

Immunology User Handbook

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2. Introduction

Dear Colleagues,

In this handbook you will find basic information concerning the Immunology department, including location and telephone numbers. Details of commonly requested tests and other services are given, together with the turnaround time for some tests. You may already be in possession of some of these facts, and this guide is really a compilation of the appropriate information in one booklet. Please contact laboratory on 01709 424250 if any further information or guidance on unusual tests is required.

Although laboratory turnaround times are shown, experience has indicated that unexpected delays can occur with either instrument failure and/or in the transmission of results.

3. Laboratory Opening Times

Normal Service: Monday - Friday 09.00 hrs – 17.00 hrs

On call services in Biochemistry, Haematology / Blood Bank and Microbiology outside these hours but **no** out of hours' services in Immunology.

4. Location of the Laboratory

The Laboratory is situated on 'A' level (top floor). Following the signs for Pathology, at the T junction near the central lifts, go down the corridor opposite the lifts and the Pathology department is first on the left double wooden doors. Pathology Reception is straight ahead.

5. Laboratory Advice/General Enquiries

Immunology Manager/Immunology Senior:

Direct Line: 01709 424250
Internal: 4250

Extensions can be obtained via the Hospital Switchboard 01709 820000.

For urgent requests: 01709 424250 (internal 4250)

6. Clinical Advice/Interpretation

Dr Shrimpton currently works on Mondays, Wednesdays and Fridays. Dr Shrimpton is at Rotherham Immunology laboratory one Monday per month (usually the third or fourth Monday of the month) and she is in the office at NGH on the other Mondays.

a. For Urgent Advice

- If urgent advice is required on Monday when Dr Shrimpton is not in Rotherham, ring her at the Northern General Hospital on 0114 2715727.

- If urgent advice is required on a Wednesday or a Friday, call her secretary on 0114 2269020 or email anna.shrimpton@sth.nhs.uk
- On Tuesdays or Thursdays or if Dr Shrimpton not available, try Graeme Wild or Kirsty Swallow (clinical scientists at STH) on 0114 2715394

b. For Non-Urgent Advice

Email anna.shrimpton@sth.nhs.uk or contact the Laboratory on x4250.

7. Request for Immunology Analyses

The preferred sample for most Immunology tests is a serum (brown top) sample. Generally a 5ml clotted (serum) sample is sufficient for at least 6 full profiles. If the total number of requests (including biochemistry requests) is greater than 10, please take a second serum sample.

Samples for EPR requests and ICE ordercoms should be received in the appropriate green bags and general request forms must be accompanied by the appropriate samples. Remove the brown self-adhesive tape to reveal the glued area, and then fold along the perforations so the glued area attaches to the plastic and securely seals the specimen bag. Remove the second brown self-adhesive tape and attach the specimen bag to the top section of the ICE ordercoms (may be hand written or ordercoms) request form.

8. Specimen Handling

Manual request forms must have clear legible labelling on the form and specimens for EPR, ICE ordercoms and manual requests must be legible.

A fully completed request form must include:-

- Patient's full name
- Date of birth
- Rotherham Hospital number and / or NHS No
- Ward
- Initials of the patient's Consultant

Patient Details on Samples must include:-

- Patient's full name, DOB plus either Rotherham hospital No or NHS number.
- Date and time sample taken

Current laboratory criteria for accepting/rejecting samples are that all forms and samples should have a minimum of the full name (forename and surname), DOB and either the patient hospital or NHS number. A&E only can either use a hospital or A&E number.

Hard copies of all reports issued by the laboratory include the relevant age and sex related reference ranges. The following reference ranges relate to adults only. See Paediatric handbook if appropriate.

Ensure the lid of all specimen bottles is secured before the bottle is placed into the plastic pockets. All specimen bottles must be placed in the correct plastic pocket. Samples for EPR requests and ICE ordercoms should be received in the appropriate green bags and general request forms must be accompanied by the appropriate samples. Remove the brown self-adhesive tape to reveal the glued area, and then fold along the perforations so the glued area attaches to the plastic and securely

seals the specimen bag. Remove the second brown self-adhesive tape and attach the specimen bag to the top section of the ICE order comms (may be hand written or order comms) request form.

a. High Risk Samples

When packaging individual specimens from patients known to have a blood borne virus or CJD, please attach a 'danger of infection' label to both the specimen bottle and request form. This will ensure the safe handling and disposal of the specimen. Note: these specimens do not need to be transported separately.

Samples from patients falling into the categories below should be regarded as high risk for the laboratory:-

HIV antibody positive.

Hepatitis B surface antigen or e antigen positive.

Hepatitis C positive.

I/V drug user

Sexual contact of any of the above.

