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Contact Details

Histocompatibility and Immunogenetics Laboratory,
Scottish National Blood Transfusion Service,
Royal Infirmary of Edinburgh,
51 Little France Crescent,
Edinburgh,
EH16 4SA
Tel: 0131 - 242 – 7528, Fax: 0131 - 242 - 7530

Senior Clinical Scientists (Histocompatibility & Immunogenetics)
Dr David Turner (Consultant Clinical Scientist)
Tel: 0131-242-7521/7534 Mob: 07788-431401
Email: david.turner2@nhs.net

Dr Richard Battle (Clinical Scientist)
Tel: 0131-242-27526
Email: Richard.battle@nhs.net

Consultant Haematologists
Dr Lynn Manson
Tel: 0131-242-7522/7527
Email: lynn.manson@nhs.net

H&I Laboratory Technical Head
Symon Lockhart (BMS 3)
Tel: 0131-242-7528
Email: symon.lockhart@nhs.net

Out of Hours Requests

Platelets: (HIT tests only)
Please phone the Blood Transfusion Service on 0131-242-7501 and ask
for the BTS/Haematology Specialist Registrar

Solid Organ: There is an on-call healthcare scientist for solid organ
transplant related work. It is the transplant co-ordinator/ Clinical Scientist
responsibility to initiate call out.

A Clinical Scientist is also available 24/7 for clinical advice relating to
any results generated within the H&I laboratory.
Aims of the Laboratory

1. To provide a comprehensive histocompatibility service to support the East of Scotland Renal Transplant Unit, the Scottish Pancreas/Islet Transplant Unit and the Scottish Liver Transplant Unit.

2. To provide first field HLA typing and HLA antibody testing where appropriate for potential haematopoietic stem cell transplant recipients and donors.

3. To provide a comprehensive platelet immunohaematology service to support patients who are refractory to platelet transfusions, suspected cases of neonatal alloimmune thrombocytopenia and suspected cases of heparin-induced thrombocytopenia.

4. To provide a service for CD34+ stem cell enumeration to support stem cell collection and processing within SNBTS.

5. To maintain and improve the service in response to our users' needs and therefore enhance our position as a centre of excellence in the provision of histocompatibility and platelet immunohaematology services within Scotland.

Complaints/ Comments/ Suggestions

SNBTS as a Strategic business Unit (SBU) of NSS is committed to capturing and recording feedback from service users and reviewing this correspondence as part of its Continual Improvement Programme. In the event that a user is dissatisfied with any aspect of the service they have received, then they are encouraged to contact any of the addressees identified in the contacts section (page 3) to discuss their concerns.

Protection of Personal Information

In line with National Services Scotland (NSS) Information Security policies the laboratory has in place information technological and organisational safeguards to ensure that the confidentiality, integrity and availability of all forms of information held on patients, donors, NHSScotland staff and family health contractors, it is not lost or compromised.
Quality Assurance

A Quality Management System monitors and audits all aspects of the service. All laboratory investigations and clerical procedures are governed and maintained by compliance with the SEBTS Quality Manual, Management Procedures and relevant Standard Operating Procedures (SOPs).

Standards of testing are maintained by the rigorous use of internal quality assurance protocols and through participation in appropriate external quality assessment schemes (UK NEQAS, NIBSC).

Quality Assessment and External Audit

A copy of last year’s participation certificate and results summary is available, on request, for each of the following:

- **UK NEQAS for Histocompatibility and Immunogenetics**
- **UK NEQAS for Leucocyte Immunophenotyping (for CD34 enumeration testing)**
- **UK NEQAS for Blood Coagulation (for HIT screening)**
- **BBTS – Platelet Serology Working Group (Organised by NIBSC)**

Accreditation

All SNBTS H&I laboratories are accredited through Clinical Pathology Accreditation (UK) Ltd (CPA).

The Edinburgh H&I laboratories are also European Federation for Immunogenetics (EFI) accredited.

**Human Tissue Act (Scotland) 2006**

From April 2007 the laboratory has been in compliance with the Human Tissue Act (Scotland) 2006.
General Laboratory Information

Laboratory hours

Routine  Monday to Friday  08.30 to 17.00.

Last receipt for samples is 17.00 on Thursday as some tests require fresh samples and so cannot be left from Friday to Monday. Samples can be accepted on a Friday for some tests with the prior agreement of the laboratory.

