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Current copies of this manual are held on external and internal NICL webpages.
Any updates must be promptly uploaded onto websites.
STAFF STRUCTURE

Neuroimmunology & CSF Laboratory

Clinical Lead
Dr MPT Lunn MBBS PhD FRCP
Consultant Neurologist

Consultant Neurologist
Dr MS Zandi MA MB BChir PhD MRCP
Honorary Consultant Neurologist

Laboratory Manager
Dr MS Hart BSc MSc PhD
Principal Clinical Scientist

Administration
Ms S Fawcett BA (Hons)
Office Co-ordinator
Dr V Gibbons BSc PhD
Queen Square Division Quality Manager

Analytical
Dr MS Hart BSc MSc PhD
Principal Clinical Scientist
Dr AJ Church BSc PhD
Senior Biomedical Scientist
Dr MD Chapman BSc MSc PhD
Senior Biomedical Scientist
Ms D Grant BSc MA MSc
Biomedical Scientist
Ms NJ Lakdawala BSc MSc
Biomedical Scientist
Mr MKL Chou BSc
Biomedical Scientist
Ms R Monero BSc MSc
Medical Technical Officer
Mr M Hamilton BSc
Medical Laboratory Assistant
GENERAL INFORMATION

Background

The Neuroimmunology and CSF Laboratory at University College London Hospitals is a UKAS accredited medical laboratory No.:8045. Activities currently accredited are described on our UKAS schedule of accreditation found on the UKAS website here. It is located on the 9th Floor of the Institute of Neurology (IoN), next to the National Hospital for Neurology & Neurosurgery (NHNN) in Queen Square. The laboratory is part of the Queen Square Division within the Trust.

The laboratory provides an analytical service for the routine examination of cerebrospinal fluid (CSF) for the NHNN that includes triaging material between other laboratories within the Pathology Directorate. It forms a single point of contact for all work carried out on CSF within NHNN.

In addition, the laboratory provides specialist analytical services and associated clinical advice for referring laboratories throughout the United Kingdom and abroad with on-going research programmes supplementing and continuously enhancing the service provision. The NICL is dedicated to the analysis of CSF to aid in the diagnosis of neurological diseases such as inflammatory demyelinating disorders and dementia and also provides a specialist autoantibody service for immunological disorders affecting the central and peripheral nervous system.

Access to services

The Laboratory is open between the hours 9.00 – 17.00 Monday to Friday.

NOTE: The Laboratory does NOT operate an out-of-hours service

Please arrange in advance if a sample is to arrive in the lab after 4.30pm (020 3448 3814)

Internal (NHNN) requests

After 5pm CSF samples from NHNN are processed in the Whitfield St Labs (UCLH). The requesting Doctor must: bleep the on-call Microbiology BMS in advance and arrange sample transport to Whitfield St.

- At 5.00pm there is a specimen pick-up at the NHNN basement Specimen Reception (Ext: 83198)
- From 7.00pm to midnight there is an hourly specimen pick-up from the NHNN front desk
- After midnight specimen transport is by the Medical Courier (0207 307 9383), a budget code will be needed to organise this.
POSTAL ADDRESS & CONTACTS

Address

Neuroimmunology & CSF Laboratory
Institute of Neurology (NHNN) Box 76
Queen Square
London WC1N 3BG

Telephone

<table>
<thead>
<tr>
<th>Number</th>
<th>Name</th>
<th>Email</th>
<th>Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>020 3448 3814</td>
<td>Main laboratory</td>
<td>(General analytical and result enquiries)</td>
<td></td>
</tr>
<tr>
<td>020 3448 3812</td>
<td>Ms Stacey Fawcett</td>
<td><a href="mailto:stacey.fawcett@uclh.nhs.uk">stacey.fawcett@uclh.nhs.uk</a></td>
<td>(Office Co ordinator)</td>
</tr>
<tr>
<td>020 3448 4198</td>
<td>Dr Melanie Hart</td>
<td><a href="mailto:melanie.hart@uclh.nhs.uk">melanie.hart@uclh.nhs.uk</a></td>
<td>(CDG, NAbs)</td>
</tr>
<tr>
<td>020 3448 3542</td>
<td>Dr Miles Chapman</td>
<td><a href="mailto:miles.chapman@uclh.nhs.uk">miles.chapman@uclh.nhs.uk</a></td>
<td>(CSF biomarkers)</td>
</tr>
<tr>
<td>020 3448 3842</td>
<td>Dr Andrew Church</td>
<td><a href="mailto:andrew.church@uclh.nhs.uk">andrew.church@uclh.nhs.uk</a></td>
<td>(Autoantibodies)</td>
</tr>
</tbody>
</table>

Fax (safe haven) 020 3448 3797

SAMPLE HANDLING AND TRANSPORTATION

With the exception of samples for CSF biomarkers for neurodegeneration (see below), samples may be transported to the laboratory under normal postal regulations for the transport of pathological specimens (UN3373). We do not offer an out-of-hours service, therefore please post samples at the beginning of the week to avoid delays at weekends and bank holidays.

