blood EDTA	Erythrocyte Sedimentation Rate	Automated Starrsed analyser, modified Westergren method SOP: 'Erythrocyte Sedimentation Rate (ESR) using the Starrsed Interrliner Analyser': BS-HAUH-SOP-2
Whole blood EDTA Serum or EDTA plasma	Detection of infectious mononucleosis heterophile antibodies	Clearview® IM II test. Rapid chromatographic immunoassay kit SOP: 'Guidelines for the rapid testing for Infectious Mononucleosis (IM) using the Clearview IM II Kit'; AH-GHAE-SOP-1



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HUMAN BODY FLUIDS	<u>Haematological examinations for the purpose of clinical diagnosis</u>	Procedures documented in manufacturer's equipment manuals in conjunction with documented in-house procedures by the following methods:
Whole blood EDTA	Sickle solubility test for presence of sickle haemoglobin (HbS)	Sickledex solubility test kit: Relative insolubility of HbS when combined with a reducing agent Sodium dithionite. SOP: 'Sickle Cell Solubility Test': AH-GHAE-SOP-19
Whole blood EDTA	Blood film analysis	May-Grunwald and Giemsa stains and manual microscopy. Automated smear and staining using Sysmex SP-10 SOP: 'Use of Sysmex SP-10 analyser for producing peripheral blood smears': AH-GHAE-SOP-18 Manual light microscopy (Nikon) SOP: 'Reporting Blood Films': AH-GHAE-SOP-16
Whole blood EDTA	Detection of Malarial antigens of: <i>P. falciparum</i> , <i>P. vivax</i> , <i>P. ovale</i> <i>P. knowlesi</i> <i>P. malariae</i> .	Humasis Pf/Pan antigen test, chromatographic immunoassay SOP: 'Guidelines for the laboratory screening of malaria': AH-GHAE-SOP-13 May-Grunwald and Giemsa stains and manual microscopy. Thin film examination Microscopy Nixon D/H Staining SP10 Sysmex XN9000 SOP: 'Reporting Blood Films': AH-GHAE-SOP-16



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<p>HUMAN BODY FLUIDS</p> <p>CSF</p> <p>Plasma citrate</p> <p>Plasma citrate</p>	<p><u>Haematological examinations for the purpose of clinical diagnosis</u></p> <p>Preparations for microscopic examination for evidence of haematological disease</p> <p><u>Haemostasis and thrombosis examinations for the purpose of clinical diagnosis</u></p> <p>Activated partial thromboplastin time (APTT) and ratio</p> <p>Prothrombin time (PT) and International normalised ratio (INR)</p>	<p>Procedures documented in manufacturer's equipment manuals in conjunction with documented in-house procedures by the following methods:</p> <p>Production of Cytospin and Staining Cytocentrifugation and morphology review May-Grunwald and Giemsa stains and manual microscopy. SOP: 'Use of Wescor Cytocentrifuge to produce a cytospin'; AH-GHAE-SOP-6</p> <p>Procedures documented in manufacturer's equipment manuals in conjunction with documented in-house procedures by the following methods:</p> <p>Sysmex CS2500 series automated analysers</p> <p>Clotting point detection method SOP: 'Activated Partial Thromboplastin Time Testing on the Sysmex CS2500 Automated Coagulation Analysers': AH-COAG-SOP-22</p> <p>Clotting point detection method SOP: 'Prothrombin Time and International Normalised Ratio (INR) Testing on the Sysmex CS2500 Automated Coagulation Analysers': AH-COAG-SOP-21</p>



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HUMAN BODY FLUIDS	<u>Haemostasis and thrombosis examinations for the purpose of clinical diagnosis</u>	Procedures documented in manufacturer's equipment manuals in conjunction with documented in-house procedures by the following methods:
Plasma citrate	Clauss Fibrinogen	<p>Sysmex CS2500 series automated analysers</p> <p>Clotting point detection method</p> <p>SOP: 'Clauss Fibrinogen Testing on the Sysmex CS2500 Automated Coagulation Analysers': AH-COAG-SOP-5</p>
Plasma citrate	D-Dimer	<p>Immunoassay method</p> <p>SOP: 'D-Dimer Testing on the Sysmex CS2500 Automated Coagulation Analysers': AH-COAG-SOP-7</p>
Plasma citrate	Mixing Studies for investigation of prolonged PT and APTT	<p>Clotting point detection method</p> <p>SOP: 'Performing Mixing Studies on the Sysmex CS2500 Automated Coagulation Analysers': AH-COAG-SOP-12</p>
Plasma citrate	<p>Inherited thrombophilia screen:</p> <p>Antithrombin Activity Protein C Activity Free Protein S</p>	<p>Protein C/Antithrombin: Chromogenic method</p> <p>SOP: 'Protein C and antithrombin on the CS-2100i': LP-HAE-CCSPCAT</p> <p>Free Protein S: Immunoassay method</p> <p>SOP: 'Free Protein S Testing on the Sysmex CS2500 Automated Coagulation Analysers': AH-COAG-SOP-11</p>



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HUMAN BODY FLUIDS Plasma citrate	<u>Haemostasis and thrombosis examinations for the purpose of clinical diagnosis</u> Acquired thrombophilia: Lupus screen (DRVVT screen / confirm, Actin FSL)	Procedures documented in manufacturer's equipment manuals in conjunction with documented in-house procedures by the following methods: Sysmex CS2500 series automated analysers Clotting point detection method SOP: 'Lupus anticoagulant on the CS Coagulation Analysers': LP-HAE-CSLUPUS
END		