Recent jaundice - cause not known.

Haemophiliacs treated with blood products.

Patients with clinical features of AIDS.

Known positive COVID-19 patients

9. Transportation of Specimens to the Laboratory

GP samples are usually transported using Courier Logistics (a private provider). Hospital samples are delivered either via the air tube system or by hand to the Laboratory Specimen Reception Department.

10. Specimen Reception

All samples arrive at the laboratory via the centralized specimen reception area. The specimen reception area also deals with initial result enquiries for all departments with the exception of Histopathology and Cytology. Specimen Reception contact numbers are as follows:

Results enquiries 01709 427553 (internal 7553)

Any queries regarding Specimen Reception should be directed to the Specimen Reception Manager on any of the above numbers.

11. Additional Tests

Separated blood samples are retained in a refrigerated state. If additional tests are required to be added to samples already in the department then this may be arranged. Any additional requests must be made within 5 days of the sample being taken using either the 'Biochemistry Additional Requesting Form' available on inSite or a Pathology Request Form. ALL patient/ clinician details must be included as detailed above.

If additional tests are required after 5 days please telephone the department with any such requests. Some tests may be affected by a delay in analysis after the sample is taken from the patient, laboratory staff may be able provide the additional testing subject to test stability and storage.

12. Turnaround Times

These are based on the average expected turnaround time from receipt of sample to time of report. We aim to get 90% of results available in this stated time but there may be exceptions with samples processed over extended bank holiday periods and tests performed at specialist referral laboratories.

It is important to note that results are often available on ICE before the times quoted and in addition any urgent results that may affect the clinical management of the patient are telephoned by Biomedical Scientific staff as soon as available.

Should reporting the result from a sample be significantly delayed and thus compromise patient care, for example through equipment failure, supply problems or contamination issues, the user will be contacted, informed of the reasons and advised of a proposed date for resolution of the problem. An internal incident/internal investigation by CAPA and Datix reporting will be performed if appropriate.

13. Measurement of Uncertainty

The laboratory makes regular estimates of measurement uncertainty for all analytes. Please contact the laboratory if further information is required.

14. Referred Work

The department holds a list of test repertoire and accreditation status of all laboratories to which work is routinely referred. This list is available on request. Referral work is primarily sent to NGH:

Immunology Department
Northern General Hospital
Herries Road
Sheffield S5 7AU
Tel: 0114 271 5552

Special note on mast cell tryptase if suspected anaphylaxis:

Take a sample as soon as possible after emergency treatment has started and another 1-2 hours after symptoms start (no later than 4 hours). These need to be compared to a baseline level that can be taken 24 hours later or at clinic follow up visit if the patient has been discharged. If mastocytosis baseline level check, no restrictions on timing of sample. TAT 2 weeks.

Please ensure time and date of sample are on both form and sample with some indication of time elapsed post anaphylactic event if possible.

Immunodeficiency vaccine response testing:

Manchester Medical microbiology partnership
Manchester Royal Infirmary
Central Manchester hospitals trust
Oxford Road
Manchester
M139WL
Tel: 0161 276 6757

Specialised Neurology Testing:

Immunology Department
Churchill Hospital
Old Road
Headington
Oxford
OX3 7LJ
Tel: 01865 225995

15. Immunology Tests Performed In-House

Test	Specimen Type	Reference Range and Source	Comments Including Turnaround Times (TAT)	Patient preparation/factors affecting test/clinical decision values/special precautions
A1AT (αI Anti-Trypsin)	5 ml Clotted (Serum)	1.10 - 2.10 g/L PRU (Protein reference units) handbook of clinical Immunochemistry, Ninth edition	Phenotyping performed if <0.8g/L or on request/family history. TAT 2 days for level, a further 3 weeks for phenotyping	
Autoimmune Profile (includes ANA only)	5 ml Clotted (Serum)	Negative	Please request specifically if LKS (multi tissue block) also required. TAT 3 days if negative, a further 7 days if reflex testing required (this may include one or more of the following: centromere B, ENA screen, ENA typing, DNA, crithidia, LKS, M2)	
AGLA (Anti gliadin antibody)	5 ml Clotted (Serum)	Negative	Not performed as part of routine coeliac screen testing. TAT 3 days	
ANCA (Anti neutrophil cytoplasmic antibody)	5 ml Clotted (Serum)	Negative	PR3 and MPO assayed if the screen is positive. TAT 2 days screen, further 1 day for MPO/PR3.	
B2M (B2 Microglobulin)	5 ml Clotted (Serum)	1.2 - 2.4 mg/L	TAT 1 week	Results affected by renal function
BJP (Bence Jones Protein)	MSU (unpreserved specimen)	Negative (if no visible band by eye)	Typed and quantitated if positive. TAT 1 week	
Caeruloplasmin	5 ml Clotted (Serum)	0.20 – 0.60 Kit insert	TAT 2 days	Falsely low levels in lipaemic or haemolysed samples

