


Schedule of Accreditation

issued by

United Kingdom Accreditation Service

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

 <p>9239 Accredited to ISO 15189:2012</p>	<h3>NHS Blood and Transplant</h3> <p>Issue No: 008 Issue date: 24 April 2024</p>	
	<p>Histocompatibility and Immunogenetics Laboratories NHSBT Charcot Road Colindale London NW9 5BG</p>	<p>Contact: Diane Irving Tel: +44 (0)7729275353 E-Mail: diane.irving@nhsbt.nhs.uk Website: www.nhsbt.nhs.uk</p>
<p>Testing performed by the Organisation at the locations specified below</p>		

Locations covered by the organisation and their relevant activities

Laboratory locations:

Location details	Activity	Location code
H and I Laboratory NHS Blood and Transplant Charcot Road Colindale London NW9 5BG Local Contact: Dr. Colin Brown	Histocompatibility and Immunogenetics investigations for the purpose of clinical diagnosis	C
H and I Laboratory NHS Blood and Transplant 75 Cranmer Terrace Tooting London SW17 0RB Local Contact: Dr. Deborah Sage	Histocompatibility and Immunogenetics investigations for the purpose of clinical diagnosis	T
H and I Laboratory NHS Blood and Transplant Vincent Drive Edgbaston Birmingham B15 2SG Local Contact: Mr Luke Foster	Histocompatibility and Immunogenetics investigations for the purpose of clinical diagnosis	B
H and I and Molecular Diagnostics Laboratory NHS Blood and Transplant 500, North Bristol Park Bristol BS34 7QH Local Contact: Dr. Anthony Poles	Histocompatibility and Immunogenetics and Immuno-haematology molecular diagnostic investigations for the purpose of clinical diagnosis	BR
H and I Laboratory NHS Blood and Transplant Barnsley Blood Centre unit D, Capital way Dodworth Barnsley S75 3HG Local Contact: Mr Tim Key	Histocompatibility and Immunogenetics investigations for the purpose of clinical diagnosis	BA
H and I Laboratory NHS Blood and Transplant Holland Drive Barrack Road Newcastle-upon-Tyne NE2 4NQ Local Contact: Dr. Arash Akbarzad-Yousefi	Histocompatibility and Immunogenetics investigations for the purpose of clinical diagnosis	N



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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)	<u>Histocompatibility and Immunogenetics investigations for the purpose of clinical diagnosis (cont'd)</u>	Manufacturer's instructions for key equipment as specified (where relevant) in conjunction with in-house documented methods:	
Whole blood, Spleen & Lymph nodes	Detection of IgG HLA specific antibodies to donor T and B lymphocytes	Flow cytometry using Beckman Coulter Navios Flow Cytometer and in-house procedures: SOP 6163	T
Serum & Plasma	Detection and identification of HLA specific antibodies HLA -A, -B, -C, -DR, -DQ, -DP	SOP1640 - Tooting 3 colour Renal Transplant T&B cell flow cytometry crossmatch Luminex™ fluorometric microbead array using: One Lambda Labscreen™ and analysis using Fusion. Immucor Lifecodes™ and analysis using Match It and in-house procedures: SOP3453 & SOP711- Sample separation SOP4420 – Start up, Calibration and Shutdown of the Luminex™ Analyser SOP1416, SOP5064 - Labscreen™ SOP1414, SOP5036 - Lifecodes™	T C TB BR BA N T B BR BA N



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HUMAN TISSUES AND FLUIDS (cont'd)	<u>Histocompatibility and Immunogenetics investigations for the purpose of clinical diagnosis (cont'd)</u>	Manufacturer's instructions for key equipment as specified (where relevant) in conjunction with in-house documented methods:	
Serum & Plasma	Detection and identification of HPA specific antibodies: GPIV, HLA - A, - B, - C, GPIIb/IIIa, GPIb/IX, GPIa/IIa, (which can define HPA -1, -2, -3, -4, -5)	Luminex™ fluorometric microbead array using Lifematch™ assays and in-house procedures: SOP3453 - Sample separation SOP4420 – Start up, Calibration and Shutdown of the Luminex™ Analyser SOP4576 - HPA antibody detection using Pak Lx™	BR
Whole blood, spleen, lymph nodes, saliva, buccal cells, Serum/plasma, cord blood, bone marrow, cells	Genotyping	Automated and manual DNA extraction and quantitation using MagNApure and Nanodrop ND1000/2000 SOP583 - DNA extraction MagNA pure SOP666 - Spin columns (ENZA) SOP572 - Nanodrop	C T B BR BA N
Whole blood, saliva, buccal cells, Serum/plasma, cord blood, bone marrow, cells	Genotyping	High throughput automated DNA extraction using Qiagen Symphony and in-house procedures: SOP3668 - DNA extraction using the QIASymphony SOP3421 - Oragene saliva kit	C