Please note that each request accepted by the laboratory for examination(s) shall be considered an agreement.

Sample Labelling

Samples that are received for laboratory examinations must be labelled in accordance with the SNBTS Policy on The acceptance criteria for sample labelling within clinical laboratories (detailed on page 7).
All samples must be labelled with the patient’s CHI number – an alternative unique identifier (hospital number or emergency number) may only be used if the patient does not yet have a CHI number.
If addressograph labels are used for sample request forms and/or sample tubes the responsibility is with the clinician/ responsible person taking the sample.
Samples received that do not meet with the described sample acceptance criteria may not be tested.
Please note addressograph labels are NOT acceptable on SAMPLE TUBES for transfusion related work

Sample Tubes – ideally need to be hand written CLEARLY, although addressograph labels are acceptable for non-transfusion related work

<table>
<thead>
<tr>
<th>Details</th>
<th>Requirement</th>
<th>Consequence if missing from sample tube</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Patient details on sample &amp; request form must match exactly)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient surname and first name (correctly spelt)</td>
<td>Mandatory</td>
<td>Discard</td>
</tr>
<tr>
<td>Date of birth</td>
<td>Mandatory</td>
<td>Discard</td>
</tr>
<tr>
<td>CHI number*</td>
<td>Mandatory</td>
<td>Discard</td>
</tr>
<tr>
<td>Signature of person taking the sample</td>
<td>Mandatory</td>
<td>Discard</td>
</tr>
<tr>
<td>Date sample taken</td>
<td>Mandatory</td>
<td>Discard</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Details</th>
<th>Requirement</th>
<th>Consequence if missing from request form</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Patient details on sample &amp; request form must match exactly)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient surname and first name (correctly spelt)</td>
<td>Mandatory</td>
<td>Discard</td>
</tr>
<tr>
<td>Date of birth</td>
<td>Mandatory</td>
<td>Discard</td>
</tr>
<tr>
<td>CHI number*</td>
<td>Mandatory</td>
<td>Discard</td>
</tr>
<tr>
<td>Signature</td>
<td>Mandatory</td>
<td>Discard</td>
</tr>
<tr>
<td>Clinical details/reason for request and requesting clinician</td>
<td>Desirable</td>
<td>Requester to be contacted if possible**</td>
</tr>
<tr>
<td>Date and time of sampling</td>
<td>Desirable</td>
<td>Discard if date cannot be established from the sample</td>
</tr>
<tr>
<td>Clinical area</td>
<td>Desirable</td>
<td>Clinician to be contacted if possible</td>
</tr>
</tbody>
</table>

* All transfusion samples must be labelled with the patient’s CHI number – an alternative unique identifier (hospital number or emergency number) may only be used if the patient does not yet have a CHI number.

** Requester is responsible for ensuring the H&I Laboratory is made aware of any special requirements that may be necessary.
Sample Factors Influencing Test Performance and Results

Haemolysed samples may influence test results and receipt of a haemolysed sample may result in the request for a replacement. All serological tests require fresh samples that have been bled in the last 48 hours.
Certain immunosuppressive agents may influence the tests undertaken in H&I. These include, ATG, IvIg and monoclonal antibodies therapies including rituximab. If patients are known to be receiving these agents this should be highlighted to the laboratory on the request form.
DNA typing of haematology patients may prove difficult if the patient is pancytopenic and therefore efforts should be made to HLA type patients early in their treatment.

Transfer of samples via SNBTS/ LUHT Transport

Samples that originate from the Aberdeen and Tayside areas are transported by SNBTS scheduled runs to the Edinburgh H&I laboratory. It is the responsibility of the clinical team to ensure that any samples for transfer to Edinburgh reach the required dispatch area of local blood banks. Samples are placed in red clinical transportation boxes by SNBTS staff for delivery.
Samples from Lothian hospitals and Lothian GP practices are uplifted by the LUHT van service.

Sample Referrals

Samples for MAIPA testing are referred to the:
Molecular Immunohaematology Laboratory,
North East Scotland Blood Donor Centre,
Aberdeen, AB25 2ZW.