Special requirements for sample collection and handling

**Serum:** To help avoid haemolysis during transit all serum samples from external labs should be centrifuged and separated before sending.

**Oligoclonal bands:** A paired serum sample is essential for interpretation, preferably taken on same day (or within 14 days of the CSF). The CSF and serum should be sent together.

**CSF biomarkers for neurodegeneration:** CSF must be collected in polypropylene tubes (NOT polystyrene) then centrifuged, separated and the supernatant frozen in aliquots in polypropylene secondary tubes (one for each test required) preferably within one hour of the LP. The CSF must remain frozen and be transported to the NICL on dry ice. See Appendix 1. If in doubt please contact the laboratory miles.chapman@uclh.nhs.uk for advice before taking sample.

**Xanthochromia:** If SAH is suspected, the CSF sample should be taken a minimum of 12 hours after the suspected bleed. Supernatant from centrifuged CSF should be protected from light during storage and transport. *(Annals of Clinical Biochem 2008; 45: 238-244).* To aid interpretation please note any deviations from protocol on the request form.

**High risk samples:** All high risk (e.g. HIV, Hep B, Hep C, CJD) specimens and the accompanying form must be clearly labelled and marked with biohazard stickers.
PATIENT SAMPLE AND REQUEST FORM IDENTIFICATION CRITERIA

It is the responsibility of the requester to ensure that samples are correctly labelled and that request forms are completed to the agreed standard.

The following outlines the information required by the Laboratory

Sample Tube

Essential
- Patient’s full name or proper coded identifier
- Patient’s date of birth
- Hospital (or NHS) number
- Date of sampling

Request Form

Essential
- Patient’s full name or proper coded identifier
- Patient’s date of birth
- Patient’s hospital (or NHS) number
- Date of sampling
- Return address (hospital & department) for the report
- Tel. No. (& Bleep) for urgent results
- Tests required
- Sample type
- Relevant clinical details (to aid interpretation of results)

Desirable
- Patient’s sex
- Name of the consulting physician
- Medication & dosage if appropriate e.g. neutralising antibodies to beta-interferon

Patient’s date of birth - Essential as the interpretation of some of tests is critically age-dependent.

Name of the consulting physician – Required for billing in some cases.

All details on both sample and request form must be completely legible. Specimens that are equivocally or illegibly labelled will not normally be accepted for analysis unless we receive written agreement from the Consulting Physician or Head of Department of the referral laboratory to accept full responsibility.
NICL TEST LIST

*NB: Asterisk denotes sample type that is currently not UKAS accredited for this assay.

<table>
<thead>
<tr>
<th>Routine CSF Analysis</th>
<th>Sample type: CSF &amp; Serum</th>
<th>TaT: STAT</th>
<th>NHS Price: £59</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSF Lactate dehydrogenase</td>
<td>Sample type: CSF*</td>
<td>TaT:</td>
<td>NHS Price: £8</td>
</tr>
<tr>
<td>Test for: Suspected CNS tumours, bacterial and viral meningitis and encephalitis. Specimen requirements: CSF in plain polypropylene tube Minimum sample volume: 500µL in each tube. Special precautions/Transport: Samples should be unhaemolysed &amp; transported by first class post from outside NHNN Methodology: Enzymology EQA: no scheme</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oligoclonal Bands (IgG)</td>
<td>Sample type: CSF &amp; Serum</td>
<td>TaT: 7 working days</td>
<td>NHS Price: £45</td>
</tr>
<tr>
<td>Test for: Suspected CNS inflammation. Particularly demyelinating syndromes such as multiple sclerosis. Alternative name: OCB. Specimen requirements: Both CSF and a paired serum are essential for interpretation of results. CSF and blood samples will only be tested if they are taken within 14 days of each other. Where possible send in 2 mL tubes. Minimum sample volume: 250µL in each tube. Special precautions/Transport: Samples should be unhaemolysed &amp; transported by first class post from outside NHNN Methodology: Isoelectric focusing. EQA: UK NEQAS CSF IgG Oligoclonal Bands</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Xanthochromia &amp; Ferritin</td>
<td>Sample type: CSF</td>
<td>TaT: STAT</td>
<td>NHS Price: £58</td>
</tr>
<tr>
<td>Test for: Intracranial haemorrhage such as subarachnoid haemorrhage. Alternative name: Haem pigments. Specimen requirements: CSF in plain polypropylene tube. Minimum sample volume: 200µL. Special precautions/Transport: Samples should be unhaemolysed &amp; transported by first class post from outside NHNN. CSF must be protected from light to avoid bilirubin degradation (Annals of Clinical Biochem 2008; 45: 238-244) Methodology: Spectrophotometry and nephelometry for CSF ferritin. EQA: UK NEQAS CSF Haem Pigments</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Tau-Protein &amp; Amyloid Beta1-42</td>
<td>Sample type: CSF</td>
<td>TaT: 20 working days</td>
<td>NHS Price: £132</td>
</tr>
<tr>
<td>Test for: Investigation of dementias including Alzheimer’s Disease. Alternative name: Tau. Aβ1-42. CSF biomarkers for neurodegeneration/ for the investigation of cognitive impairment. Note: Elevation of total tau is seen in several neurodegenerative conditions (including Alzheimer’s disease) but also in stroke and encephalitides. Very high total tau levels are seen in diseases with rapid ongoing neuronal degeneration/destruction. Reduction in CSF Aβ1-42 is associated with deposition of β-amyloid in the brain, but has also been reported in neuroinflammatory conditions. Ratio of total tau:Aβ1-42 aids interpretation of results. Specimen requirements: CSF in plain polypropylene tube. Minimum sample volume: 500µL in separate polypropylene tubes for each test. Special precautions/Transport: Unhaemolysed CSF MUST be collected in polypropylene tubes, centrifuged, separated</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
and the supernatant frozen on the same day as the LP. Samples from outside NHNN must be transported frozen on dry ice. For long term storage CSF must be kept frozen at -80°C. Important note: Aβ1-42 may be artificially low if samples are not processed correctly. See Appendix 1.

