## Immunology

The Immunology Department provides both Clinical and Laboratory Services. Additionally we are keen to assist with the development of guidelines for investigations of potential immunological disorders, clinical audit and other educational activities.

### Clinical Service

There is a general immunology clinic held in Clinic A on Monday mornings and an allergy clinic held in Clinic F on Thursday afternoons. Additionally, ANP led allergy clinics are held in the department on Monday, Tuesday, Wednesday and Thursday mornings. The Department also has an established home therapy programme for patients on immunoglobulin replacement therapy and an ANP-led review clinics for these patients are held in the department on Thursday afternoons.

Referrals are accepted from hospital teams and GPs. Self-referrals from patients cannot be accepted. Appropriate referrals include known or suspected immunodeficiency, recurrent infections, serious allergy (anaphylaxis) or angioedema, as well as difficult autoimmune disease. A detailed referral letter including current medications, previous treatments and laboratory investigations with results should be sent to Prof. Keogan/Dr Khalib/Dr Cox. Please ensure that the patients’ correct address and phone number is included.

For perioperative anaphylaxis assessment referrals, a referral Proforma must be completed. This Proforma is available for download from the departmental intranet and internet homepage.

Appointments are allocated on the basis of clinical urgency. Due to the long waiting time, we do not routinely offer second appointments to patients who fail to attend without cancelling their appointment.

### Laboratory Service

The Laboratory provides a large range of immunological investigations focussing on investigations for autoimmune and allergic disorders. Details of disease specific test profiles and test repertoire and disease specific test profiles are provided below. Some immunology tests are carried out in the Protein chemistry and Haematology laboratories.

When we are unable to provide a clinically important assay, we will attempt to source a referral laboratory, to which specimens may be sent. We welcome input from interested clinicians in this process. The choice of laboratory is primarily based on quality grounds, with only accredited laboratories being chosen. If a clinically important test is only available on a research basis only, the immunology team is available for further discussion. Other factors such as cost and turnaround times are also considered. A list of commonly requested referred investigations is included below in section 3.5.6.

### Out-of-Hours Service

There are no arrangements in place as yet to provide an out-of-hours service. On the rare occasions when there is genuine clinical urgency in performing an assay, every effort is made to perform the relevant test, however such a service cannot be guaranteed.

The Consultant Immunologist on-call, Prof. Keogan/Dr Khalib/Dr Cox can be contacted through the switch board for clinical advice out-of-hours. If immunological investigations would affect a patient’s management on an out-of hours or urgent basis, such requests should be discussed with Prof. Keogan/Dr Khalib/Dr Cox by a senior member of the clinical team who is familiar with the patient’s history.

### Educational Activities

If you feel that Immunology input would be helpful in some of your training or audit activities, please contact Prof. Keogan/Dr Khalib/Dr Cox.

### Urgent Requests

An urgent service is available for some assays. We will only consider performing urgent assays when the result obtained is likely to affect the patient’s management. It is helpful if requests for urgent samples can be made by telephone as early as possible in the day.

Urgent requests must be discussed with a senior member of the scientific staff in the first instance, and may also require discussion with the consultant immunologist. Additionally when requesting an urgent test, please use the ‘STAT’ flag on the computer system. Please remember however, that a ‘STAT’ flag alone does not ensure that the specimen will be processed immediately. Urgent samples must be hand delivered to the Immunology laboratory.

### Tests Referred to External Laboratories

Please note dispatch of samples to our referral labs is done weekly however urgent referral is available pending discussion.  
Note: Due to a lack of courier service to UK/Europe the turnaround times for referral tests during the Christmas/New Year period is increased by on average 7-10 days.