Exact sample requirements should be discussed with the Aberdeen laboratory. Contact Ms Fiona Sellers: 01224-812-472.
Requirements for sending samples by Royal Mail

Samples must be packaged in accordance with Packaging Instruction P650 (UN3373, Diagnostic Specimens). Briefly this state:

The packaging shall consist of three components:

a) A primary receptacle
b) A secondary packaging
c) An outer packing

Primary receptacles shall be packed in secondary packaging in such a way that, under normal conditions of carriage, they cannot break, be punctured or leak their contents into the secondary packaging. Secondary packaging shall be secured in outer packaging with suitable cushioning material. Any leakage of the contents shall not compromise the integrity of the cushioning material or of the outer packaging.

For carriage, the mark illustrated below shall be displayed on the external surface of the outer packaging on a background of a contrasting colour and shall be clearly visible and legible. The width of the line shall be at least 2mm; the letters and numbers shall be at least 6mm high.

UN 3373
# Reporting Times

The laboratory aims to meet the following targets in reporting results.

Any urgent requests should be discussed with the laboratory, particularly post transplant antibody monitoring samples.

<table>
<thead>
<tr>
<th>Test</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>HLA Type</td>
<td>1 week</td>
</tr>
<tr>
<td>HLA Antibody Screening</td>
<td>2 weeks</td>
</tr>
<tr>
<td>Post transplant antibody monitoring</td>
<td>2 days</td>
</tr>
<tr>
<td>HLA Type of local donor</td>
<td>5 hours</td>
</tr>
<tr>
<td>Crossmatch result (Renal cadaver donor, from receipt of tissue samples)</td>
<td>5 hours</td>
</tr>
<tr>
<td>Crossmatch result (Living Renal Donor)</td>
<td>1 week</td>
</tr>
<tr>
<td>Platelet testing (initial screen and HPA type)</td>
<td>2 days</td>
</tr>
<tr>
<td>CD34 enumeration</td>
<td>&lt; 2hrs</td>
</tr>
<tr>
<td>MAIPA (tested in Aberdeen)</td>
<td>2 weeks</td>
</tr>
<tr>
<td>Indirect PIFT (tested in Aberdeen)</td>
<td>1 week</td>
</tr>
<tr>
<td>Direct PIFT (tested in Aberdeen)</td>
<td>1 week</td>
</tr>
</tbody>
</table>
Section I

Histocompatibility Testing for Solid Organ Transplantation

H&I services are provided for the renal and liver transplant units.

Potential kidney, pancreas and islet transplant recipients, local multi-organ deceased donors, deceased donors referred from NHSBT Organ Donation and Transplant (ODT) and potential living donors are HLA typed. HLA typing is performed by PCR based assays.

Crossmatching for living or deceased donor transplants is performed by complement dependent cytotoxicity (CDC) and flow cytometry, depending on the situation.

HLA antibody screening is performed by Luminex technology, which is a bead based immunoassay used to semi quantitatively detect HLA IgG antibodies.

Kidney, Kidney/Pancreas and Islet Transplant Patients

New patients have a full HLA type and antibody screen. Samples required are:

5ml EDTA for HLA class I & II typing
10ml Clotted Sample for HLA antibody screening

Prior to listing on the transplant waiting list a confirmatory HLA type needs to be performed as well as an up to date antibody screen. Samples required are:

5ml EDTA for HLA class I & II typing
10ml Clotted Sample for HLA antibody screening

When the confirmatory type and antibody screen have been completed and the transplant co-ordinators request that the patient is listed, the laboratory will enter information into the ODT NTN website. Once on the Waiting List, a 10ml clotted sample should be sent to the laboratory every 3 months. The serum is screened for HLA antibodies and also stored for use in future crossmatches.
Liver Patients

Patients are not HLA typed prior to transplant. At the time of transplant the following sample should be provided to the H&I Lab:

**10ml Clotted Sample** for HLA antibody screening

If patients have high levels of donor directed HLA antibodies at the time of transplant a second sample for antibody testing will be requested at 1 month post transplant:

**10ml Clotted Sample** for HLA antibody screening

Potential Deceased donor

The Specialist Nurse for Organ Donation will liaise with the laboratory, or if out of hours, the on-call healthcare scientist when a deceased donor is identified.

Results of the HLA typing are faxed to NHSBT ODT for organ allocation.

An HLA antibody investigation or initial CDC and flow crossmatch may be performed using current serum samples and donor lymphocytes, to aid in the interpretation of the risks involved.