Methodology: ELISA
EQA: Alzheimer’s Association EQA Scheme (European)

<table>
<thead>
<tr>
<th>Phospho-Tau</th>
<th>Sample type: CSF</th>
<th>TaT: 25 working days</th>
<th>NHS Price: £66</th>
</tr>
</thead>
</table>

Test for: Investigation of dementias including Alzheimer’s Disease. Elevated phospho-tau levels indicate tangle pathology as seen in Alzheimer’s disease and are not usually seen in other conditions.
Alternative name: P-Tau
Specimen requirements: CSF in plain polypropylene tube.
Minimum sample volume: 500µL in polypropylene tube.
Special precautions/Transport: Unhaemolysed CSF MUST be collected in polypropylene tubes, centrifuged, separated and the supernatant frozen on the same day as the LP. Samples from outside NHNN must be transported frozen on dry ice. For long term storage CSF must be kept frozen at -80°C. See Appendix 1.
Methodology: ELISA
EQA: Alzheimer’s Association EQA Scheme (European)

<table>
<thead>
<tr>
<th>14-3-3</th>
<th>Sample type: CSF</th>
<th>TaT: 25 working days</th>
<th>NHS Price: £20</th>
</tr>
</thead>
</table>

Test for: Investigation of neurodegenerative disorders
Alternative name: CSF protein 14-3-3
Specimen requirements: CSF in plain polypropylene tube.
Minimum sample volume: 500µL.
Special precautions/Transport: Unhaemolysed CSF MUST be collected in polypropylene tubes, centrifuged, separated and the supernatant frozen on the same day as the LP. Samples from outside NHNN must be transported frozen on dry ice. For long term storage CSF must be kept frozen at -80°C.
Methodology: Western Immunoblotting
EQA: None available

<table>
<thead>
<tr>
<th>S100b</th>
<th>Sample type: CSF</th>
<th>TaT: 25 working days</th>
<th>NHS Price: £40</th>
</tr>
</thead>
</table>

Test for: Investigation of neurodegenerative and neuroinflammatory disorders
Alternative name: S100beta
Specimen requirements: CSF in plain polypropylene tube.
Minimum sample volume: 500µL.
Special precautions/Transport: Unhaemolysed CSF MUST be collected in polypropylene tubes, centrifuged, separated and the supernatant frozen on the same day as the LP. Samples from outside NHNN must be transported frozen on dry ice. For long term storage CSF must be kept frozen at -80°C.
Methodology: ELISA
EQA: None available

<table>
<thead>
<tr>
<th>Lactate</th>
<th>Sample type: CSF* &amp; plasma*</th>
<th>TaT: STAT</th>
<th>NHS Price: £5</th>
</tr>
</thead>
</table>

Test for: Metabolic disturbance and possible infection.
Minimum sample volume: 500µL.
Special precautions/Transport: Samples should be unhaemolysed & transported by first class post from outside NHNN
Methodology: Enzymology
EQA: UK NEQAS CSF Proteins and Biochemistry.

