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University Health Board

## IMMUNOLOGY TEST REPERTOIRE

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Immunology Department Open Monday – Friday 08.45 am to 17:15 pm

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<b>Assay</b>	<b>Sample requirement (ml)</b>	<b>Sample handling /Transport</b>	<b>Methodology</b>	<b>Reference range</b>	<b>Turnaround Time (target working days)</b>	<b>EQA</b>	<b>Clinical Utility</b>
ANA	Serum (2ml)	Overnight (Room Temp)	IIF	Negative	5	U.K.NEQAS Sheffield	Suspected CTD/SLE
Centromere	Serum (2ml)	Overnight (Room Temp)	IIF	Negative	5	U.K.NEQAS Sheffield	CREST
dsDNA antibodies	Serum (2ml)	Overnight (Room Temp)	ELISA	<20 IU/ml	5	U.K.NEQAS Sheffield	SLE
Crithidia	Serum (2ml)	Overnight (Room Temp)	IIF	Negative	5	U.K.NEQAS Sheffield	Confirmation of dsDNA antibodies
ENA screen	Serum (2ml)	Overnight (Room Temp)	ELISA	Negative	5	U.K.NEQAS Sheffield	CTD
ENA profile (Ro/La/Sm/RNP/Jo-1/Scl70)	Serum (2ml)	Overnight (Room Temp)	ELISA	Negative	5	U.K.NEQAS Sheffield	CTD
MCV antibodies	Serum (2ml)	Overnight (Room Temp)	ELISA	<20 U/ml	5	U.K.NEQAS Sheffield	Rheumatoid arthritis (alternative to CCP)
ANCA	Serum (2ml)	Overnight (Room Temp)	IIF	Negative	5	U.K.NEQAS Sheffield	Small vessel vasculitis
MPO antibodies	Serum (2ml)	Overnight (Room Temp)	ELISA	Negative	5	U.K.NEQAS Sheffield	ANCA confirmation and monitoring
PR3 antibodies	Serum (2ml)	Overnight (Room Temp)	ELISA	Negative	5	UK NEQAS	ANCA confirmation and monitoring
GBM antibodies	Serum (2ml)	Overnight (Room Temp)	ELISA	<20 U/ml	5	U.K.NEQAS Sheffield	Goodpasture's syndrome
Cardiolipin antibodies (IgG and IgM)	Serum (2ml)	Overnight (Room Temp)	ELISA	IgG <10 U/ml, IgM <7U/ml	5	U.K.NEQAS Sheffield	Anti phospholipid syndrome
Beta 2 Glycoprotein antibodies (IgG and IgM)	Serum (2ml)	Overnight (Room Temp)	ELISA	<5 U/ml	5	U.K.NEQAS Sheffield	Anti phospholipid syndrome

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TTG (IgA)	Serum (2ml)	Overnight (Room Temp)	ELISA	<10 U/ml	5	U.K.NEQAS Sheffield	Coeliac disease
TTG(IgG)	Serum (2ml)	Overnight (Room Temp)	ELISA	<10 U/ml	5	U.K.NEQAS Sheffield	Coeliac disease in IgA deficient patients
Endomysial antibodies (IgA)	Serum (2ml)	Overnight (Room Temp)	IIF	Negative	5	U.K.NEQAS Sheffield	Coeliac disease/ Dermatitis herpetiformis
Liver autoantibodies(GPC/LKM/SMA/AMA)	Serum (2ml)	Overnight (Room Temp)	IIF	Negative	5	U.K.NEQAS Sheffield	Pernicious anaemia/Liver disease/ Autoimmune hepatitis/PBC
Adrenal antibodies	Serum (2ml)	Overnight (Room Temp)	IIF	Negative	5	Sample exchange	Autoimmune Addison's and polyglandular autoimmunity
Pancreatic islet cell antibodies	Serum (2ml)	Overnight (Room Temp)	IIF	Negative	5	UK NEQAS Sheffield	Type 1 diabetes /LADA
Ovarian antibodies	Serum (2ml)	Overnight (Room Temp)	IIF	Negative	5	Sample exchange	Premature ovarian failure/ Polyglandular autoimmunity
Cardiac muscle antibodies	Serum (2ml)	Overnight (Room Temp)	IIF	Negative	5	Sample exchange	Dressler's syndrome/post MI/Cardiomyopathy
Skeletal muscle antibodies	Serum (2ml)	Overnight (Room Temp)	IIF	Negative	5	Sample exchange	Myasthenia gravis
Pemphigus antibodies	Serum (2ml)	Overnight (Room Temp)	IIF	Negative	5	U.K.NEQAS Sheffield	Bullous skin disease
Pemphigoid antibodies	Serum (2ml)	Overnight (Room Temp)	IIF	Negative	5	U.K.NEQAS Sheffield	Bullous skin disease