**Donor Tissue Samples**
**Recipient 10 ml clotted and 10ml EDTA pre-transplant sample**

Imported Deceased Donor

The renal transplant coordinator will liaise with the laboratory, or if out of hours, the on-call healthcare scientist, when NHSBT ODT allocates a kidney, pancreas, or islets to a patient on the local waiting list.

Samples required are:

**Donor Tissue Samples**
**Recipient 10 ml clotted and 10ml EDTA pre-transplant sample**
Virtual Crossmatching

A virtual crossmatch eliminates the need for a prospective crossmatch and benefits the patient by reducing the cold ischaemic time of the graft. For kidney, kidney/pancreas and islet cases, patients may be eligible for a virtual crossmatch if:

1) they have not received a previous graft
2) they have been shown to be consistently negative for HLA antibodies by Luminex testing or have a consistent HLA antibody profile
3) they have sent a recent (<3 months) sample to the laboratory and have had no sensitising events since the last sample was tested i.e. transfusions, failed pregnancies etc

The recipient transplant coordinator will hold a list of these patients and they will confirm with the senior Clinical Scientist that a pre-transplant crossmatch is not necessary. Donor and recipient samples are still required to be sent to the lab.

Reporting of Crossmatch Results

Results of the compatibility testing will be phoned to the recipient transplant co-ordinator as soon as they are available. A report of the crossmatch results will be generated and faxed to the Recipient Transplant Co-ordinator. Reports will show the crossmatch results for the CDC and flow crossmatch, where applicable. A comment may also be included to interpret the data generated. Any unexpected positive crossmatch result will be discussed between the on call healthcare scientist and the on call senior Clinical Scientist who will also be available to discuss any findings with the clinical team.
Living Donor Transplants (local, altruistic or paired exchange)

If a potential living donor has been identified for a patient then compatibility testing must be performed. The transplant co-ordinator will discuss with the laboratory when the samples are being taken. Copies of the ABO blood group must also be sent to the laboratory.

Samples required for initial testing are:

**Donor**  
5ml EDTA or Sodium Citrate for initial compatibility assessment

**Recipient**  
10ml Clotted Sample for HLA antibody screening

If the recipient has not been HLA typed then the following samples are also needed:

5ml EDTA for HLA class I & II typing

10ml Clotted Sample for HLA antibody screening

The crossmatch can then be repeated as necessary in the lead up to the transplant with a final crossmatch performed a few days before the operation.

Samples required for final/ additional testing are:

**Donor**  
15ml EDTA or Sodium Citrate

**Recipient**  
10ml Clotted Sample for HLA antibody screening

10ml EDTA for auto crossmatch

Post Transplant Monitoring

Post solid organ transplant samples will only be screened for HLA antibodies if clinically indicated, i.e. patients creatinine has risen and /or there is evidence of biopsy proven rejection. It is therefore important that the request form accompanying these samples indicates that these conditions exist for the test to be performed.
Section II

HLA Testing for Recipients of Autologous Haematopoietic Stem Cell Transplants

The laboratory provides HLA class I typing and HLA antibody screening for patients requiring autologous haematopoietic stem cell transplant. This is to ensure that HLA typing and screening information is available should the patient become refractory to random donor platelet transfusions.

Samples required are:

**Patient**

<table>
<thead>
<tr>
<th>Sample Type</th>
<th>Volume</th>
<th>Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>5ml EDTA</td>
<td></td>
<td>for HLA class I typing</td>
</tr>
<tr>
<td>10ml Clotted Sample</td>
<td></td>
<td>for HLA antibody testing</td>
</tr>
</tbody>
</table>

CD34+ Enumeration

The laboratory provides flow cytometric enumeration of CD34+ hematopoietic stem and progenitor cells (HSCs) for evaluation of graft adequacy of peripheral blood and bone marrow stem cell grafts.

Samples are provided by the Clinical Apheresis Unit and Tissue and Cells Directorate for evaluation.

Please be aware that as the CD34 enumeration assay gives an absolute value, there is an inherent uncertainty (or variability) in the data generated. Testing of high and low control samples in the CD34 enumeration assay enables an assessment of this uncertainty of measurement. Please contact the laboratory for discussion or advice on results if necessary.
Section III

Platelet Immunohaematology

The H&I laboratory provides both platelet antibody screening and platelet antigen typing to aid in the investigation, diagnosis and possible treatment of a variety of thrombocytopenias.