| **Test** | **Mnemonic** | **Sample Requirements** | **Notes** | **Referral Lab** | **Ref Range** | **Turn-Around Time** |
| --- | --- | --- | --- | --- | --- | --- |
| Adalimumab (both levels & IgG antibodies) | ADALIM & ADALIMIGG | Serum Gel Tube 4.9mls |  | Dept of Immunology, Sheffield |  | 2-4 Weeks |
| Anti-Acetylcholine Receptor Antibodies | ACRA | Serum Gel Tube 4.9mls |  | Glasgow Neuroimmunology Laboratory | <0.5 nmol/L | 1 Month |
| Anti-Aquaporin 4 Antibodies (NMO) | AQUA4 | Serum Gel Tube 4.9mls |  | Neurosciences Group, Oxford | Negative | 4 Weeks |
| Anti-Aquaporin 4 Antibodies (NMO) CSF | AQUA4CSF | CSF |  | Neurosciences Group, Oxford | Negative | 4 Weeks |
| Anti-C1Q Antibodies | ANTIC1Q | Serum Gel Tube 4.9mls |  | Dept of Immunology, Sheffield | 0-15 u/mL | 2-4 Weeks |
| Anti-Cardiac and Striated Muscle Abs | MUSCLEABSO | Serum Gel Tube 4.9mls |  | Dept of Immunology, Sheffield | Negative | 24 days |
| Anti- Diphtheria antibodies | DIPH | Serum Gel Tube 4.9mls |  | Manchester Medical Microbiology Partnership | 0.1IU/mL protective level | Up to 3 Months |
| Anti-Gangleoside Antibodies | GANG AB | Serum Gel Tube 4.9mls |  | Glasgow Neuroimmunology Laboratory | Negative | 18 days |
| Anti-Ganglioside Antibodies (CSF) | GANG ABCSF | CSF |  | Neurosciences Group, Oxford | Negative | 18 days |
| Anti-Glutamic Acid Decarboxylase Antibody | GAD | Serum Gel Tube 4.9mls |  | Immunology Dept, Mater Hospital | <9 IU/mL | 5 Weeks |
| Anti-Haemophilus influenzae B Antibodies (HIB) | HIB | Serum Gel Tube 4.9mls |  | Immunology Black Country Pathology Services New Cross Hospital | 0.15 mg/L Minimum protective level | Up to 2 Months |
| Anti-Insulin Antibody | INAB | Serum Gel Tube 4.9mls |  | Dept of Immunology, Sheffield | <5 mg/L | 19 days |
| Anti-Islet Antigen Type 2 Antibodies | IA2 | Serum Gel Tube 4.9mls |  | Dept of Immunology, Sheffield | <10 IU/mL | 4 Weeks |
| Anti-Islet Cell Antibodies | ICA | Serum Gel Tube 4.9mls |  | Dept of Immunology, Sheffield | Negative | 24 days |
| Anti-Musk Antibodies | MUSK | Serum Gel Tube 4.9mls |  | Neurosciences Group, Oxford | Negative | 4-6 Weeks |
| Anti-MAG antibodies | MAGA | Serum Gel Tube 4.9mls |  | Neurosciences Group, Oxford | 0-1000 BTU | 3-4 Weeks |
| Anti-MOG Antibodies | MOG | Serum Gel Tube 4.9mls |  | Neurosciences Group, Oxford | Negative | 5 Weeks |
| Anti-Myelin Oligodendrocyte Antibodies (CSF) | MOGCSF | CSF |  | Neurosciences Group, Oxford | Negative | 5 Weeks |
| Anti-Ovarian Antibodies | OVA | Serum Gel Tube 4.9mls |  | Dept of Immunology, Sheffield | Negative | 1 Month |
| Anti-PLA2R Antibodies | PLA2R | Serum Gel Tube 4.9mls |  | Dept of Immunology, Sheffield | 0-13 RU/mL | 4 weeks |
| Anti-Tetanus Antibodies | TET | Serum Gel Tube 4.9mls |  | Immunology Black Country Pathology Services New Cross Hospital | 0.01-0.09 IU/mL Basic protection | Up to 2 Months |
| Anti-Thyroid Receptor Antibodies | TRAB | Serum Gel Tube 4.9mls | TRAB results are scanned into PIPE and can be accessed via Patient Search. | Dept. of Endocrinology, St. James Hospital | <1.8 IU/L | 24 days |
| Anti-Voltage Gated Ca Channel Antibodies | VGCC | Serum Gel Tube 4.9mls |  | Neurosciences Group, Oxford | 0-45 PM/L | 4-6 Weeks |
| Anti-Voltage Gated Ca Channel Abs CSF | VGCCCSF | CSF |  | Neurosciences Group, Oxford |  | 4-6 Weeks |
| Anti-Voltage Gated K+ Channel Antibodies | VGKC | Serum Gel Tube 4.9mls |  | Neurosciences Group, Oxford | 70-130 PM/L Equivocal  >130 PM/L Positive | 4-6 Weeks |
| Anti-Zinc Transporter Antibodies | ZNT8 | Serum Gel Tube 4.9mls |  | Dept of Immunology, Sheffield | <10 U/mL | 24 Days |
| Biologics (except Infliximab, Adalimumab & Rituximab) serum levels & IgG antibodies) | BIOLOGIC & BIOLOGICIGG | Serum Gel Tube 4.9mls | Requesting Clinician to complete Biologics Request Form (LF-IMM-GEN0055) Please contact lab for details. | Sanquin Diagnostic Services, Amsterdam |  | 2-4 Weeks |
| C3 Nephritic Factor | C3NF | Fresh frozen Serum Gel Tube 4.9mls | Only done on C3 reduced samples | Dept of Immunology, Sheffield | Negative | By Arrangement |
| Complement C1q Level | C1QLEVEL | Serum Gel Tube 4.9mls |  | Dept of Immunology, Sheffield | 50-250 mg/L | 4-6 Weeks |
| Complement C2 | C2 | Serum Gel Tube 4.9mls |  | Dept of Immunology, Sheffield | 10-30 mg/L | 4-6 Weeks |
| Complement Function | COMPFSO | Serum Gel Tube 4.9mls | Serum must be separated & frozen maximum of 3 hours after venepuncture | Dept. of Immunology, St James Hospital | Normal | 3 months |
| Functional C1 Inhibitor | C1INHFXN | Serum Gel Tube 4.9mls |  | Dept. of Immunology, St James Hospital |  | 35 days |
| IgG Subclass 4 | IGG4 | Serum Gel Tube 4.9mls |  | Dept of Immunology, Sheffield | Age Related. Adult 0-1.3 g/L | 19 days |
| Infliximab (both levels & IgG antibodies) | INFLIXIGG &INFLIX | Serum Gel Tube 4.9mls |  | Dept of Immunology, Sheffield |  | 2-4 Weeks |
| Meningococcal Serology (Serotype Specific Antibodies) | MENINGO | Serum Gel Tube 4.9mls |  | Manchester Medical Microbiology Partnership | Serogroups A,C,Y,W >=8 rSBA Titre protective | Up to 3 Months |
| Neutrophil Oxidative Burst | OXBURSTSO | Fresh EDTA  4mls plus travel control |  | Dept. of Immunology, St James Hospital | Normal | By Arrangement/12 days |
| Rituximab (both levels & IgG antibodies) | RITUX & RITUXIGG | Serum Gel Tube 4.9mls | Requesting Clinician to complete Biologics Request Form (LF-IMM-GEN0055) Please contact lab for details. | Sanquin Diagnostic Services, Amsterdam |  | 2-4 Weeks |
| Specific IgE Referral | SIGEREFERRAL | Serum Gel Tube 4.9mls |  | Dept of Immunology, Sheffield |  | 24 days |
| Serotype Specific Anti-Pneumococcal Antibodies | SSPNEUM | Serum Gel Tube 4.9mls |  | Immunology Addenbrooks Hospital, Cambridge | 0.35g/mL Protective | 4-6 Weeks |
| Urinary Soluble CD163 | UCD163 | Urine |  | Dept. of Immunology, St James Hospital |  | 28 days |