<table>
<thead>
<tr>
<th>Neurofilament heavy chain</th>
<th>Sample type: CSF</th>
<th>TaT: 40 working days (under review)</th>
<th>NHS Price: £40</th>
</tr>
</thead>
</table>

Test for: Investigation of neurodegenerative and neuroinflammatory disorders
Alternative name: NFH, pNFH
Specimen requirements:
Minimum sample volume: 500µL
Special precautions/Transport: Samples should be unhaemolysed & transported by first class post from outside NHNN.
### HIV CSF Cognitive Panel

**Sample type:** CSF  
**TaT:** 25 working days  
**NHS Price:** £380

Test for: Investigation of cognitive decline in cases of HIV. Includes CSF biomarkers: Total tau, Aβ1-42, S100b, Ferritin, Neopterin.  
Specimen requirements: CSF in plain polypropylene tube.  
Minimum sample volume: 250-500 µL in separate polypropylene tubes for each test.  
Special precautions/Transport: Unhaemolysed CSF MUST be collected in polypropylene tubes, centrifuged, separated and the supernatant frozen on the same day as the LP. Samples from outside NHNN must be transported frozen on dry ice. For long term storage CSF must be kept frozen at -80°C. Important note: Aβ1-42 may be artificially low if samples are not processed correctly. See Appendix 1.

### Beta Trace Protein (B2-transferrin, Asialotransferrin)

**Sample type:** Unknown fluid  
**TaT:** 3 working days  
**NHS Price:** £35

Test for: CSF leak in fluids, e.g. nasal, ear, wound, subretinal.  
Alternative name: Asialotransferrin, Prostaglandin D2 synthetase, Tau transferrin. Also referred to as ‘Tau’. However, this is NOT the same biomarker as tau-protein; the dementia biomarker (see above). To avoid confusion please do NOT use the term ‘tau protein’ when requesting this test.  
Specimen requirements: Unhaemolysed fluid in a SMALL plain tube. Plus a serum sample (500 µL).  
Note: Please do not use large containers for small fluid volumes as evaporation will lead to processing difficulties.  
Minimum sample volume: 100 µL fluid and 500 µL serum.  
Special precautions/Transport: First class post.  
Methodology: Enhanced Nephelometry  
EQA: UK NEQAS CSF Beta2 Transferrin

### Anti-Acetylcholine Receptor Antibodies

**Sample type:** Serum  
**TaT:** 15 working days  
**NHS Price:** £20

Test for: Autoimmune Myasthenia Gravis  
Alternative name: Acetylcholine receptor autoantibodies.  
Specimen requirements: Serum  
Minimum sample volume: 500 µL.  
Special precautions/Transport: Samples should be unhaemolysed & transported by first class post from outside NHNN  
Methodology: ELISA  
EQA: UK NEQAS Acetyl Choline Receptor Antibodies

### Anti-Basal Ganglia Antibodies

**Sample type:** Serum  
**TaT:** 10 working days  
**NHS Price:** £68

Test for: Sydenham's chorea  
Alternative name: ABGA  
Note: Includes antibodies to enolase, pyruvate kinase, aldolase.  
Specimen requirements: Serum  
Minimum sample volume: 500 µL.  
Special precautions/Transport: Samples should be unhaemolysed & transported by first class post from outside NHNN  
Methodology: Western Immunoblotting  
EQA: None available