Assay	Sample requirement (ml)	Sample handling / Transport	Methodology	Reference range	Turnaround Time	EQA	Clinical Utility
CH50	Serum (2ml)	Same day or transport frozen	Haemolytic assay	1000-2000	10	INSTAND International scheme	Complement deficiency
AP50	Serum (2ml)	Same day or transport frozen	Haemolytic assay	80-200	10	INSTAND International scheme	Complement deficiency
C3/C4	Serum (2ml)	Overnight (Room Temp)	Turbidimetry	0.75-1.65/0.14-0.54 g/L	5	UK NEQAS Sheffield	SLE/HAE/ Renal disease/ Vasculitis
C1q	Serum (2ml)	Overnight (Room Temp)	RID	50-250 mg/L	10	INSTAND International scheme Sample exchange	Deficiency/Acquired angioedema/ Immune complex disease
C2	Serum (2ml)	Overnight (Room Temp)	RID	14-25 mg/L	10	No EQA scheme	Deficiency/ Consumption/ Immune complex disease
C5	Serum (2ml)	Overnight (Room Temp)	RID	90-172 mg/L	10	No EQA scheme	Terminal pathway deficiency
C6	Serum (2ml)	Overnight (Room Temp)	RID	45-96 mg/L	10	No EQA scheme	Terminal pathway deficiency
C7	Serum (2ml)	Overnight (Room Temp)	RID	55-85 mg/L	10	No EQA scheme	Terminal pathway deficiency
C8	Serum (2ml)	Overnight (Room Temp)	RID	40-80 mg/L	10	No EQA scheme	Terminal pathway deficiency
C9	Serum (2ml)	Overnight (Room Temp)	RID	50-250 mg/L	10	No EQA scheme	Terminal pathway deficiency
C1 esterase inhibitor (Immunochemical)	Serum (2ml)	Overnight (Room Temp)	Turbidimetry	0.21-0.38g/l	10	UK NEQAS Sheffield	HAE & acquired angioedema
C1 esterase inhibitor (Functional)	Serum (2ml)	Same day or transport frozen	ELISA	>68% normal	10	UK NEQAS Sheffield	Type 2 HAE & acquired angioedema
Factor H	Serum (2ml)	Overnight (Room Temp)	RID	345-590 mg/L	10	Sample exchange	aHUS/DDD
Factor I	Serum (2ml)	Overnight (Room Temp)	RID	38-58 mg/L	10	Sample exchange	Deficiency

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Factor B	Serum (2ml)	Overnight (Room Temp)	RID	295-400 mg/L	10	No EQA Scheme or alternative	Deficiency
Anti-C1q antibodies	Serum (2ml)	Overnight (Room Temp)	ELISA	<10 U/ml	10	INSTAND International External Quality Assessment	SLE with renal involvement
TCC (C5-9 complex)	EDTA Plasma (2ml)	Same day or transport frozen	ELISA	<80 ng/ml	10	INSTAND International External Quality Assessment	Complement activation
MBL	Serum (2ml)	Overnight (Room Temp)	ELISA	<50ng/ml = deficiency, 50-100 ng/ml = equivocal, >100ng/ml = normal	10	No EQA scheme available	Recurrent infection especially in childhood
Anti-C1 esterase inhibitor antibodies (IgG, IgA and IgM)	Serum (2ml)	Overnight (Room Temp)	ELISA	Detects high titre anti-C1INH antibodies (positive or negative)	30	INSTAND International External Quality Assessment	Acquired Angioedema (AAE)

Assay	Sample requirement (ml)	Sample handling / Transport	Methodology	Reference range	Turnaround Time	EQA	Clinical Utility
Lymphocyte phenotypes	EDTA Whole blood (Adult 4ml, paediatric 1ml)	Same day/Overnight (Room temp)	Flowcytometry	Age related	2	NEQAS Leukocyte Immunophenotyping	Primary and secondary immunodeficiency
B cell memory phenotyping	EDTA Whole blood (5ml)	Same day/Overnight (Room temp)	Flowcytometry	See report	2	Sample exchange	CVID
Naive T cells	EDTA Whole blood (5ml)	Same day/Overnight (Room temp)	Flowcytometry	Age related	2	No EQA Scheme or alternative	Primary immunodeficiency/ monitoring T cell reconstitution
TCR alpha beta double negative T cells	EDTA Whole blood (5ml)	Same day/Overnight (Room temp)	Flowcytometry	See report	2	No EQA Scheme or alternative	ALPS
Lymphocyte proliferation	Heparin Whole blood (5ml)	Same day (Room temp) <i>Please contact the laboratory to prearrange this test. Please supply a healthy control sample.</i>	Flowcytometry	See report	4	No EQA Scheme or alternative	Immunodeficiency
Neutrophil function (DHR)	Heparin Whole blood (5ml)	Same day (Room temp) <i>Please contact the laboratory to prearrange this test. Please supply a healthy control sample.</i>	Flowcytometry	Positive=Normal	2	No EQA Scheme or alternative	CGD
MHC Class 1 and 2 expression	EDTA Whole blood (5ml)	Same day/Overnight (Room temp)	Flowcytometry	See report	2	No EQA Scheme or alternative	Bare lymphocyte syndrome
Adhesion markers (CD11a/11b/11c/18)	EDTA Whole blood (5ml)	Same day/Overnight (Room temp)	Flowcytometry	See report	2	No EQA Scheme or alternative	Suspected adhesion molecule deficiency