#### Contact Details of External Laboratories

1. Neurosciences Group, Headington, Oxford Tel:00 44 186 522 5995
2. Glasgow Neuroimmunology Laboratory. Tel:00 44 141 354 9010
3. Dept of Immunology, Northern General Hospital, Sheffield. Tel:00 44 114 271 5552
4. Dept. of Immunology, St James Hospital, Dublin 8. Tel:01 416 2924/2925
5. Immunology Black Country Pathology Services New Cross Hospital. Tel: 00 44 01902 695279
6. Immunology Department, Mater Misericordiae University Hospital, Dublin 7. Tel: 01 803 2398/2119
7. Manchester Medical Microbiology Partnership Tel: 0044 161 276 8854
8. Immunology Addenbrooks Hospital, Cambridge University Hospitals NHS Foundation Trust.   
   Tel: 0044 122 321 6729
9. IMD Berlin, Nicolaistraße 22, Berlin, 12247, Germany Tel: +49 30 77001-220
10. Sanquin Diagnostic Services, Dept UDC, Plesmanlaan 125, 1066 CX Amsterdam, The Netherlands

Tel: 0031 20 512 3449

### Repertoire of Tests & Test Profiles

All tests are performed on serum samples. Up to 5 tests can be performed on a 10 mL sample. However separate samples are required for some tests to facilitate optimum handling.