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<p>HUMAN TISSUES AND FLUIDS (cont'd)</p> <p>DNA extracted from sample types above</p>	<p><u>Histocompatibility and Immunogenetics investigations for the purpose of clinical diagnosis (cont'd)</u></p> <p>Genotyping</p>	<p>Manufacturer's instructions for key equipment as specified (where relevant) in conjunction with in-house documented methods:</p> <p>Automated product amplification using thermocyclers and in-house procedures: SOP589 - Use of Thermal Cyclers and: MJ Research PTC-200 MJ Research DNA Engine Tetrad 2 MJ Research PTC-225 Tetrad Fisher Scientific: Veriti Applied Biosystems: GeneAmp 9700. Perkin Elmer: 9700 Bio-Rad: C1000</p>	<p>C T B BR BA N</p>



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HUMAN TISSUES AND FLUIDS (cont'd)	<u>Histocompatibility and Immunogenetics investigations for the purpose of clinical diagnosis (cont'd)</u>	Manufacturer's instructions for key equipment as specified (where relevant) in conjunction with in-house documented methods:	
DNA extracted from sample types above	HFE typing: Gene positions - 63/282	PCR with Sequence Specific Primers (SSP) using in house developed primer sets. Visualisation using Agarose Gel Electrophoresis and in-house procedures: SOP581 – Operation of Gel Documentation systems in H&I SOP2279 - HFE by SSP	C T
DNA extracted from sample types above	HPA typing: HPA -1, -2, -3, -4, -5, -6, -9, -15	PCR with Sequence Specific Primers (SSP) using a commercial kit. Visualisation using Agarose Gel Electrophoresis and in-house procedures: SOP589 Thermocyclers SOP581 – Operation of Gel Documentation systems in H&I SOP2074 - Determining HPA Types by PCR-SSP using the Inno-Train™ Kit SOP2894 – Analysis of PCR products	C



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<p>HUMAN TISSUES AND FLUIDS (cont'd)</p> <p>DNA extracted from sample types above</p>	<p><u>Histocompatibility and Immunogenetics investigations for the purpose of clinical diagnosis (cont'd)</u></p> <p>HLA typing: HLA -A, -B, -C, -DRB1, 3, 4, 5, -DQA1, -DQB1, -DPA1, -DPB1</p>	<p>Manufacturer's instructions for key equipment as specified (where relevant) in conjunction with in-house documented methods:</p> <p>PCR with Sequence Specific Primers (SSP) with melt curve analysis using QuantStudio™ Dx Real-Time PCR System using LinkSeq assay. and in-house procedures:</p> <p>SOP589 - Use of thermal cyclers SOP5056 & SOP5057 - Set up & analysis of LinkSeq™ kits</p> <p>PCR with Sequence Specific Primers (SSP) with hydrolysis probes for the amplification and real time detection of HLA alleles using QuantStudio Real-Time PCR System using Q type assay and in-house procedures:</p> <p>SOP5928 & SOP5929 - Set up & analysis of Q Type™ kits</p>	<p align="center">B B A T N</p>



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HUMAN TISSUES AND FLUIDS (cont'd)	<u>Histocompatibility and Immunogenetics investigations for the purpose of clinical diagnosis (cont'd)</u>	Manufacturer's instructions for key equipment as specified (where relevant) in conjunction with in-house documented methods:	C T B BR BA N
Human DNA extracted from sample types above	HLA typing HLA-A, -B, -C, -DRB1, -3 -4, -5, -DQA1, -DQB1, -DPA1, -DPB1	Next generation sequencing using commercial method. One Lambda AllType kit, Qubit Fluorometer, Thermocyclers and Illumina MiSeq SOP589 - Use of Thermal Cyclers in DTS Laboratories SOP5510 - Quantitation of DNA using a QuBit Fluorometer SOP5506 - Clinical HLA Typing by OneLambda AllType™ Fastplex NGS Assay SOP4609 - Use of the MiSeq	
DNA sequence data	Determination of HLA type HLA-A, -B, -C, -DRB1, -3 -4, -5, -DQA1, -DQB1, -DPA1, -DPB1	Data analysis using commercial software from the kit: Primary Analysis SOP5507 - Analysis of Clinical HLA typing by Next Generation Sequencing using TypeStream Visual Software	C T B BR BA N



