Neuroimmunology Laboratory
Level 1B, Laboratory Medicine & Facilities Building
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For the attention of the Laboratory Manager

Dear Sir/Madam,

Introduction of New Assays to the Neuroimmunology Laboratory Glasgow

I am pleased to inform you that Neuroimmunology at Queen Elizabeth University Hospital Glasgow is now able to offer testing for anti- glutamate receptor (Type NMDA) antibodies and Anti- voltage gated potassium channel associated proteins (LGI1 and CASPR2).

- **Anti- glutamate receptor (Type NMDA) antibodies**
  Anti-NMDA receptor encephalitis manifests along a spectrum of psychosis, altered behaviour, movement disorder, seizures, autonomic dysfunction and decreased consciousness. In younger patients, particularly female, it is associated with an underlying teratoma. Early identification and treatment with immunotherapy leads to better outcomes (Pubmed ID 23290630). It is less common in older patients (over 45 years old) and they display a less severe phenotype and have poorer outcomes (Pubmed ID23946310).

  Antibodies against the NR1 subunit of the NMDA receptor are identified in our laboratory via indirect immunofluorescence of cell lines transfected with cDNA coding this protein. This test has very high positive and negative predictive values. Testing is carried out on serum or CSF. CSF is preferred for testing since there are fewer false positives or false negatives compared with serum.

- **Anti- voltage gated potassium channel associated proteins (LGI1 and CASPR2)**
  Antibodies against the VGKC associated proteins LGI1 and Caspr2 are associated with a number of neurological syndromes.

  Anti-LGI1 antibody encephalitis usually manifests in a number of ways. It can cause faciobrachial dystonic seizures (FBDS), other focal seizures - often with prominent autonomic features - a more pronounced limbic encephalitis with amnesia, cognitive decline and seizures, or it can cause a rapidly progressive encephalopathy (Pubmed ID 27590293).

  Anti-Caspr2 antibody mediated syndromes include peripheral nerve hyperexcitability, Morvan syndrome and a more protracted, subacute limbic

encephalitis with encephalopathy, seizures, cerebellar dysfunction, autonomic disturbance, neuropathic pain, insomnia and weight loss (Pubmed ID 27371488).

Antibodies against Caspr2 or LGI1 are identified in our laboratory via indirect immunofluroscence of cell lines transfected with cDNA coding the protein of interest. This is a very specific and sensitive test for antibodies against these antigens and an alternative to the anti-voltage-gated potassium channel complex antibody (VGKCC) radioimmunoassay.

Frequency and turnaround time

Both assays are carried out weekly, currently on a Monday. Results will be available within 1 week of receipt. In the event that repeat testing is required, this may delay results for a further week.

EQA

The laboratory takes part in the Institute for Quality Assurance LÜbeck an EQA scheme run by Euroimmun.

Sample Requirements

1 ml serum
or
1ml CSF (NMDA only)

Cost

Anti-NMDA - £35.00
Anti-LGI1 & CASPR2 (combined) - £60.00

Please include a purchase order number and billing details for your finance department. Invoicing will be on a quarterly basis.

If you require any further information please do not hesitate to contact me on Tel: 0141 354 9024 or by email: carolyn.watt@ggc.scot.nhs.uk.

Yours faithfully,

Carolyn Watt

Carolyn Watt
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