| **Test** | **Specimen** | **Minimum**  **Volume** | **Method** | **Reference Range** | **TAT** | **Urgent**  **Service** | **Comment** | **Mnemonic** | **Frequency**  **of Retesting** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Anti-Adrenal Antibodies | Serum Gel Tube | 4.9mls | Indirect immunofluorescence | Negative | 4 weeks |  |  | ADRA | 6 months |
| Anti-Beta2Glycoprotein 1 (IgG and IgM) | Serum Gel Tube | 4.9mls | EliA (IMMUNOCAP) | <10 U/ml | 8 days |  |  | APS | 12 weeks |
| Anti-Cardiolipin Antibodies (IgG and IgM) | Serum Gel Tube | 4.9mls | EliA (IMMUNOCAP) | IgG: 0-10 GPLU/mL  IgM: 0-10 MPLU/mL | 8 days |  |  | APS | 12 weeks |
| Anti-CCP | Serum Gel Tube | 4.9mls | EliA (IMMUNOCAP) | < **7** U/ml | 8 days |  |  | CCP | 3 Months |
| Anti-dsDNA Antibodies | Serum Gel Tube | 4.9mls | EliA (IMMUNOCAP) & IIF by DNA crithidia | EliA:<10 IU/mL  IIF: Negative | EliA:<3-5 days IIF: 8 days | On Request |  | DNA | >3 weeks (unless plasma-apheresis/ discussion) |
| Anti-ENA (Extractable Nuclear Antigen) Antibodies – includes anti-Ro, La, RNP, Sm, Jo-1 & Scl-70) | Serum Gel Tube | 4.9mls | EliA with confirmation by EliA/Immunoblot | Negative for all 6 components | 2-3 weeks |  | ENA Typing is carried out on all Equivocal and Positive ENA Screens by EliA & conformed with Immunoblot | ENA | >1 year unless patient is pregnant |
| Anti-Endomysial (IgA) Antibodies | Serum Gel Tube | 4.9mls | Indirect Immunofluorescence | Negative | 8 days |  |  | EMA | >3 months |
| Anti-Endomysial (IgG) Antibodies | Serum Gel Tube | 4.9mls | Indirect Immunofluorescence | Negative | 8 days |  | Only performed when IgA deficiency | EMAG |  |
| Anti-Gastric-Parietal Cell antibodies (Anti-GPC) | Serum Gel Tube | 4.9mls | Indirect Immunofluorescence | Negative | 3-5 days |  |  | GPC | >3 months |
| Anti-Glomerular Basement Membrane antibodies (Anti-GBM) | Serum Gel Tube | 4.9mls | EliA (IMMUNOCAP) | Negative: <7U/ml  Equivocal: 7- 10U/ml  Positive: >10 Uml | 1-3 days | On Request |  | GBM | As requested & discussed |
| Anti-Histone Antibodies | Serum Gel Tube | 4.9mls | Immunoblot | Negative | 4-6 weeks |  |  | HIST | Once Off |
| Anti-Intrinsic Factor Antibodies | Serum Gel Tube | 4.9mls | EliA (IMMUNOCAP) | Negative: <7 U/ml  Equivocal: 7-10 U/mL  Positive: > 10 U/ml | 8 days |  |  | IF | >6 months |
| Anti-Liver-Kidney Microsomal (LKM and or LC1) Antibodies | Serum Gel Tube | 4.9mls | Indirect Immunofluorescence + Immunoblot if IIF positive | Negative | 3-5 days |  |  | LKM | >1 month |
| Anti-Mitochondrial Antibody (including M2 subtyping) | Serum Gel Tube | 4.9mls | Indirect Immunofluorescence + ELISA if positive | Negative  M2 ELISA <10 IU/ml | 3-5 days (1 month if IIF positive) |  |  | AMA | >3 months  M2 performed only once |
| Anti-Myeloperoxidase antibodies (Anti-MPO) | Serum Gel Tube | 4.9mls | EliA (IMMUNOCAP) | <3.5IU/mL | 3-5 days, or as required | On request | Follow-up of patients with know MPO-ANCA positive disease | MPO | 3 Weeks, unless discussed |
| Anti-Myeloperoxidase antibodies (Anti-MPO) & Anti-Proteinase 3 antibodies (Anti-PR3) | Serum Gel Tube | 4.9mls | EliA (IMMUNOCAP) | <3.5IU/mL MPO  <2IU/mL PR3 | 3-5 days, or as required | On request |  | MPR3 | 3 Weeks, unless discussed |