Test	Specimen Type	Reference Range and Source	Comments Including Turnaround Times (TAT)	Patient preparation/factors affecting test/clinical decision values/special precautions
Coeliac Screen Includes TTG (frontline test) and subsequent anti-endomysial IgA antibodies/ IgG anti tTG antibodies as required	5 ml Clotted (Serum)	tTG: <10 u/mL Anti-Endomysial Ab: Negative Kit insert	IgA anti tTG performed for screen. Anti-endomysial Abs performed if tTG > 7.0 Total IgA performed if low tTG result. IgG anti tTG performed if IgA deficient. TAT 7 days for tTG result, a further 1 week for the other tests.	A serological test for coeliac disease is only accurate if a gluten-containing diet has been followed for at least 6 weeks prior to the test. A gluten-containing diet = some gluten consumed in more than one meal every day. Ref: Coeliac disease: recognition, assessment and management (2015) NICE guideline NG20
Complement (C3 and C4)	5 ml Clotted (Serum)	C3 0.75- 1.65 g/L C4 0.14- 0.54 g/L PRU (Protein reference units) handbook of clinical Immunochemistry, Ninth edition	TAT 2 days	
Cryoglobulins	5 ml Clotted plus 4ml EDTA (Serum and Plasma)	Negative	Collected at 37°C and taken to laboratory as soon as possible in thermos flask available from the lab. Contact the lab to arrange. OPD and GP patients taken at RDGH phlebotomy preferably. TAT 1 week for screen, 2 weeks for full analysis. Screen performed in house. Positive screen sent to Immunology, NGH, for further analysis.	Samples need to be collected and kept at 37°C until separation

Test	Specimen Type	Reference Range and Source	Comments Including Turnaround Times (TAT)	Patient preparation/factors affecting test/clinical decision values/special precautions
EPO (erythropoietin)	5 ml Clotted (Serum)	5.5 – 28.4 mIU/ml Kit insert	TAT 5 days	
dsDNA (Double Stranded DNA Antibody)	5 ml Clotted (Serum)	< 20 u/L Kit insert	Positive results reflexed for Crithidia Lucillae test. Crithidia is not a routinely requested test, please discuss with the laboratory. TAT 3 days plus further 1 week for Crithidia.	
ENA (Extractable Nuclear Antigens)	5 ml Clotted (Serum)	Negative	Screen Includes Ro, La, Sm, RNP, Jo1, Scl 70. Typed if screen positive. TAT 3 days for screen, up to further 2 weeks for typing	
Glomerular Basement Membrane Antibody	5 ml Clotted (Serum)	< 20 Kit insert	TAT next working day	
Immunoglobulins (IgG, IgA, IgM)	5 ml Clotted (Serum)	IgG 6.0 – 16.0 g/L IgA 0.8 – 4.0 g/L IgM 0.5 – 2.0 g/L PRU (Protein reference units) handbook of clinical Immunochemistry, Ninth edition	Age related reference ranges available from laboratory. All requests also include an electrophoresis comment. TAT 3 days	
IgG Aspergillus precipitins:	5 ml Clotted (Serum)	< 25 mg/L Page <i>et al</i> (2018) "Receiver operating characteristic curve analysis of four Aspergillus-specific IgG assays for the diagnosis of chronic pulmonary aspergillosis". Diagnostic Microbiology and Infectious Disease.	TAT 2 weeks	

Test	Specimen Type	Reference Range and Source	Comments Including Turnaround Times (TAT)	Patient preparation/factors affecting test/clinical decision values/special precautions
Intrinsic Factor	5 ml Clotted (Serum)	Negative	TAT 3 days	
LKS (liver kidney stomach multiblock). Includes the following: AMA (anti mitochondrial Ab) ASMA (anti smooth muscle Ab) APCA (anti parietal cell Ab) ALKM (anti liver kidney microsomal Ab)	5 ml Clotted (Serum)	Negative	TAT 3 days	
IgE testing (Allergy Screen)	5 ml Clotted (Serum)	Total IgE < 81 u/L Allergen < 0.35 kua/L PRU (Protein reference units) handbook of clinical immunochemistry, Ninth edition	Age related range for IgE. Allergy testing includes Total IgE. Please specify all allergens required. TAT 1 week.	
TPO (Thyroid Peroxidase)	5 ml Clotted (Serum)	< 35 u/L Kit insert	TAT 1 week	