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<p>HUMAN TISSUES AND FLUIDS (cont'd)</p> <p>Amniotic fluid and Human DNA extracted from sample types above</p> <p>DNA sequence data</p>	<p><u>Histocompatibility and Immunogenetics investigations for the purpose of clinical diagnosis (cont'd)</u></p> <p>HPA Typing: HPA -1, - 2, - 3, -4, -5, -6, -9, - 15</p> <p>Determination of HPA type HPA -1, - 2, - 3, -4, -5, -6, -9, - 15</p>	<p>Manufacturer's instructions for key equipment as specified (where relevant) in conjunction with in-house documented methods:</p> <p>Sanger PCR-Sequence based Typing (SBT) using in house developed primer sets. Analysis using ABI3500xl and in-house procedures:</p> <p>SOP589 Thermocyclers SOP4858 - ABI3500xl SOP1069 - Primer preparation SOP1059 - SBT Clean up protocols SOP3400 - Use of PCR-SBT for HNA and HPA Genotyping</p> <p>Data analysis using commercial software and in-house procedure: SOP3971 - Use of Mutation Surveyor</p>	BR



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<p>HUMAN TISSUES AND FLUIDS (cont'd)</p> <p>Human DNA extracted from sample types above</p> <p>DNA sequence data</p>	<p><u>Histocompatibility and Immunogenetics investigations for the purpose of clinical diagnosis (cont'd)</u></p> <p>HNA Typing: HNA -1, - 3, -4, -5</p> <p>Determination of HNA type HNA -1, - 3, -4, -5</p>	<p>Manufacturer's instructions for key equipment as specified (where relevant) in conjunction with in-house documented methods:</p> <p>Sanger PCR-Sequence based Typing (SBT) using in house developed primer sets. Analysis using ABI3500xl and in-house procedures:</p> <p>SOP4858 - ABI3500xl SOP1069 - Primer preparation SOP1059 - SBT Clean up protocols SOP3400 - Use of PCR-SBT for HNA and HPA Genotyping</p> <p>Data analysis using commercial software and in-house procedure: SOP3971 - Use of Mutation Surveyor</p>	<p>BR</p>



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HUMAN TISSUES AND FLUIDS (cont'd)	<u>Histocompatibility and Immunogenetics investigations for the purpose of clinical diagnosis (cont'd)</u>	Manufacturer's instructions for key equipment as specified (where relevant) in conjunction with in-house documented methods:	
Whole Blood, Bone marrow and DNA extracted from sample types above	Detection of chimerisms Engraftment monitoring post stem cell transplant.	Chimerism detection Amplification using thermocyclers (SOP589) ABI3500xl genetic analyser using Promega assay and in-house procedures: SOP4858 – Use of ABI3500xl SOP1288 - Use of Promega kits SOP4123 - Measurement of cell purity SOP4772 - Cell separation using Milentyi™ kits	BR T BA
DNA sequence data	Detection of chimerisms	Data analysis using commercial software and in-house procedure: SOP4568 - Use of Chimermarker™ SOP1222 - Use of genemapper™	BR BA, T T
Cord Blood and DNA extracted from sample types above (cont'd)	Confirmation of identification of cord blood units during issue	Short Tandem repeat analysis: Amplification using thermocyclers listed above and ABI3500xl genetic analyser using Promega assay and in-house procedures: SOP589 Thermocyclers SOP4858 – Use of ABI3500xl SOP1288 - Use of Promega kits	BR
DNA sequence data	Detection of chimerisms	Data analysis using commercial software and in-house procedure SOP4568 - Use of Chimermarker™	BR



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HUMAN TISSUES AND FLUIDS (cont'd)	<u>Histocompatibility and Immunogenetics investigations for the purpose of clinical diagnosis (cont'd)</u>	Manufacturer's instructions for key equipment as specified (where relevant) in conjunction with in-house documented methods:	
Human DNA extracted from sample types above	HPA typing (high throughput) HPA-1, -2, -3, -4, -5 -15	Real Time PCR using in house developed primer sets. Analysis by using QuantStudio™ 7 Flex Real-Time PCR System and in-house procedures: SOP1051 - HPA typing by Taqman assay: making-up primers and probes. SOP593 - HPA Genotyping using Taqman Assay: Set Up SOP5094 - Set Up of HPA Mass Genotyping Plates Using Beckman NX Liquid Handling Robot SOP5005 - HPA Genotyping using TaqMan assay: Result acquisition and analysis	C
Human DNA extracted from sample types above	Detection of CCR5 delta32 mutation	Real Time PCR using in house developed primer sets. Analysis by using QuantStudio™ 7 Flex Real-Time PCR System and in-house procedures: SOP589 Thermocyclers SOP4277 - CCR5 delta32 mutation detection	C