### Anti-Neuronal Antibodies

**Sample type:** Serum, CSF  
**TaT:** 10 working days  
**NHS Price:** £40

Test for: Paraneoplastic neurological syndromes  
Alternative name: PNS antibodies  
Note: Includes antibodies to Hu, Yo, Ri, Ma1, Ma2, CV2, amphyphysin, Sox1, Tr, PCA2. With Zic4 and Gephyrin by prior arrangement.  
Specimen requirements: serum or CSF  
Minimum sample volume: 500 µL, CSF 1100 µL.  
Special precautions/Transport: Samples should be unhaemolysed & transported by first class post from outside NHNN  
Methodology: Indirect immunofluorescence, Western and recombinant immunoblotting.
<table>
<thead>
<tr>
<th>Test</th>
<th>Sample type</th>
<th>TaT:</th>
<th>NHS Price:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Anti-Glycolipid Antibodies</strong></td>
<td>Serum</td>
<td>10 working days</td>
<td>£40</td>
</tr>
<tr>
<td>Test for: Autoimmune peripheral neuropathies</td>
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<tr>
<td>Alternative name: Anti-ganglioside antibodies</td>
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</tr>
<tr>
<td>Routine screen: Includes antibodies to GM1, GM2, GD1a, GD1b, GQ1b</td>
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<tr>
<td>Additional screen available on request (£40): Includes antibodies to GA1, GM3, GD3, GT1a, GT1b</td>
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<tr>
<td>Sulphatides available on request (£20): Antibodies to sulphatides</td>
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<tr>
<td>Specimen requirements: Serum</td>
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<tr>
<td>Minimum sample volume: 500µL.</td>
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<tr>
<td>Special precautions/Transport: Samples should be unhaemolysed &amp; transported by first class post from outside NHNN</td>
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<td></td>
</tr>
<tr>
<td>Methodology: ELISA</td>
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<td></td>
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<tr>
<td>EQA: NEQAS Pilot Scheme</td>
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<tr>
<td><strong>Anti-MAG Antibodies</strong></td>
<td>Serum</td>
<td>21 working days</td>
<td>£50</td>
</tr>
<tr>
<td>Test for: Autoimmune neuropathies associated with myeloma and IgM paraprotein</td>
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<tr>
<td>Alternative name: Anti-Myelin Associated Glycoprotein Antibodies</td>
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<tr>
<td>Specimen requirements: Serum</td>
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<tr>
<td>Minimum sample volume: 500µL.</td>
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<td></td>
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</tr>
<tr>
<td>Special precautions/Transport: Samples should be unhaemolysed &amp; transported by first class post from outside NHNN</td>
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<td></td>
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<tr>
<td>Methodology: ELISA</td>
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<tr>
<td>EQA: None available but sample exchange programme is in place</td>
<td></td>
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<tr>
<td><strong>Anti-GAD Antibodies</strong></td>
<td>Serum, CSF</td>
<td>10 working days</td>
<td>£40 for each</td>
</tr>
<tr>
<td>Test for: Autoimmune diabetes and autoimmune stiff person syndrome</td>
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<tr>
<td>Alternative name: Anti-Glutamic Acid Decarboxylase Antibodies</td>
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<tr>
<td>Specimen requirements: Serum or CSF and serum.</td>
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<tr>
<td>Minimum sample volume: 500µL.</td>
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</tr>
<tr>
<td>Special precautions/Transport: Samples should be unhaemolysed &amp; transported by first class post from outside NHNN</td>
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<tr>
<td>Methodology: Western immunoblot</td>
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</tr>
<tr>
<td>EQA: UK NEQAS for Paraneoplastic Antibodies</td>
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<tr>
<td><strong>Anti-Retinal Antibodies</strong></td>
<td>Serum</td>
<td>40 working days</td>
<td>£68</td>
</tr>
<tr>
<td>Test for: Paraneoplastic retinopathy against recoverin and alpha-enolase</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specimen requirements: Serum</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum sample volume: 500µL.</td>
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<td></td>
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</tr>
<tr>
<td>Special precautions/Transport: Samples should be unhaemolysed &amp; transported by first class post from outside NHNN</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Methodology: Western immunoblot</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EQA: None available</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Anti-NMDA Receptor Antibodies</strong></td>
<td>Serum, CSF</td>
<td>10 working days</td>
<td>£40 for each</td>
</tr>
<tr>
<td>Test for: Autoimmune encephalitis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternative name: Anti-N-methyl-D-aspartate receptor antibodies</td>
<td></td>
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</tr>
<tr>
<td>Specimen requirements: Serum, CSF. It is recommend that both CSF and serum is measured</td>
<td></td>
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</tr>
<tr>
<td>Minimum sample volume: 500µL.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special precautions/Transport: Samples should be unhaemolysed &amp; transported by first class post from outside NHNN</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Methodology: Indirect immunofluorescence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EQA: None available but sample exchange programme is in place</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test Name</td>
<td>Sample Type</td>
<td>TaT</td>
<td>NHS Price</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>Anti LGI1, CASPR2 (formerly VGKC complex) Antibodies</td>
<td>Serum*, (CSF* on request)</td>
<td>5 working days</td>
<td>£75 for both LGI1 and CASPR2</td>
</tr>
<tr>
<td>Test for: Autoimmune encephalitis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternative name: Formerly Voltage gated potassium channel antibodies, LGI1, CASPR2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specimen requirements: Serum or CSF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum sample volume: 500µL.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special precautions/Transport: Samples should be unhaemolysed &amp; transported by first class post from outside NHNN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Methodology: Indirect immunofluorescence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EQA: Euroimmune</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neutralising Antibodies to β-Interferon</td>
<td>Serum</td>
<td>21 working days</td>
<td>£90</td>
</tr>
<tr>
<td>Test for: Monitoring multiple sclerosis patients on beta-interferon therapy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternative name: NAbs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Note: Binding antibodies do not necessarily neutralise the bioactivity of beta-interferon. This bioassay measures antibodies that bind and neutralise beta-interferon activity.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specimen requirements: Serum</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum sample volume: 500µL.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special precautions/Transport: Samples should be unhaemolysed &amp; transported by first class post from outside NHNN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Methodology: Luciferase bioassay</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EQA: None available</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vascular Endothelial Growth Factor</td>
<td>Serum</td>
<td>21 working days</td>
<td>£55</td>
</tr>
<tr>
<td>Test for: POEMS syndrome and myeloma. POEMS: peripheral neuropathy, organomegaly, endocrinopathy, monoclonal gammopathy, skin changes.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternative name: VEGF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specimen requirements: Serum</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum sample volume: 500µL.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special precautions/Transport: Samples should be unhaemolysed &amp; transported by first class post from outside NHNN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Methodology: ELISA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EQA: None available</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transferrin Glycoforms</td>
<td>Serum</td>
<td>9 working days</td>
<td>£50</td>
</tr>
<tr>
<td>Test for: Congenital disorders of glycosylation (CDG). This is NOT a test for alcohol abuse or haemochromatosis.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alternative name: CDG screen</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Note: This test may be unreliable in neonates younger than three weeks due to the presence of maternal transferrin. Recent transfusion may invalidate the result. Specimen requirements: Serum. Plasma is acceptable, preferably not EDTA. Minimum sample volume: 100µL.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special precautions/Transport: Samples should be unhaemolysed &amp; transported by first class post from outside NHNN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Methodology: Isoelectric focusing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EQA: ERNDIM CDG Scheme</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
TURNAROUND TIMES