| Anti-Neuronal Antibodies incorporating Anti-Hu, Anti-Yo, Anti-Ri, Anti-PNMA2, Anti- Amphiphysin, Anti-Cv2/CRMP5, Anti-Recoverin, Anti-SOX1, Anti-Zic4, Anti-Titin, Anti-GAD65, Anti-Tr | Serum Gel Tube  & CSF | 4.9mls | Indirect Immunofluorescence & Immunoblot | Negative | 15 days |  | Paired Serum/CSF samples will be accepted. Results of both must be interpreted in the clinical context. | Serum: NEURONAL/ NEUROBLOT  CSF: NEURONALCSF / NEUROBLOTCSF | >6 months |
| Anti-Neutrophil Cytoplasm Antibodies (ANCA) (IIF) | Serum Gel Tube | 4.9mls | Indirect Immunofluorescence | Negative | 8 days |  |  | ANCA | 3 Weeks, unless discussed |
| Anti-NMDA Antibodies Serum | Serum Gel Tube | 4.9mls | Indirect Immunoflourescence | Negative | 8 days | Upon request |  | NMDA | Discuss with Clinical Team |
| Anti-NMDA Antibodies CSF | CSF |  | Indirect Immunflourescence | Negative | 8 days | Upon request |  | NMDACSF | Discuss with Clinical Team |
| Anti-Nuclear Antibodies | Serum Gel Tube | 4.9mls | Indirect Immunofluorescence | Negative.  Weak positive (1:80 ) are commonly seen particularly in healthy older women. | 3-5 days |  | Investigating Autoimmune Liver Disease, otherwise order CTDSCRN | ANA | No more than 3 monthly |
| Anti-Nucleosome Antibodies | Serum Gel Tube | 4.9mls | Immunoblot | Negative | 4-6 weeks |  | Strong clinical suspicion of lupus with negative routine serology. Must discuss with Consultant Immunologist. | NUCSOME | Once Off |
| Anti-Proteinase 3 antibodies (Anti-PR3) | Serum Gel Tube | 4.9mls | EliA (IMMUNOCAP) | <2IU/mL | 3-5 days, or as required | On request | Follow-up of patients with known PR3-ANCA positive disease. | PR3 | 3 Weeks, unless discussed |
| Anti-Ribosomal-P Antibodies | Serum Gel Tube | 4.9mls | Immunoblot | Negative | 4-6 weeks |  | Strong clinical suspicion of lupus with negative routine serology. Must discuss with Consultant Immunologist. | RIBOP | Once Off |
| Anti- SARS-CoV-2 Antibodies | Serum Gel Tube | 4.9mls | Immunoassay | Nucleocapsid: Not Detected  Anti-Spike: <0.8 U/ml Not Detected | 16 days |  | Nucleocapsid and Spike Antibody | ANTICV19 |  |
| Anti-Scleroderma Antibodies/ Systemic Sclerosis Panel | Serum Gel Tube | 4.9mls | Immunoblot | Negative | 4-6 weeks |  |  | SCLRDERM |  |
| Anti-Skin Antibodies | Serum Gel Tube | 4.9mls | Indirect immunofluorescence | Negative | 8 days |  |  | SKIN | 6 months but Positive ICS as requested |
| Anti-Smooth Muscle Antibodies | Serum Gel Tube | 4.9mls | Indirect Immunofluorescence | Negative | 3-5 days |  |  | SMA | >3 months |
| Anti-Streptolysin-O Titre (ASOT) | Serum Gel Tube | 4.9mls | Immunoturbidimetry | <200IU/ml | 3-5 days |  |  | ASOT | 3 weeks |
| Anti-Thyroid Peroxidase Antibodies (anti-TPO) | Serum Gel Tube | 4.9mls | Immunoassay | Negative: <=34 IU/mL  Positive: > 34 IU/mL | 8 days |  |  | TPO | >6 months; if equivocal >3 months |
| Anti-Tissue Transglutaminase Antibodies (anti-tTG) | Serum Gel Tube | 4.9mls | EliA (IMMUNOCAP) | Negative: < 4 U/ml  Equivocal: 4-10 U/ml  Positive: 10 U/ml | 8 days |  |  | tTG | >3 months |
| Autoimmune Encephalitis Panel (AIEPANEL) incorporating anti-NMDA, anti-AMPA 1/2 , anti-GABAb, anti-DPPX, anti-LGI1, anti-CASPR2 Antibodies | Serum Gel Tube  CSF | 4.9mls | Indirect Immunoflourescence | Negative | 8 days | Upon request | Paired Serum/ CSF samples required particularly during initial work up. | AIE & AAIECSF | Discuss with Clinical Team |