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HUMAN TISSUES AND FLUIDS (cont'd)	<u>Histocompatibility and Immunogenetics investigations for the purpose of clinical diagnosis (cont'd)</u>	Manufacturer's instructions for key equipment as specified (where relevant) in conjunction with in-house documented methods:	
Serum/plasma/whole blood	Detection of HPA specific antibodies: HPA -1, -2, -3, -5, -6 -9 -15 GPIIb/IIIa, GPIb/IX, GPIa/IIa, GPIV, GPV	Sample and reagent preparation SOP760 - Thawing Frozen Platelets for use in PIFT and MAIPA Assay SOP1451- Platelet Panel Preparation, Freezing and Stock Management SOP903 - Platelet Isolation from Platelet Rich Plasma SOP904 - Platelet Isolation by Density Gradient SOP3276 - Sample Processing SOP3172 - Production of Laboratory Reagents	BR
Serum/plasma	Detection of HPA specific antibodies including: HPA -1, -2, -3, -5, -6, -9 15 GPIIb/IIIa, GPIb/IX, GPIa/IIa, GPIV, GPV	Indirect Platelet Immunofluorescence test (PIFT) using flow cytometry and differential counts using CytoFLEX Flow Cytometer and AcT 5 diff Haematology analyser and in-house procedures: SOP5046 – Running CytoFLEX flow cytometer SOP3043 AcT 5diff Haematology analyser SOP615 - The Indirect Platelet Immunofluorescence Test (PIFT)	BR



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Serum/plasma	Detection and identification of: HPA specific antibodies: HPA -1, -2, -3, -5, -6 -9 -15 GPIIb/IIIa, GPIb/IX, GPIa/IIa, GPIV, GPV	Monoclonal Antibody Immobilisation of Platelet Antigens (MAIPA) using differential counts on AcT 5 diff Haematology analyser, Biotek plate washers, FLUOstar Omega Microplate reader and in-house procedures: SOP3043 –AcT5 diff haematology analyser SOP3420 - Use of Ascent software SOP3914 – Use and Maintenance of Biotek ELx50 Well Washer SOP584 Maintenance and Performance Checks for Plate Washers in H&I SOP3950 – Operation of the FLUOstar Omega SOP1449 & SOP608 - Monoclonal Antibody Immobilisation of Platelet Antigen (MAIPA) SOP4970 - Detecting drug dependent specific antibodies using the MAIPA assay	BR
Whole blood	Determination of the expression of glycoproteins: GPIIb/IIIa GPIb/IX GPIa/IIa GPIV	Platelet Glycoprotein Expression using CytoFLEX Flow Cytometer and AcT 5 diff Haematology analyser and in-house procedures: SOP5046 – Running CytoFLEX flow cytometer SOP3043 - AcT 5diff Haematology analyser SOP758 - Determination of the level of Platelet Glycoprotein Expression using a direct PIFT	BR



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Serum/ plasma	Detection of HPA incompatibility	Platelet crossmatching using CytoFLEX Flow Cytometer and AcT 5 diff Haematology analyser and in-house procedures: SOP5046 – Running CytoFLEX flow cytometer SOP3043 - AcT 5diff Haematology analyser SOP1074 - Platelet crossmatching by indirect PIFT	BR
Serum/plasma	Detection of HPA incompatibility	Monoclonal Antibody Indirect Platelet Assay (MAIPA) using differential counts on AcT 5 diff Haematology analyser, Biotek plate washers, FLUOstar Omega Microplate reader and in-house procedures: SOP3043 –AcT5 diff haematology analyser SOP3420 - Use of Ascent software SOP3914 – Use and Maintenance of Biotek ELx50 Well Washer SOP584 Maintenance and Performance Checks for Plate Washers in H&I SOP3950 – Operation of the FLUOstar Omega SOP608 - Monoclonal Antibody Immobilisation of Platelet Antigen (MAIPA) SOP902 - Platelet crossmatch by indirect Monoclonal Antibody Indirect Platelet Assay (MAIPA)	BR