The target turnaround time is for 90% of tests requested and is given as the number of working days from receipt to result authorisation, it is the within laboratory TaT as postal delays are not taken into account. All urgent results (e.g. all xanthochromia and positive beta-2 transferrin) are relayed by telephone or fax (safe haven), if possible, prior to a hardcopy of the report being sent in the post.

NOTE: Prices quoted are for NHS requests; these are a guide only and may be subject to change in the future.

SUGGESTIONS AND COMPLAINTS

Suggestions or complaints about our service may be raised at any time with the Laboratory Manager melanie.hart@uclh.nhs.uk or when completing our annual user satisfaction survey. Suggestions will be discussed and evaluated at departmental meetings.

All complaints will be dealt with in compliance with the UCLH Complaints Policy. The Laboratory Manager will investigate and issue a response as soon as possible.

PATIENT CONSENT

For samples referred from outside the UCLH Trust it is a requirement that there is patient consent to disclose clinical information and family history to relevant healthcare professionals as required for the purposes of diagnosis and patient management. On receipt of a referred sample for testing, as part of the service agreement, the NICL assumes that this consent has been given.
APPENDIX 1

Testing for total tau protein and amyloid beta in CSF

Sample requirements:

Unhaemolysed CSF MUST be collected in polypropylene tubes, centrifuged, separated and the supernatant frozen at -80°C on the same day of lumbar puncture. Please freeze in separate aliquots for each test (in polypropylene tubes - minimum volume 0.5mL per tube).
Note: Results may be unreliable if polystyrene tubes are used.

Polypropylene Universal tube: e.g. Sarstedt Product code 63.9922.254.
Polypropylene sample tube: e.g. Elkay 021-4204-500. Lids are extra and can be bought in a variety of colours. (We use yellow lids, Elkay 021-4800-506)

Sample transport:

Samples must be sent frozen, on dry ice (solid CO₂), preferably at the beginning of the week to avoid delays at weekends and bank holidays. Samples need to arrive in Neuroimmunology before 5 pm. The samples need to remain frozen until analysis.

For enquiries contact:

Dr Miles Chapman
Tel: 020 3448 3481
Email: miles.chapman@uclh.nhs.uk
APPENDIX 2

Testing for neutralising antibodies to interferon-beta in serum

Sample requirements:

For interferon-beta neutralising antibody testing we require a serum sample (1-2ml minimum), with cells removed.

Sending samples within the UK:

These may be sent at ambient temperature by first class post, preferably at the beginning of the week to avoid delays at weekends and bank holidays.

Sending samples from overseas:

These should be frozen and sent on dry ice (solid CO₂), preferably at the beginning of the week to avoid delays at weekends and bank holidays. Please notify Dr Melanie Hart by email in advance (see address below).

The following information should be included with each sample:

The name of the consultant.

The address (including department) to send the report to.

The basic demographics of the patient.

The type of interferon-beta product that the patient is receiving.

When the interferon-beta therapy was started.

