London Health Sciences Centre
St JOSEPH's HEALTH CARE LONDON
Pathology and Laboratory Medicine

Memorandum

Date	September 10, 2020
To	LHSC/St. Joseph's Hospital Neurologists, Regional Hospitals and External Clients
From	Dr. Liju Yang, PhD, FCACB Section Head - Clinical Immunology/Trace Elements
Subject	Comprehensive Autoimmune Encephalitis Panel Testing

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What is happening?
As a Canadian centre of excellence in Autoimmune Neurology, we are proud to announce a Canadian-first comprehensive assessment of autoimmune neurological disorders. On October 1, 2020, we will offer expanded, comprehensive neural antibody panel testing for autoimmune encephalitis. This panel includes testing for autoimmune encephalitis antibodies (Anti- NMDAR, LGI1, CASPR2, AMPAR-1/2, GABAR-B1/B2 and DPPX), Paraneoplastic antibodies (Anti-Hu/ANNA-1, Ri/ANNA-2, Yo/PCA-1, Ma2/Ta, Amphiphysin, CV2/CRMP5, Recoverin, SOX1/AGNA, Titin, Zic4 and Tr/DNER) and Anti-GAD65 antibodies.

We will use two different methods in parallel for each antibody to maximize diagnostic accuracy and minimize false-positive results. Results will be reported based on a different assay as shown in the Table below.

Anti-neural Antibodies	Method	Report based on
Autoimmune encephalitis antibodies	Cell-based assay and tissue indirect immunofluorescence (TIIF)	Cell-based assay
Paraneoplastic antibodies	Immunoblot and TIIF	Immunoblot
Anti-GAD65 antibodies	ELISA and immunoblot and TIIF	ELISA and Immunoblot

We will analyze each serum/CSF sample using a TIIF assay on composite neural and non-neural mouse tissue substrate developed at the Mayo Clinic in Rochester, Minnesota. Discrepant results between TIIF and immunoblot (i.e. negative TIIF but positive immunoblot) may suggest a false-positive result, and the ordering physician will be contacted to review this. We will be the only Canadian lab with an autoimmune neurologist aiding in test interpretation as it relates to each patient.

Furthermore, TIIF allows us to screen for the following neural antibodies: Anti-GFAP, Anti-mGluR1, Anti-NIF, Anti-Neurochondrin, ANNA-3, PCA-2/Anti-MAP1B, Anti-AP3B2, Anti-PDE10A, Anti-KLHL11, Anti-ITPR1, and Anti-GRAF. For these antibodies, only negative results by TIIF will be reported. If the presence of one of these antibodies is suggested by TIIF, the

ordering physician will be contacted to review the clinical history and discuss send-out testing for confirmation (i.e. to the Mayo Clinic).

Why is it happening?
While paraneoplastic and autoimmune encephalitis testing have traditionally been offered separately both at LHSC and other centres across Canada, the clinical presentations of patients with paraneoplastic and non-paraneoplastic autoimmune encephalitis may overlap substantially; existing approaches may miss diagnoses or cause delays in escalation of immunosuppressive therapy, and ultimately poorer patient outcomes. We have therefore combined this testing to ensure truly comprehensive evaluations of patients with suspected neurological autoimmunity.

What impact will it have?
Autoimmune encephalitis panel and paraneoplastic panel will no longer be offered separately. IgLON5 antibody testing (previously included in the autoimmune encephalitis panel) remains available but will now be offered as an individual test. Ordering health care providers are requested to complete a brief Clinical Questionnaire to be submitted with each patient's serum and/or CSF sample to our laboratory. Details of this comprehensive panel are available on the Laboratory Test Information Guide.

The turnaround time will be reduced from 15 days to 5 days.

Sample Type: Serum and/or CSF
Reference Range: Negative

For additional information, questions or concerns please contact Dr. Liju Yang at 519-685-8500, Ext: 35768 or Dr. Adrian Budhram at 519-685-8500, Ext: 33615.