Laboratory Bulletin

Date: **April 12, 2012**

To: **Alberta Health and Wellness, Medical Officers of Health, Physicians, Alberta MicroNet, Infection Prevention and Control, Laboratory Directors and Managers**

From: **Provincial Laboratory for Public Health (ProvLab)**

Re: **Change in Serological Testing for Lyme disease**

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Key Messages:

Effective **March 23, 2012**, ProvLab will change to a new Health Canada licensed Enzyme Immunoassay (Lyme C6 EIA) that can detect all three genospecies (*B. burgdorferi, afzellii & garinii)* causing Lyme disease. The present EIA is mainly limited to *B.burgdorferi* antibody detection. Consequently the following reporting changes will occur:

If …	then …
the screening EIA result is negative	• a final report will be issued.
the screening EIA is positive or equivocal	• a preliminary report will be issued and the serum will be sent to the National Microbiology Laboratory (NML) for confirmatory testing. • a final report will be issued once the results of the Western Blot confirmatory testing from the NML are completed. • in accordance with the Notifiable Disease regulations, positive confirmed results are also reported to the respective zone Medical Officer of Health and Alberta Health & Wellness.

Note: Travel history is obligatory as the Western Blot assay for *B. garinii* and *B. afzelii* is only performed if travel outside of North America is provided: there is no serologic cross-reactivity, between these three genospecies, by the individual Western Blot assays.

Background:
Lyme disease, a zoonotic infection with almost global distribution, is caused by the three closely related genospecies *Borrelia burgdorferi, afzelii* and *garinii.* All three genospecies co-exist in Europe and Asia, whereas only *B. burgdorferi* is found in Canada and America. The enzyme immunoassay (EIA) currently in use primarily detects antibody to *B. burgdorferi.* In keeping with the recommended two-tiered system of serological testing for Lyme disease by the Public Health Agency of Canada and the Centers for Disease Control, only samples testing positive or equivocal for Lyme disease at the ProvLab are sent to the NML for Western Blot confirmatory testing.

Clinical Information Required:
- Acute illness - provide recent travel history within the preceding 3 months
- Chronic illness - provide a history of residency and duration of stay in those at risk countries (e.g., Europe & Asia), especially if possible exposure was many years ago

Note: Due to the low prevalence of Lyme disease in Canada, a positive or equivocal finding is more likely due to: (1) false positive, (2) previously treated infection, (3) asymptomatic exposure or, (4) acute infection. Consultation with a specialist in Infectious Diseases is strongly recommended, especially if presumptive treatment is being considered prior to the reporting of the confirmatory results from the NML.

For more detailed information on Lyme disease testing (e.g., sample type, transport, result interpretation, etc.), see the Appendix: Laboratory Testing for Lyme Disease in Alberta on the ProvLab website at: http://www.provlab.ab.ca/partner_updates.htm or the ProvLab Guide to Services at: http://www.provlab.ab.ca/guide-to-services.pdf.

Inquiries and feedback may be directed to:
- Dr. Kevin Fonseca, Program Lead at Kevin.Fonseca@albertahealthservices.ca or
- Edmonton Site – Phone: 780-407-7121 (ask for Virologist-on-Call)
- Calgary Site – Phone: 403-944-1200 (ask for Virologist-on-Call)

This bulletin has been reviewed and approved by Dr. Marie Louie, Acting Medical Director, ProvLab