For enquiries contact:

Dr Melanie Hart
Tel: 020 3448 3814
Email: melanie.hart@uclh.nhs.uk
### APPENDIX 3

**Analyte normal ranges (where applicable)**

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Range</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSF glucose</td>
<td>2.2 to 4.2</td>
<td>mmol/L</td>
</tr>
<tr>
<td>Plasma glucose (fasting)</td>
<td>3.8 to 5.8</td>
<td>mmol/L</td>
</tr>
<tr>
<td>CSF IgG</td>
<td>10 to 40</td>
<td>mg/L</td>
</tr>
<tr>
<td>Serum IgG</td>
<td>7 to 16</td>
<td>g/L</td>
</tr>
<tr>
<td>CSF albumin</td>
<td>90 to 360</td>
<td>mg/L</td>
</tr>
<tr>
<td>Serum albumin</td>
<td>34 to 50</td>
<td>g/L</td>
</tr>
<tr>
<td>IgG index</td>
<td>0.3 to 0.7</td>
<td></td>
</tr>
<tr>
<td>QAib</td>
<td>&lt;7.2</td>
<td></td>
</tr>
<tr>
<td>White cell count</td>
<td>&lt;5</td>
<td>Cells/µL</td>
</tr>
<tr>
<td>Red cell count</td>
<td>&lt;5</td>
<td>Cells/µL</td>
</tr>
<tr>
<td>CSF total protein</td>
<td>0.13 to 0.45</td>
<td>g/L</td>
</tr>
<tr>
<td>CSF lactate</td>
<td>1.1 to 2.4</td>
<td>mmol/L</td>
</tr>
<tr>
<td>Plasma lactate</td>
<td>0.5 to 2.2</td>
<td>mmol/L</td>
</tr>
<tr>
<td>CSF LDH</td>
<td>&lt;57</td>
<td>U/L</td>
</tr>
<tr>
<td>Net bilirubin absorbance</td>
<td>&lt;0.007</td>
<td>OD</td>
</tr>
<tr>
<td>Net oxyhaemoglobin absorbance</td>
<td>&lt;0.020</td>
<td>OD</td>
</tr>
<tr>
<td>CSF ferritin</td>
<td>&lt;16</td>
<td>ng/mL</td>
</tr>
<tr>
<td>CSF total tau</td>
<td>146 to 595</td>
<td>pg/mL</td>
</tr>
<tr>
<td>CSF Aβ1-42</td>
<td>627 to 1322</td>
<td>pg/mL</td>
</tr>
<tr>
<td>CSF phospho-tau181</td>
<td>24 to 68</td>
<td>pg/mL</td>
</tr>
<tr>
<td>CSF neurofilament (heavy)</td>
<td>&lt;473</td>
<td>pg/mL</td>
</tr>
<tr>
<td>Anti-AchR antibodies</td>
<td>0 to 100</td>
<td>pmol/L</td>
</tr>
<tr>
<td>Anti-GAD antibodies</td>
<td>&lt;10</td>
<td>IU/mL</td>
</tr>
<tr>
<td>Neutralising antibodies to β-interferon</td>
<td>&lt;20</td>
<td>Units</td>
</tr>
<tr>
<td>Serum VEGF</td>
<td>&lt;771</td>
<td>pg/mL</td>
</tr>
<tr>
<td>CSF IgM</td>
<td>0 to 0.9</td>
<td>mg/L</td>
</tr>
<tr>
<td>CSF S100β</td>
<td>&lt;740</td>
<td>pg/mL</td>
</tr>
<tr>
<td>Beta Trace Protein</td>
<td>Dependent on fluid (See report)</td>
<td></td>
</tr>
</tbody>
</table>
Appendix

Links

Please note: links are only correct at time of printing

Linked to Controlled Document

- Document: NICL_UH_001: User Handbook (NHS) v13.0 (Superseded)
- Document: NICL_UH_001: User Handbook (NHS) v13.2 (Superseded)
- Document: NICL_UH_001: User Handbook (NHS) v13.3 (Superseded)
- Document: NICL_UH_001: User Handbook (NHS) v13.4 (Superseded)
- Document: NICL_UH_001: User Handbook (NHS) v13.5 (Superseded)
- Document: NICL_UH_001: User Handbook (NHS) v13.6 (Superseded)

Document Revision History

Superseded on 05-May-2017 10:01 by Melanie Hart

Version 14.0 superseded by version 14.1

Authorised on 05-May-2017 10:01 by Melanie Hart

Authorised version 14.1 - New test updates and updates to UKAS accreditation on some tests. The following users will be notified when a review is due for this document: Melanie Hart

Document was scheduled to be released on 2017-05-05

Draft Created on 27-Apr-2017 09:06 by Melanie Hart

Reason: Updates to accreditation status and new tests

Superseded on 17-Feb-2017 12:24 by Melanie Hart

Version 13.9 superseded by version 14.0

Authorised on 17-Feb-2017 12:24 by Melanie Hart

Authorised version 14.0 - New content table. The following users will be notified when a review is due for this document: Melanie Hart
Appendix: Document User Handbook (NHS)

Draft Created on 17-Feb-2017 12:14 by Melanie Hart
Reason: update content table

Superseded on 17-Feb-2017 12:10 by Melanie Hart
Version 13.8 superseded by version 13.9

