Laboratory Services - Tests A - I

The Clinical Immunology Service (CIS), in the School of Immunity and Infection, provides a comprehensive range of laboratory services.

In particular, the CIS is a major testing centre for multiple myeloma, leukaemia/lymphoma, immunodeficiency, autoimmunity, neuroimmunology and rheumatic diseases. As a general guide, most of our immunochemistry, indirect immunofluorescence, electrophoresis, cell markers and some neuroimmunology assays are carried out on a daily basis. A summary of immunological analytes associated with various diseases are described in the alphabetical list, below, together with the most common type of disorder likely to be seen with them.

Further detailed information can be obtained by downloading our **handbook (/Documents/college-mds/facilities/cis/eHandbook2011incTATs.pdf)** . However we are happy to hear from you if you are unable to locate a test or would like further advice.

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A - A

Acetylcholine receptor ab's

Active myasthenia Gravis
Ocular myasthenia (50%)

Adrenal cortical ab's

Addison's disease (30%)
Autoimmune thyroiditis (30%)
Insulin dependent diabetes (30%)
Primary ovarian failure (40%)

Adverse Anaesthetic reactions

Allergic disorders
Mast cell syndromes

Anti-nuclear abs

ANA profile can be used to assign the following diorders:

Systemic lupus erythematosus (SLE)
Mixed connective tissue disease (MCTD)
Scleroderma, Sjögren's syndrome (SS)
Rheumatoid arthritis (RA) and other rarer CTDs.

ANA pattern association

- Centromere antibodies - CREST syndrome
- Nucleolar - scleroderma
- Proliferating cell nuclear antigen antibodies - SLE
- Rim or homogeneous - SLE
- Speckled pattern - MCTD, Sjögrens, SLE and Polymyositis

Anti-C1q autoantibodies

Diagnosis of hypocomplementaemic urticarial vasculitis
SLE (~50%)
Lupus nephritis (95%)

Aquaporin 4 antibodies

See NMO antibodies

Aspergillus - specific IgG abs

Also see fungal antigens

Avian antigens - specific IgG abs

Specific IgG antibodies directed against budgerigar

B - B

Basal ganglia antibodies (BGA)

Sydenham's chorea, tic and an encephalitis lethargica-like syndrome.
(Movement disorders associated with basal ganglia)

Bence Jones Protein

See urinary free light chains

B_2 microglobulin (B_2M)

Monitoring lymphocyte activation (myeloma and HIV related diseases). Also elevated in renal dysfunction.

B_2GP1 antibodies

Specific for APS and related coagulation

C - C

Caeruloplasmin

Wilson's disease
Nephrotic syndrome
Menkes' kinky hair syndrome

Also raised in chronic active liver disease, pregnancy, leukaemia, post trauma, infectious diseases and after myocardial infarction.

Cardiac abs
Dressler's syndrome
Myocardial infarction
Cardiomyopathies

Cardiolipin/Phospholipid abs

SLE
Recurrent miscarriages and arterial and venous thrombosis

C-Reactive Protein (CRP)

Low CRP: Viral infection/AI disease
Medium CRP: Bacterial infection
High CRP: Major bacterial infection:

CSF pigments (scan) - Xanthochromia

Subarachnoid haemorrhage in CAT scan negative patients.

CSF Tau protein (asialo-transferrin)

Cerebrospinal rhinorrhoea (nasal, abscess, ear etc)

Complement C3 and C4

Monitoring SLE & immune complex disease.

C1q complement component

SLE

C1 (esterase) Inhibitor

Hereditary & acquired angioedema

C3d complement component

Activation of the complement cascade

C3 Nephritic factor

Associated with type II MPGN and also with partial lipodystrophy.

Complement function Classical pathway (CH50)

Assessment of the integrity of the classical pathway of complement

Complement function Alternative pathway

Assessment of the integrity of the alternative pathway of complement and the terminal sequence (C3-C9) components.

Cryoglobulins

Waldenströms macroglobulinaemia, myeloma or lymphoma

Cyclic citrullinated peptide (CCP) antibodies

Rheumatoid arthritis - may be detected years before onset of clinical RA

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D - F

dsDNA abs (Crithidia IIF)

SLE & also useful in monitoring the activity of the disease.

Endomysial abs [Also see Transglutaminase]

Untreated coeliac disease

Extractable Nuclear Antigen (ENA) antibodies

Sm - SLE
RNP - MCTD (>95%)
SSA [Ro] - SLE, cutaneous lupus, neonatal lupus and congenital heart block
SSB [La] - SLE, Sjögrens syndrome
Jo1 - Polymyositis (30%)
Scl70 - Systemic sclerosis

Functional antibodies - assess immune response to vaccines

Recurrent infections

Fungal antigens – Specific IgG

IgG antibodies to candida albicans, aspergillus fumigatus and micropolyspora faeni.

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G - G

Ganglioside antibodies are associated with peripheral neuropathy and they cross react with other ganglioside due to having similar epitopes (shown in brackets).		
GM1 (GD1b)	IgG	Guillain-Barré syndrome (acute motor axonal neuropathy)
GM1	IgM	Multifocal motor neuropathy
GM2	IgM	Chronic inflammatory demyelinating polyneuropathy
GD1a (GM1, GM2, GT1a, GT1b)	IgM	Acute motor neuropathy
GD1b (GT1b, GQ1b)	IgG	Acute sensory neuropathy
	IgM	Chronic ataxic sensory neuropathy
GQ1b	IgG	Miller-Fisher syndrome

Gastric parietal cell abs

Atrophic gastritis and pernicious anaemia (90%)
Gastritis without anaemia (12%)
Autoimmune thyroid disease (30%)
Addison's disease (25%) and iron deficiency anaemia (20%)

Intrinsic factor Abs should be carried out in conjunction with GPC Abs

Gliadin DP abs

Clinically useful in IgA deficiency for:

Inflammatory bowel and liver disease
Underlying coeliac disease

IgA anti-tissue transglutaminase (tTG) antibodies are more specific for coeliac disease .

Glomerular basement membrane abs

Goodpastures syndrome (75%)

Glutamic acid decarboxylase abs

Stiff Man syndrome (40%)
Insulin dependent diabete metitus

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I - I

IgA antibodies

IgA deficiency
Risk of adverse transfusion reactions

IgG Subclasses

Four types of IgG

- IgG1 (60-70%)
- IgG2 (14-20%)
- IgG3 (4-8%)
- IgG4 (2-6%)

Recurrent infections (**primary** i**mmunodeficiency**)
Liver disease

Immunoglobulin D (IgD)

Myeloma and periodic fever

Immunoglobulin E (IgE)

Atopic diseases
Atopic eczema
Parasitic infestations (especially S Mansoni)

Intrinsic factor abs

Pernicious anaemia (70%)

Isoelectric focusing (CSF oligoclonal bands) IgG

Clinically proven multiple sclerosis (~85-95%)

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