| Autoimmune Encephalitis Screen Serum (AIESERUM) incorporating anti-NMDA, anti-AMPA 1/2 , anti-GABAb, anti-DPPX, anti-LGI1, anti-CASPR2 Antibodies | Serum Gel Tube | 4.9mls | Indirect Immunoflourescence | Negative | 8 days | Upon request | Paired Serum/CSF samples preferred, particularly during initial workup. Plasma can be accepted following discussion with Lab/Clinical staff | AIE | Discuss with Clinical Team |
| Autoimmune Encephalitis Screen CSF (AIECSF) incorporating anti-NMDA, anti-AMPA 1/2 , anti-GABAb, anti-DPPX, anti-LGI1, anti-CASPR2 Antibodies | CSF |  | Indirect Immunoflourescence | Negative | 8 days | Upon request | Paired Serum/CSF samples preferred, particularly during initial workup. | AIECSF | Discuss with Clinical Team |
| C1 Esterase Inhibitor (C1INH) | Serum Gel Tube | 4.9mls | Turbidimetry | 0.21-0.38 g/L | 4-6 weeks |  |  | C1INH | Once off if normal. As required if low |
| C3 | Serum Gel Tube | 4.9mls | Immunoturbidimetry | 0.9-1.8 g/L | 1-5 days | On request |  | C3 | As Requested |
| C4 | Serum Gel Tube | 4.9mls | Immunoturbidimetry | 0.1-0.4 g/L | 1-5 days | On request |  | C4 | As Requested |
| CTD Screen | Serum Gel Tube | 4.9mls | EliA (IMMUNOCAP) | Negative | 2-5 days |  |  | CTDSCRN | No more than 3 monthly |
| Direct Immunofluorescence (DIF) on Skin Biopsies | Fresh skin biopsy, transported on damp gauze to the laboratory |  | Direct Immunofluorescence |  | 4 weeks |  | Unless special arrangements have been agreed specimen MUST reach the immunology laboratory by 4pm |  |  |
| IgG Subclasses | Serum Gel Tube | 4.9mls | Turbidimetry | IgG 7 - 16 g/L  IgG1 3.824 - 9.286 g/L  IgG2 2.418 - 7.003 g/L  IgG3 0.218 - 1.761 g/L  Note: These are adult specific reference ranges | 8 weeks |  |  | IGGSub | Annually |
| Tryptase | Serum Gel Tube | 4.9mls | FEIA (IMMUNOCAP) | 2-14 μg/L (Anti-mortem specimens only) | 1 month |  |  | TRYPTASE | As requested/discussed |
| Myositis Screen /Panel | Serum Gel Tube | 4.9mls | Immunoblot, correlated with ANA apperance | Negative | 4-6 weeks |  |  | MYOSITIS | Once off |
| Immunology Consult | Serum Gel Tube | 4.9mls | Consultant, SPR or Chief Medical Scientist will select appropriate tests | As appropriate | As per assay |  | Full clinical details and contact bleep number required | IMMCON |  |
| Rheumatoid Factor | Serum Gel Tube | 4.9mls | Immunoturbidimetry | <14 IU/mL | 3-6 days |  |  | RF | >3 Months |
| Specific IgE | Serum Gel Tube | 4.9mls | FEIA (IMMUNOCAP) | <0.35 Units Class 0 Negative  0.35-0.7 Class 1 Weakly Positive  0.7-3.5 Class 2 Positive  3.5-17.5 Class 3 Positive  17.5-52.5 Class 4 Strongly positive  52.5-100 Class 5 Strongly positive  >100 Class 6 Strongly positive | 15 days  21 days for sIgE to Drugs |  |  | See section 1.1.7.1 on page 19 | 1 year for same allergens |
| Specific IgGs  sIgG Aspergillus  sIgG M. Faeni  sIgG Budgie  sIgG Pigeon | Serum Gel Tube | 4.9mls | FEIA (IMMUNOCAP) | <40 mgA/l  <22 mgA/l  <30 mgA/l  <38 mgA/l | 30 days |  |  |  | >6 months |
| Total IgE | Serum Gel Tube | 4.9mls | FEIA (IMMUNOCAP) | Range is age related.  Adult reference range 0-100 kU/L | 15 days |  |  | TIGE | 1 year |