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Whole blood / isolated platelets	Detection of auto platelet antibodies	<p>Platelet Immunofluorescence testing (PIFT) (direct or indirect auto) using CytoFLEX Flow Cytometer and AcT 5 diff Haematology analyser and in-house procedures:</p> <p>SOP5046 – Running CytoFLEX flow cytometer SOP1294 – Direct and indirect auto platelet immunofluorescence SOP3043 –AcT5 diff haematology analyser SOP608 - Monoclonal Antibody Immobilisation of Platelet Antigen (MAIPA) SOP3420 - Use of Ascent software SOP3914 – Use and Maintenance of Biotek ELx50 Well Washer SOP584 Maintenance and Performance Checks for Plate Washers in H&I</p>	BR
Whole blood / isolated platelets	Determination of HPA-1a phenotype	<p>Flow cytometry using CytoFLEX flow cytometer and in-house procedures:</p> <p>SOP770 - Determination of HPA-1a Phenotype using FITC Labelled IgG Monoclonal Human HPA-1a Antibody SOP5046 – Running CytoFLEX flow cytometer</p>	BR



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Serum or Plasma	Detection of Heparin associated platelet antibodies: PF4 (IgG/IgM)	Manual ELISA assay using Biotek washer and FLUOstar Omega microplate reader and in-house procedures: SOP2722 - Zymutest HIA IGG/IgM ELISA SOP3420 - Use of Ascent software. SOP3950 - Operation of the FLUostar Omega SOP3914 – Use and Maintenance of Biotek ELx50 Well Washer SOP584 Maintenance and Performance Checks for Plate Washers in H&I	BR
Serum or Plasma	Detection of Heparin associated platelet antibodies: PF4 (HAT13G, HAT45G, X-HAT13 or X-HAT45)	Manual ELISA assay using Biotek washer and FLUOstar Omega microplate reader and in-house procedures: SOP612 - GTI PF4 ELISA SOP3420 - Use of Ascent software. SOP3950 - Operation of the FLUostar Omega SOP3914 – Use and Maintenance of Biotek ELx50 Well Washer SOP584 Maintenance and Performance Checks for Plate Washers in H&I	BR



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Whole Blood	Detection of Granulocyte specific antibodies	Isolation of granulocytes and monocytes Manual density gradient centrifugation followed by CytoFLEX flow cytometry and in-house procedures: SOP767 - White cell isolation by GLAM SOP776 - Granulocyte and Lymphocyte isolation SOP773 - Counting granulocytes and lymphocytes by flow cytometry SOP768 Monocyte Isolation and the Granulocyte chemiluminescence Test (GCLT) - Microplate Method	BR
Whole blood/ isolated granulocytes	Detection of Granulocyte specific antibodies including anti-HNA -1, CD16, -2, -3, -4 - 5	Granulocyte Immunofluorescence test (GIFT) flow cytometry using CytoFLEX flow cytometer and in-house procedures: SOP5046 - Running CytoFLEX flow cytometer SOP775 - Direct and "indirect auto" Granulocyte Immunofluorescence test and Granulocyte phenotyping SOP875 - The granulocyte and Lymphocyte immunofluorescence test SOP3262 - HNA phenotyping using monoclonal antibodies and indirect labelling	BR



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Serum / plasma	Detection and identification of HNA-3a/b specific antibody	Granulocyte Immunofluorescence test (GIFT) Flow cytometry using CytoFLEX flow cytometer and in-house procedures: SOP5046 - Running CytoFLEX flow cytometer SOP3936 - Recovery of recombinant HNA-3a and HNA-3b cell lines and their use in Antibody Detection using the GIFT	BR
Serum	Detection and identification of HNA specific antibodies: HLA-1a, 1b, 1c, 1d, CD16, HNA-2, CD177, HNA-3, -4, -5 or CD11/18	Monoclonal Antibody Immobilisation of Granulocyte antigens (MAIGA) Manual ELISA using Biotek cell washers and FLUOstar microplate readers and in-house procedures: SOP3420 - Use of Ascent software SOP3914 – Use and Maintenance of Biotek ELx50 Well Washer SOP584 Maintenance and Performance Checks for Plate Washers in H&I SOP3950 – Operation of the FLUOstar Omega SOP1447 - Monoclonal Antibody Immobilisation of Granulocyte antigens (MAIGA)	BR