The main platelet investigations undertaken are cases of immunological platelet refractoriness, suspected cases of foetal neonatal alloimmune thrombocytopenia (FNAIT) and suspected cases of heparin induced thrombocytopenia (HIT). Any request for platelet investigations should be discussed with the BTS/Haematology duty specialist registrar. The duty specialist registrar can be contacted by phoning the laboratory and giving the patient’s details, the requesting doctor’s name and phone number, so that the duty specialist registrar can phone them or by contacting the switchboard at the RIE on 0131 242-1000 and asking for the ‘duty BTS registrar’.

Platelet antibody screening is performed by a qualitative solid phase ELISA technique designed to detect IgG antibodies to HLA class I antigens and to epitopes on the platelet glycoproteins IIb/IIIa, Ia/IIa and Ib/IX. Because the current ELISA method for determining HPA antibodies cannot identify HPA-15a/15b antibodies, all cases are sent for further testing by MAIPA to the SNBTS Platelet Reference laboratory in Aberdeen. Further testing by additional techniques can also identify specific HLA class I antibodies.

Platelet typing is performed by HPA-SSP, which types for HPA-1a, 1b, 2a, 2b, 3a, 3b, 4a, 4b, 5a, 5b, 6a, 6b, 9a, 9b, 15a, and 15b antigens.
Foetal Neonatal Alloimmune Thrombocytopenia (FNAIT)

FNAIT is caused by maternal IgG alloantibodies directed against HPA present in the fetus/neonate and absent in the mother. Whilst numerous alloantigens have been described, HPA-1a is the most immunogenic and accounts for approximately 80% of severe cases. The next most common is HPA-5b.

Investigation of FNAIT by the H&I laboratory will be undertaken after the requesting doctor discusses the case with the BTS/Haematology duty specialist registrar. The ELISA platelet antibody screen will detect antibodies against HPA-1a, 1b, 3a, 3b, 5a, 5b antigens, epitope GPIb/IIa and HLA class I. A sample will also be sent to the SNBTS Platelet Reference laboratory for MAIPA to detect HPA15a/15b.

If specific platelet antibodies are found the parents/baby can be HPA typed and the phenotype of mother and father/baby compared. This will help to identify any HPA antigens to which the mother might have developed antibodies.

If specific platelet antibodies are not identified the parents are HPA typed and the phenotype of mother and father compared. If indicated an indirect platelet immunofluorescence test (iPIFT) can be performed between the mother’s serum and father’s platelets in the Aberdeen MI laboratory. This more sensitive test will detect any weak antibodies in the mother not detected by ELISA, although notice must be taken of the presence of maternal HLA antibodies which will also react with the father’s platelets. It will also detect any antibodies against antigens not included in the ELISA test.

Samples Required: 2 x 10mls Clotted and 5ml EDTA from mum for HPA and HLA antibody screening and HPA typing
5ml EDTA from dad and baby for HPA typing
Buccal smear from neonate. Saliva collection kits available from lab (0131-242-7528)
Heparin Induced Thrombocytopenia (HIT)

Heparin induced thrombocytopenia (HIT) occurs when patients receiving heparin develop antibodies that recognise sites on a platelet protein, platelet factor 4 (PF4), that are created when PF4 forms a complex with heparin or other linear polyanionic compounds. This leads to thrombocyopenia and if heparin continues to be administered, there is a risk that the thrombocyopenia will become more severe with the risk of arterial or venous thrombosis.

The diagnosis of HIT is based on a combination of a clinical pre-test probability score (4T score) and the results of laboratory testing (HIT assays).

1. The laboratory tests for the presence of antibodies against PF4 complex by two different techniques. The first is the rapid Particle Gel Immuno Assay (Pa-GIA) which detects heparin/PF4 antibodies of all classes.
2. The second is a solid phase ELISA microwell test that utilises a PF4/polyvinyl sulfonate (PVS) complex.

Repeating any positive results and diluting the patient’s serum with a buffer containing an excess amount of heparin that the patient has received allows the determination that antibodies against heparin are present.