Any of these guidelines may be overruled in a particular clinical situation, if the case is discussed with staff in the immunology laboratory and/or the Consultant Immunologist. If you are uncertain of how best to investigate the patient, you are welcome to contact the Chief Medical Scientist, the Specialist Registrar or Prof. Keogan/Dr Khalib/Dr Cox, Consultant Immunologists to discuss the individual case.

#### Current available Specific IgE (sIgE) Allergens

|  |  |  |  |
| --- | --- | --- | --- |
| **Allergen** | **Code** | **Allergen** | **Code** |
| Asthma Panel | ASTHMA | Grape | f259 |
| CF-ABPA Panel | Careset | Grass Pollen Mix | gx1 |
| Acarus siro (Flour mite) | d70 | Hake | f307 |
| Almond | f20 | Hazel nut | f17 |
| Alternaria alternata | m6 | Hazel nut components | CORA9A14 |
| Amoxicilloyl | c6 | Honey bee | i1 |
| Ampicilloyl | c5 | Horse dander | e3 |
| Animal Panel | ANIMAL | House dust mite (d1) | d1 |
| Apple | f49 | House dust mite (D. Farinae) | d2 |
| Aspergillus fumigatus | m3 | Kiwi | f84 |
| Banana | f92 | Latex | k82 |
| Barley | f6 | Lentil | f235 |
| Blue mussel | f37 | Lobster | f80 |
| Brazil nut | f18 | Macadamia nut | f345 |
| Cagebird Feather Mix | ex72 | Mackerel | f206 |
| Candida albicans | m5 | Maize, Corn | f8 |
| Cashew nut | f202 | Milk | f2 |
| Cat dander | e1 | Morphine | c260 |
| Cefaclor | c7 | Mushroom | f212 |
| Chick pea | f309 | nCor a 9, Hazel nut | f440 |
| Chicken | f83 | Nut Mix | fx1 |
| Chilipepper | f279 | Oat | f7 |
| Chlorhexidine | c8 | Orange | f33 |
| Citrus Fruit Mix | fx29 | Oyster | f290 |
| Cladosporium herbarum | m2 | Pea | f12 |
| Coconut | f36 | Peach | f95 |
| Cod | f3 | Peanut | f13 |
| Common silver birch | t3 | Peanut Panel | PEANUT |
| Common wasp (Yellow jacket) | i3 | Pecan nut | f201 |
| Crab | f23 | Penicillin Panel | PENICILLIN |
| Dog dander | e5 | P. chrysogenum (notatum) | m1 |
| Egg | f245 | Penicilloyl G | c1 |
| Egg white | f1 | Penicilloyl V | c2 |
| Fish Mix | fx2 | Pine nut, pignoles | f253 |
| Fruit Mix | fx21 | Pistachio | f203 |
| Pollen Panel | POLLEN | Salmon | f41 |
| Pork | f26 | Sesame seed | f10 |
| Potato | f35 | Shellfish Panel | SHELLFISH |
| rAra h 2 Peanut | f423 | Shrimp | f24 |
| rAra h 8 PR-10, Peanut | f352 | Soybean | f14 |
| rAra h 9 LTP, Peanut | f427 | Spice Mix | fx71 |
| rAsp f 2 Aspergillus | m219 | Strawberry | f44 |
| **Allergen** | **Code** | **Allergen** | **Code** |
| rBet v 1 PR-10, Birch | t215 | Suxamethonium | c202 |
| rCor a 1 PR-10, Hazel nut | f428 | Timothy grass | g6 |
| rCor a 14, Hazel nut | f439 | Tomato | f25 |
| rCor a 8 LTP, Hazel nut | f425 | Tree Pollen Mix | tx8 |
| Rhinitis Panel | RHINITIS | Tuna | f40 |
| Rice | f9 | Walnut | f256 |
| rMal d 1 PR-10, Apple | f434 | Wheat | f4 |
| rMal d 3 LTP, Apple | f435 | Yeast | f45 |
| Rocuronium | U254 | Total IgE | IgE |
| rPru p 3 LTP, Peach | f420 | Tryptase (Random) | TRYPTRAND |
| rPru p 4 Profilin, Peach | f421 | Tryptase <1 HR | TRYPT1HR |
| rTri a 19 Omega-5 Gliadin, Wheat | f416 | Tryptase 24 HR | TRYPT24HR |
| Rye | f5 | Tryptase 3 HR | TRYPT3HR |

\*Details of Panel & Mix contents are given below

|  |  |
| --- | --- |
| **ALLERGENS** | **Panel & Mix Details** |
| ANIMAL PANEL | Cat, Dog |
| ASTHMA PANEL | HDM, Aspergillus fumigatus, Cat |
| CAGEBIRD FEATHER MIX | Budgerigar, Canary bird, Parakeet, Parrot & Finch feathers |
| CITRUS FRUIT MIX | Orange, Lemon, Grapefruit, Mandarin |
| FISH MIX\*\* | Fish, Shrimp, Blue mussel, Tuna, Salmon |
| FRUIT MIX | Kiwi, Melon, Banana, Peach, Pineapple |
| GRASS POLLEN MIX | Cock's-foot or orchard grass, Meadow fescue, Ryegrass, Timothy-grass, Common Meadow-grass (Dactylis glomerata, Festuca elatior, Lolium perenne, Phleum pratense, Poa pratensis) |
| Hazel Nut Components | nCor a 9 & rCor a 14, Hazel nut |
| NUT MIX\*\* | Peanut, Hazel nut, Brazil nut, Almond, Coconut |
| PEANUT PANEL | Peanut & Arah2 |
| PENICILLIN PANEL | Penicillin G, Penicillin V, Amoxicillin, Ampicillin, Cefaclor |
| POLLEN PANEL | Trees, Grass |
| RHINITIS PANEL | HDM, Cat, Trees, Grass |
| SHELLFISH PANEL | Lobster, Crab, Shrimp, Mussel |
| SPICE MIX | Caraway, Mace, Cardamom, Clove; |
| TREE MIX | Box-elder, Common silver birch, Hazel, Oak & Maple leaf sycamore (Acer negundo, Betula verrucosa, Corylus avellana, Quercus alba, Platanus acerifolia) |

