

## Department of Clinical Neurology, University of Oxford

### Head of Neurosciences Group:

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### Neurosciences Group

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### Mailing samples for antibody tests

**Tests available are described on the next page.**

**Sample:** one ml **SERUM** taken from a clotted sample, or plasma from an EDTA, heparin or citrate sample required. **Does not need to be sent frozen if it is clean and unhaemolysed, and if it arrives within two to three days.** One ml CSF should be sufficient, if available, but is not required for any of the antibody tests which are all based on serum (see comments on NMDAR antibodies below)..

**Container:** send in a leak proof **screw-top** polypropylene tube that can withstand drop in air pressure (if coming by air). Best tubes are Sarstedt cat no 72.894.007.

**Packaging:** must meet requirements of relevant UN and postal regulations:

\*Put all specimen tubes into a secondary leak-proof sealed container; include absorbent material to absorb any spillage.

\*Put the leak-proof container and a **request card or letter** detailing the request INTO an external package strong enough to withstand trauma. **DO NOT PUT THE PAPER WORK ON THE OUTSIDE OF THE PACKAGE** as it may get discarded with the packaging.

#### **PLEASE include the following information with each request:**

- Label all tubes with patient's **name and date of birth** or **name and identifying number**.
- On request card give **full patient name and identifiers (eg NHS number), date of birth, provisional diagnosis** or clinical signs, and **the test(s) that you require**.
- Give full **requester** information, including **name/department address** for report . If its really urgent include **email** address. Include address to which the bill should be sent if relevant
- Send this **paperwork WITH THE SAMPLE** but in separate bag which should be uncontaminated with biological material and **INSIDE** the external packaging..
- For ROUTINE tests done for RESEARCH purposes, put **RESEARCH ONLY** and you will not be charged. (Consent should not be necessary if its for diagnosis, even if we are not charging). For NON-ROUTINE tests, please ask the patient for signed consent to perform research on their serum/CSF and send copy of consent with the sample if possible.
- Include **copy of email** correspondenc,e if appropriate, since this makes it easy to contact you quickly if there is a positive result.
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**Mail to: Prof A Vincent, Neurosciences Group, Weatherall Institute of Molecular Medicine, John Radcliffe Hospital, Oxford OX3 9DS, UK (Fax +44 1865 222402 Tel +44 1865 222327/1)**

For charges (see overleaf) you will be invoiced within two months AFTER the result is sent.

A report will be sent on completion of routine requested tests. **For queries regarding sera, results or other enquiries please PHONE Clinical Immunology +44 1865 225995.** For clinically-related matters please phone +44 1865 222321 or email [angela.vincent@imm.ox.ac.uk](mailto:angela.vincent@imm.ox.ac.uk).

Many thanks for your interest and cooperation. We hope that we can be of help.