Choice of HIT assay based on local availability and 4T-score

4T score 0-3: HIT assay not normally indicated. If HIT- testing still deemed necessary, it can be tested by either the rapid particle gel immunoassay or ELISA.
4T score 4-5: Either the rapid particle gel immunoassay or the ELISA. If the rapid particle gel immunoassay is positive, confirmation by IgG-specific ELISA is required.
4T score 6-8: All cases are tested by ELISA

Samples Required: 10ml Clotted Sample
Sample of Heparin that the patient has received

Please be aware that as the HIT ELISA assay gives a value, there is an inherent uncertainty (or variability) in the data generated. Monitoring of negative and positive control samples in the HIT ELISA assay enables an assessment of this uncertainty of measurement. Please contact the laboratory for discussion or advice on results if necessary.
HLA/HPA Matched Platelets for Platelet Refractoriness

Platelet Transfusion Refractoriness may result from immune or non-immune platelet destruction. The following can be targets for clinically relevant platelet allo-antibodies that can cause immune platelet refractoriness.

1. the ABO blood system
2. HLA class I antigens.
3. Human Platelet Antigens (HPA)

The H&I Laboratory investigates the presence of allo-antibodies against HLA class I antigens and/or antibodies directed against HPA. It should be noted that HPA antibodies in the absence of HLA class I antibodies are a rare cause of poor increments. The exception is if the HPA antibody is against a high frequency HPA alloantigens (e.g. HPA-1a) when it might cause poor increments with platelets from nearly all random donors.

Samples Required:  
2 x 10ml Clotted Sample for HLA and HPA antibody screen  
5ml EDTA for HLA and HPA typing

Depending on the antibody and typing results, HLA class I and/or HPA compatible platelets can be provided. For the provision of HLA/HPA matched platelets the following criteria should be met:

1. exclusion of non-immune causes of platelet refractoriness  
2. platelet refractoriness to ABO compatible platelets on two or more occasions  
3. A positive result when screening the patient for HLA class I antibodies.

A search is performed on all blood donors suitable to donate apheresis platelets who have been HLA class I typed (and HPA typed where relevant). If compatible HLA/HPA platelets are required, the H&I laboratory and the BTS/Haematology duty specialist registrar should be informed and given as much notice as possible. It takes time to call specific donors in and perform mandatory donor testing before platelets can be released.
## Appendix 1 (H&I and platelet immunohaematology laboratory request form)

<table>
<thead>
<tr>
<th>Patient / donor information</th>
<th>Solid organ transplant (including islets)</th>
<th>Platelet refractoriness / HIT / FNAIT</th>
<th>Disease association testing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital / CHI no:</td>
<td>Initial / confirmatory HLA type:</td>
<td><strong>ALL SAMPLES MUST BE HANDWRITTEN</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5ml EDTA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surname:</td>
<td>HLA antibody screen (inc DSA investigation):</td>
<td>All tests must be arranged via BTS duty haematologist (Daytime #2215 / OOH - switchboard)</td>
<td></td>
</tr>
<tr>
<td>Forename (in full):</td>
<td>10ml clotted</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DOB: M/F</td>
<td>Crossmatch (by arrangement)*:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hospital / ward:</td>
<td>10ml EDTA (donor)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical condition:</td>
<td>10ml EDTA and 10ml clotted (recipient)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Sample information**

| Requesting clinician:      | Haematology                                |                                     |
|----------------------------|--------------------------------------------|                                     |
| Sample taken by:           | Initial / confirmatory HLA type:           |                                     |
| Date and time:             | HLA-A, -B, -C (autologous tps) 5ml EDTA    |                                     |
| Routine / urgent*:         | HLA-A, -B, -C, -DR, -DQ (allogenic tps) 5ml EDTA |                                     |
| Risk of infection: Yes/No  | HLA antibody screen:                       |                                     |
| * Please contact lab directly if result is required urgently – use number above | 10ml clotted |                                     |

**Lab use only**

| Date / time received:      | Accepted by:                              |                                     |
|----------------------------|-------------------------------------------|                                     |
| Registered by:             |                                            |                                     |
| Archive location(s):       |                                            |                                     |

<table>
<thead>
<tr>
<th>Serum -</th>
<th>DNA -</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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**Note:** All tests must be arranged via BTS duty haematologist. Please complete one request form for donor and one for recipient. **All tests are to be arranged via BTS duty haematologist**.