



P 24 Simultaneous determination of the CSF/serum antibody index and CXCL13 cytokine amount with a bead-based Lyme borreliosis assay

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According to the guidelines of the European Federation of Neurology (EFNS), the diagnosis of definite Lyme neuroborreliosis (LNB) requires a typical clinical picture, a lymphocytic pleocytosis in the cerebrospinal fluid (CSF) and the detection of intrathecally produced *Borrelia burgdorferi*-specific antibodies (elevated antibody index [AI]). The assay *recomBead Borrelia* developed by Mikrogen permits a quantitative detection of single *Borrelia*-specific antibodies and is therefore perfectly suited to determine the AI (please refer also to our second poster by Göttner et al., “Additional benefits...”)

Several recent studies proposed the chemokine CXCL13 in CSF as an additional biomarker for acute LNB with a sensitivity between 94 and 96% and a specificity between 96 and 97%. CXCL13 declines during antibiotic therapy and therefore serves as an activity marker, indicating only active infections. As a consequence, the presence of CXCL13 might actually even replace the counting of leukocytes in the CSF in the diagnostic workup of suspected LNB.

To combine CXCL13 levels and AI in one single assay, we incorporated an additional fluorescent bead for CXCL13 detection into our *recomBead Borrelia* routine assay.

A total of 149 CSF/serum pairs from patients with different clinical symptoms, with only one patient definitively fulfilling the criteria of definite LNB as stated above, was tested for CXCL13, and the AI was calculated. The detection limit for CXCL13 was very low, down to 50 pg/ml. CXCL13 was highly elevated only in the patient with definite LNB, while it was below the detection limit or only slightly elevated in all other samples. These preliminary results confirm the high specificity of CXCL13. According to these experiments, CXCL13 appear to be very well suited to be detected with our bead system. In the next step, we will test further CSF samples from patients with definite LNB to confirm the reported sensitivity of this biomarker.