Angela Vincent, Professor of Neuroimmunology, Honorary Consultant in Immunology

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Departmental Administrator

Ms Moira Westwood.01865 224805

## Antibody tests available and costs Aug 2008 (new tests next page)

Antigen (antibody; technique)	Associated Disorder	Antibody Positivity	Performed	Cost
Acetylcholine Receptor (anti-AChR; RIA) IgG	<b>Myasthenia Gravis:</b> Generalised Ocular  <b>See also Additional Tests overleaf</b>	85% 50%	Weekly	£20 NHS £30 private or overseas
MuSK (anti-MuSK; RIA) IgG	<b>Generalised AChR antibody negative Myasthenia Gravis</b> (3% of all MG patients approx) <b>See also Additional Tests overleaf</b>	up to 50% of AChR neg MG (variable)	Weekly	£20.00 £30 private or overseas
Voltage gated Ca <sup>2+</sup> channel (anti-VGCC; RIA) IgG	<b>Lambert-Eaton Syndrome</b> (with or without SCLC) Cerebellar ataxia ass with SCLC	>85%  Around 30%	Weekly	£40.00
Voltage gated K <sup>+</sup> channel (anti-VGKC; RIA) IgG	<b>Acquired neuromyotonia</b>  <b>Limbic encephalitis-like syndromes</b> (both can be associated with thymoma or SCLC but are usually not paraneoplastic)	40%  Not known	Monthly	£40.00
<b>NEW ASSAYs for NMDAR, AQP4 and GlyR antibodies</b>	<b>Please see overleaf</b>	Variable	Monthly	£50.00
Ganglioside (GM1) (anti-GM1; ELISA) IgG and IgM (combined)	<b>Guillain Barre Syndrome (IgG)</b> <b>Multifocal motor neuropathy (IgM)</b>	~40% ~60%	Weekly	£20 NHS £30 private or overseas
Ganglioside (GQ1b) (anti-GQ1b; ELISA) IgG and IgM (combined)	<b>Miller-Fisher syndrome (IgG)</b> <b>Chronic sensory neuropathy (IgM)</b>	>90% Some	Weekly	£20 NHS £30 private or overseas
Glutamic acid decarboxylase (GAD) (anti GAD; RIA) IgG	High levels >1000 U/ml in <b>Stiff-man syndrome</b> <b>cerebellar ataxia, rare cases of epilepsy</b> <b>and limbic encephalitis</b> (may have other autoimmune disorders) Low levels <1000 U/ml in <b>Diabetes</b>	~60% Not known	Weekly	£20 NHS £30 private or overseas
Myelin associated glycoprotein (MAG) (anti-MAG; ELISA) IgM	<b>Chronic sensory neuropathies</b>	Some	Fortnightly	£40 NHS £40 private or overseas
<b>Markers for Paraneoplastic neurological syndromes</b>  <b>Anti-neuronal antibodies</b> detected by immunohistochemistry (Hu, Yo, Ri, Ma, Tr and potentially other autoantibodies); <b>if positive,</b> followed by confirmation using immunoblotting on RAVO kit ----- <b>RAVO kit</b> Immunoblotting detects Hu, Yo, Ri, Ma, Amphiphysin, CRMP/CV2 but <b>not Tr</b> or other antibodies)	<b>Antigen:</b> most common presentation (most frequent associated tumour) <b>Hu, ANNA1:</b> Subacute sensory neuropathy/ encephalitis (SCLC) <b>Yo, APCA1:</b> Cerebellar degeneration (breast, ovary) <b>Ri, ANNA2:</b> Opsoclonus/Myoclonus and other (breast) <b>Ma2,</b> Limbic encephalitis and other syndromes (testicular and other cancers) <b>Amphiphysin:</b> Opsoclonus, ataxia (breast, SCLC) <b>CRMP/CV2:</b> Various (various) <b>Tr:</b> Cerebellar ataxia (lymphomas) <b>NMDAR:</b> encephalopathy with psychiatric and bizarre movements (teratomas) see next page	Variable	Weekly but can be a backlog	Anti- neuronal antibodies with RAVO- kit only if indicated £45 NHS £60 private or overseas  ----- RAVO kit only £60

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## Additional tests

**Serum antibodies to clustered AChR or MuSK on cell lines.** These tests are more sensitive for myasthenia gravis (see Leite et al Brain 2008) but have not yet been fully evaluated in routine practice. We cannot provide them for standard analysis, but are willing to do them if the need is sufficient. We would welcome feedback. £100 for both, but only performed monthly.

**Serum Aquaporin-4 antibodies** for Devic's disease (neuromyelitis optica; this assay is as or more sensitive than NMO-IgG) (see Waters et al Arch Neurol 2008). We are now doing it only with the cell-based assay which we believe to be the most sensitive and specific. £50 charge Performed every two weeks.

**NMDA Receptor antibodies.** £50. Performed every two weeks. Positive in young women with teratomas and complex encephalopathies including psychiatric presentation, seizures, movement disorders and mutism (see Dalmau et al Ann Neurol 2007; Lancet Neurology 2008). Also positive in increasing number of other unexplained, probably autoimmune or paraneoplastic cases. In our series, there are about 30% males and only 25% of women have tumours. This antibody has also been found in very young children with an encephalitis and movement disorders.

Nb. We do this test on serum or CSF, because with our assay serum is as sensitive as CSF. If you send both, you can ask for the CSF to be "no charge" as we are interested in comparing titres.

**(this is different to Dr Dalmau; he gets lower results with serum because he dilutes it more. Nevertheless, our specificity with serum or CSF is very high)**

**Glycine Receptor antibodies.** Not yet being done routinely but can be requested by email if you have a patient with SPS plus encephalomyelitis (PERM) or any patient with excessive startle (see Hutchinson-M et al Neurology 2008). Might also be worth sending CSF for this test if available as CSF levels can be very high.

**Serum Alpha3 ganglionic receptor** antibodies for autoimmune autonomic neuropathies. Very little demand but is being done approximately every two months. £50. For further information please contact

[angela.vincent@imm.ox.ac.uk](mailto:angela.vincent@imm.ox.ac.uk) or [blang@hammer.imm.ox.ac.uk](mailto:blang@hammer.imm.ox.ac.uk)

### **CSF Orexin levels for narcolepsy £50 charge**

**Performed about every two months. 0.5 – 1.0 ml of CSF previously sent frozen on dry ice but our evidence suggests this may not be necessary. Suggest keeping an aliquot frozen at source, and sending the rest by regular mail or courier. THE MANUFACTURERS SEEM TO HAVE THE KIT WORKING AGAIN AND WE ARE GONG OVER THE BACKLOG OF SAMPLES**