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<p>HUMAN TISSUES AND FLUIDS (cont'd)</p> <p>Serum</p>	<p><u>Histocompatibility and Immunogenetics investigations for the purpose of clinical diagnosis (cont'd)</u></p> <p>Determination of the biological activity of granulocyte antibodies by determining their ability to promote phagocytosis of sensitised granulocytes by human FCGR bearing mononuclear cells</p>	<p>Manufacturer's instructions for key equipment as specified (where relevant) in conjunction with in-house documented methods:</p> <p>Granulocyte chemiluminescence test (GCLT) Manual ELISA using Biotek plate washers and FLUOstar Omega microplate reader and in-house procedures:</p> <p>SOP3914 – Use and Maintenance of Biotek ELx50 Well Washer SOP3950 – Operation of the FLUOstar Omega SOP768 - Granulocyte chemiluminescence test (GCLT)</p>	<p>BR</p>



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HUMAN TISSUES AND FLUIDS (cont'd)	<u>Histocompatibility and Immunogenetics investigations for the purpose of clinical diagnosis (cont'd)</u>	Manufacturer's instructions for key equipment as specified (where relevant) in conjunction with in-house documented methods:	
Whole blood	Detection of HNA phenotypes: HNA -1, -2	Granulocyte Immunofluorescence test (GIFT) (direct and indirect auto) Flow cytometry using CytoFLEX flow cytometer and in-house procedures: SOP5046 – Running CytoFLEX flow cytometer SOP775 - Direct and 'indirect auto' granulocyte immunofluorescence test and granulocyte phenotyping SOP3262 - HNA phenotyping using monoclonal antibodies and indirect labelling	BR
Whole blood	Detection of HNA incompatibilities	Flow Cytometry using CytoFLEX flow cytometer and in-house procedures: SOP5046 – Running CytoFLEX flow cytometer SOP769 - Cross Match and Phenotyping of Patients involved in cases of Transfusion Related Acute Lung Injury SOP774 - Cross Match and Typing of Patients involved in Suspected Cases of Neonatal Alloimmune Neutropenia SOP775 - Direct and 'indirect auto' granulocyte immunofluorescence test and granulocyte phenotyping	BR



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Whole blood EDTA, maternal plasma, amniocytes, chorionic villus samples	<u>Red Cell Immunohaematology investigations for the purpose of clinical diagnosis</u>	Automated DNA extraction using QIASymphony and manual DNA extraction using manufacturer's instructions SOP4095 / SOP4092 /SOP5195 SOP5813	BR
DNA extracted from samples listed above:		DNA Quantification of DNA using Nanodrop 2000 SOP5276 (SOP572)	
HUMAN TISSUE AND FLUIDS (cont'd)	<u>Red Cell Immunohaematology investigations for the purpose of clinical diagnosis (cont'd)</u>	Manufacturer's instructions for BASIS BioArray Solutions imaging system BioArray AIS400 Beadchip technology (elongation mediated multiplexed analysis of polymorphisms) and C1000 Touch thermal cycler and in-house procedure:	
DNA	Determination of red cell antigen type: D, C, c, E, e, V, VS M, N, S, s, U, K, k, Kpa/Kpb, Jsa, Jsb Fya, Fyb, Fyx, Jka, Jkb, Doa, Dob, Hy+/-, Joa, Job Lua, Lub, Dia/b, Coa/b Lw1/Lw2	SOP4214	
DNA	Determination of red cell antigen type: C, c, E, e, M, N, S, s, U, K, k, Kpa/Kpb, Jsa, Jsb, Fya, Fyb, Jka, Jkb, Doa, Dob, Lua, Lub ABO	Real time PCR allelic discrimination Quantstudio 12K, and Dx system and in-house procedures. Biomek NXP automation workstation. SOP4098, SOP4984	
DNA	D,C, c	Allele-specific PCR / gel electrophoresis PCR using BioRad C1000 Touch Thermal Cycler SOP4097	



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DNA	Determination of fetal blood group genotype:	Semi quantitative real time PCR using manufacturer's instructions for Biomek NXP automation workstation, Quantstudio 12K, and Dx system and in-house procedures:	
DNA derived from maternal plasma	D, C, c, E, K1	SOP4093 / SOP4102/ SOP4103 SOP4104/ SOP4105 / SOP4107	
DNA provided by customers	DNA sequence	DNA sequencing using: manufacturer's instructions for Sanger sequencing (dideoxynucleotide chain termination) with Bio-Rad C1000 Thermal cycler and 3500 XL genetic analyser SOP5233	
END			