Authorised on 17-Feb-2017 12:10 by Melanie Hart
Authorised version 13.9 - Updated BTP assay. The following users will be notified when a review is due for this document: Melanie Hart

Draft Created on 08-Feb-2017 08:10 by Melanie Hart
Reason: Test amendment for BTP

Superseded on 20-Jan-2017 15:05 by Melanie Hart
Version 13.7 superseded by version 13.8

Authorised on 20-Jan-2017 15:05 by Melanie Hart
Authorised version 13.8 - Adding UKAS accreditation information. The following users will be notified when a review is due for this document: Melanie Hart

Draft Created on 16-Jan-2017 10:06 by Melanie Hart
Reason: To update regarding accreditation status and new test

Superseded on 12-Dec-2016 09:12 by Melanie Hart
Version 13.6 superseded by version 13.7

Authorised on 12-Dec-2016 09:12 by Melanie Hart
Authorised version 13.7 - . The following users will be notified when a review is due for this document: Melanie Hart

Draft Created on 01-Sep-2016 11:40 by Melanie Hart
Reason: Add Dr Michael Zandi details

Superseded on 16-Aug-2016 10:17 by Melanie Hart
Version 13.5 superseded by version 13.6
Authorised on 16-Aug-2016 10:17 by Melanie Hart

Authorised version 13.6 - CSF testing added. The following users will be notified when a review is due for this document: Melanie Hart

Draft Created on 09-Aug-2016 13:10 by Melanie Hart

Reason: CSF testing added

Superseded on 05-Aug-2016 11:23 by Melanie Hart

Version 13.4 superseded by version 13.5

Authorised on 05-Aug-2016 11:23 by Melanie Hart

Authorised version 13.5 - Updated Staff list

Updated sample information for Xanthochromia. The following users will be notified when a review is due for this document: Vaneesha Gibbons

Document was scheduled to be released on 2016-08-05

Draft Created on 05-Aug-2016 10:43 by Melanie Hart

Reason: New staff appointed in NICL

Superseded on 20-Jun-2016 10:42 by Miles Chapman

Version 13.3 superseded by version 13.4

Authorised on 20-Jun-2016 10:42 by Miles Chapman

Authorised version 13.4 - Alter CDG minimum volume to 100 uL. The following users will be notified when a review is due for this document: Miles Chapman, Vaneesha Gibbons

Document was scheduled to be released on 2016-06-14

Draft Created on 17-Jun-2016 13:23 by Miles Chapman

Reason: Amendments to min vol for CDG to 100 uL. Add caveat "Current copies of this manual are held on external and internal NICL webpages. Any updates must be promptly uploaded onto websites."

Superseded on 14-Jun-2016 16:26 by Miles Chapman

Version 13.2 superseded by version 13.3
Appendix: Document User Handbook (NHS)

Authorised on 14-Jun-2016 16:26 by Miles Chapman

Authorised version 13.3 - Dementia guidelines checked and analyte normal ranges added. The following users will be notified when a review is due for this document: Vaneesha Gibbons

Document was scheduled to be released on 2016-06-14

Draft Created on 14-Jun-2016 16:01 by Miles Chapman

Reason: Addition of normal ranges and dementia guidelines

Superseded on 18-Apr-2016 12:22 by Vaneesha Gibbons

Version 13.1 superseded by version 13.2

Authorised on 18-Apr-2016 12:22 by Vaneesha Gibbons

Authorised version 13.2 - Changes
Consultant to vacant or MDC as appropriate
Quality manager added
Office co ordinator vacant
MLA vacant
Typos and grammar where found
Add medication/dosage eg nabs to criteria p6
Added CSF LDH
Added use 2 ml tubes to OCB entry

The following users will be notified when a review is due for this document: Miles Chapman

Draft Created on 05-Apr-2016 16:00 by Miles Chapman

Reason: Updating test list
Amending small details

Superseded on 08-Feb-2016 07:58 by Vaneesha Gibbons

Version 13.0 superseded by version 13.1

Authorised on 08-Feb-2016 07:58 by Vaneesha Gibbons

Authorised version 13.1 - : Amendment to T&T to 25 working days to both the NHS and PP version..

The following users will be notified when a review is due for this document: Miles Chapman
Draft Created on 05-Feb-2016 12:08 by Rosemary Monero

Reason: Amendment of turn-around-times required to 25 working days

Authorised on 03-Dec-2015 13:49 by Viki Worthington (Inactive)

Authorised version 13.0 - . The following users will be notified when a review is due for this document: Miles Chapman

Creation on 03-Dec-2015 13:48 by Viki Worthington (Inactive)

New Document created

Authorisation

This document was securely signed and authorised by Melanie Hart on 05-May-2017