\*\*For nut mix & fish mix, if we get a positive result, we would automatically do the individual allergens included in the relevant mix.

Please request **SIGEREFERRAL,** and state name of allergen, for anything not on the above list. If the history indicates an unusual allergen, the appropriate test will be sent to the UK.

#### Test Profiles

To make test ordering more efficient we have set up a range of disease specific test profiles, for investigations of common potentially immunological disorders. Where screening tests are included in test batteries, positive screening tests lead to reflex ordering of appropriate follow-up tests, as detailed in Section 8.

| *Profile* | *Tests Included* | *Indication* | *Comment* |
| --- | --- | --- | --- |
| Acute Renal Failure Screen | CTD  Anti-MPO and PR3 Antibodies  GBM  C3/C4  ASOT | Acute or acute –on-chronic renal failure. | Please discuss all pulmonary-renal syndrome or ? rapidly progressive GN, as urgent service available. |
| Inflammatory Arthritis Antibodies | RF  CCP  CTD | Isolated inflammatory arthritis, in the absence of systemic features. | ANCA should be added if urinalysis is abnormal. NB: 2 separate samples are required for INFL ABS. |
| Liver Disease Associated Autoantibodies | ANA  Anti-Smooth Muscle  Anti-Mitochondrial  Anti-LKM | Suspected chronic liver disease. | If MITO pos, M2 subtyping will be performed, on the first occasion only. |
| Vasculitis Screen | CTD  Anti-MPO and PR3 Antibodies RF  C3/C4 | Suspected vasculitis or connective tissue disease. | This battery is intended for diagnosis only.  More selective tests should be used for monitoring once diagnosis established. |
| Asthma sIgE | sIgE - House dust mite  sIgE – Aspergillus  sIgE – Cat | Allergic asthma. |  |
| Rhinitis sIgE | sIgE – House dust mite  sIgE – Cat  sIgE – Trees  sIgE - Grass | Perennial Rhinitis, thought to be allergic. |  |
| Shellfish sIgE | sIgE – Lobster  sIgE - Crab  sIgE - Shrimp  sIgE - Mussel | Suspected allergy to shellfish. | Negative result does not rule out shellfish allergy. If this is suspected clinically referral to a Clinical Immunologist is advised. |
| Pollen sIgE | sIgE – Mixed gras  sIgE–Mixed trees |  |  |
| Coeliac Screen | Anti-tTG  Anti-EmA (if tTG is Equivocal or Positive) | Suspected Coeliac Disease.  Malabsorption.  Anaemia.  Gastrointestinal symptoms. |  |
| Autoimmune Encephalitis Panel AIEPANEL | Anti-NMDA, Anti-AMPA 1/2, Anti-DPPX, Anti-GABAb, Anti-LGI1, Anti-CASPR2 Antibodies | Suspected Autoimmune Encephalitis, Myotonia, seizures, Neuropsychiatric symptoms. | Paired Serum/CSF samples preferred, (particularly in the initial diagnostic phase), due to the known incidence of false negatives on serum documented in the literature. |

#### Immunological Tests performed in other Laboratories in Beaumont Hospital

|  |  |  |  |
| --- | --- | --- | --- |
| **Test** | **Mnemonic** | **Specimen** | **Contact** |
| Immunoglobulins | IGGS | Serum Gel | Proteins (809) 2305 |
| C Reactive Protein | CRP | Heparin | Clin Chem (809) 2668 |
| Protein electrophoresis | SPE | Serum Gel | Proteins (809) 2305 |
| Urine electrophoresis (Bence Jones Protein) | UPE | 24 hour urine collection | Proteins (809) 2305 |
| 2 Microglobulin | B2M | Serum Gel | Proteins (809) 2305 |
| Cryoglobulins | CRYOS | Special instructions on computer  8 hour Fasting Samples Required | Proteins (809) 2305 |
| Lymphocyte subsets | LY-SUB | EDTA | Haematology (809)2763 |