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TCR V beta spectrotyping	EDTA Whole blood (5ml)	Same day/Overnight (Room temp)	Flowcytometry	See report	2	No EQA Scheme or alternative	Primary immunodeficiency /monitoring T cell reconstitution
CD40 expression on B lymphocytes	EDTA Whole blood (5ml)	Same day/Overnight (Room temp)	Flowcytometry	See report	2	No EQA Scheme or alternative	CD40 deficiency
BTK on monocytes	EDTA Whole blood (5ml)	Same day/Overnight (Room temp)	Flowcytometry	See report	2	No EQA Scheme or alternative	XLA
L-selectin (CD62 ligand) shedding	Heparin Whole blood (5ml)	Room temp. within 3 hours Please contact the laboratory to arrange this test. Please supply a healthy control sample.	Flowcytometry	See report	2	No EQA Scheme or alternative	Suspected TLR signalling defect
CD40Ligand expression (CD4+ T cells)	Heparin Whole blood (5ml)	Same day (Room temp)	Flowcytometry	See report	3	No EQA Scheme or alternative	XL-HIGM syndrome (CD40L deficiency)
Total IgE	Serum	Overnight (Room Temp)	FEIA	Age related	5	U.K.NEQAS Sheffield	Atopy/Allergy/Hyper IgE syndrome
Specific IgE (Entire Phadia catalogue available see <a href="http://www.phadia.com/en-GB/Allergens/ImmunoCAP-Allergens/">http://www.phadia.com/en-GB/Allergens/ImmunoCAP-Allergens/</a> )	Serum	Overnight (Room Temp)	FEIA	See report	5	U.K.NEQAS Sheffield	Type 1 Hyper-sensitivity/ allergy
ISAC Allergy Microarray See <a href="http://intapp3.phadia.com/en-GB/Laboratories/Allergy/Products/ImmunoCAP-ISAC/">http://intapp3.phadia.com/en-GB/Laboratories/Allergy/Products/ImmunoCAP-ISAC/</a>	Serum	Overnight (Room Temp)	Microarray	See report	30	UK NEQAS	Complex allergic disease/ idiopathic anaphylaxis
Tryptase	Serum	Same day or frozen. For investigation of anaphylaxis - 3 samples at times 0, 2 and 24 hrs	FEIA (RAST)	See report	5	U.K.NEQAS Sheffield	Anaphylaxis/ Mastocytosis
Immunoglobulins (IgG/A/M)	Serum (2ml)	Overnight (Room Temp)	Turbidimetry	Age related	5	U.K.NEQAS Birmingham	Immunodeficiency & lymphoproliferative disorder

Assay	Sample requirement (ml)	Sample handling / Transport	Methodology	Reference range	Turnaround Time	EQA	Clinical Utility
IgD	Serum (2ml)	Overnight (Room Temp)	RID		5	No EQA scheme available	Hyper IgD/Fever Syndromes
Electrophoresis	Serum (2ml)	Overnight (Room Temp)	CZE	Normal	5	U.K.NEQAS Sheffield	Myeloma/ MGUS
Immunofixation	Serum (2ml)	Overnight (Room Temp)	Immunofixation	Negative	5	U.K.NEQAS Birmingham, U.K.NEQAS Sheffield	Myeloma /MGUS
Bence Jones protein	Urine (20ml)	Overnight (Room Temp)	Urine EPH	Negative	5	U.K.NEQAS Sheffield	Myeloma/ MGUS
Oligoclonal bands	Paired Serum & CSF (2ml each)	Overnight (Room Temp)	Isoelectric focusing	Negative	5	U.K.NEQAS Sheffield	Multiple sclerosis
IgG subclasses	Serum (2ml)	Overnight (Room Temp)	Turbidimetry	Age related	5	U.K.NEQAS Sheffield	Immunodeficiency
Alpha 1 antitrypsin	Serum (2ml)	Overnight (Room Temp)	Turbidimetry	Age related	5	U.K.NEQAS Birmingham	Emphysema/ cirrhosis/ prolonged neo-natal jaundice/Family screening
Beta 2 microglobulin	Serum (2ml)	Overnight (Room Temp)	Turbidimetry	1.2-2.4 mg/L	5	U.K.NEQAS Sheffield	Monitoring myeloma and renal disease
Free light chains	Serum (2ml)	Overnight (Room Temp)	Turbidimetry	See report	5	U.K.NEQAS Sheffield	Monitoring plasma cell dyscrasia
Antibodies to Hib	Serum (2ml)	Overnight (Room Temp)	ELISA	See report	10	U.K.NEQAS Sheffield	Suspected immunodeficiency/ response to vaccination
Antibodies to Tetanus	Serum (2ml)	Overnight (Room Temp)	ELISA	See report	10	U.K.NEQAS Sheffield	Suspected immunodeficiency/ response to vaccination
Antibodies to Pneumococcus	Serum (2ml)	Overnight (Room Temp)	ELISA	See report	10	U.K.NEQAS Sheffield	Suspected immunodeficiency/ response to vaccination

**Molecular Immunology - Please contact the laboratory for further details**  
**Please contact the department for current prices**