

SUPPLEMENTARY FILE

with

Diagnostic performance of the novel BioPlex Lyme serological assays in European patients with Lyme borreliosis

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SUPPLEMENTARY TABLE 1: Sensitivity of all algorithms in disseminated LB

	Acute (n=7)		Early convalescent (n=11)		Late convalescent (n=60)		All time points combined (n=70)	
	No. true positive (sensitivity %)	95%-CI	No. true positive (sensitivity %)	95%-CI	No. true positive (sensitivity %)	95%-CI	No. true positive (sensitivity %)	95%-CI
Biopl-IgM	4 (57.1)	18.4-90.1	8 (72.7)	39.0-94.0	35 (58.3)	44.9-70.9	42 (60.0)	47.6-71.5
Biopl-IgG	6 (85.7)	42.1-99.6	11 (100)	71.5-100	56 (93.3)	83.8-98.2	66 (94.3)	86.0-98.4
Eur-IgM	3 (42.9)	9.9-81.6	4 (36.4)	10.9-69.2	30 (50.0)	36.8-63.2	35 (50.0)	37.8-62.2
Eur-IgG	6 (85.7)	42.1-99.6	11 (100)	71.5-100	56 (93.3)	83.8-98.2	67 (95.7)	88.0-99.1
Single: Biopl-total	6 (85.7)	42.1-99.6	11 (100)	71.5-100	58 (96.7)	88.5-99.6	68 (97.1)	90.2-99.7
Single: Eur-total	6 (85.7)	42.1-99.6	11 (100)	71.5-100	56 (93.3)	83.8-98.2	67 (95.7)	88.0-99.1
Single: C6	6 (85.7)	42.1-99.6	11 (100)	71.5-100	57 (95.0)	86.1-99.0	67 (95.7)	88.0-99.1
STTT: Biopl/blot	5 (71.4)	29.0-96.3	8 (72.7)	39.0-94.0	48 (80.0)	67.7-89.2	57 (81.4)	70.3-89.7
STTT: Eur/blot	5 (71.4)	29.0-96.3	8 (72.7)	39.0-94.0	48 (80.0)	67.7-89.2	57 (81.4)	70.3-89.7
STTT: C6/blot	5 (71.4)	29.0-96.3	8 (72.7)	39.0-94.0	48 (80.0)	67.7-89.2	57 (81.4)	70.3-89.7
MTTT: Biopl/C6	6 (85.7)	42.1-99.6	11 (100)	71.5-100	56 (93.3)	83.8-98.2	66 (94.3)	86.0-98.4
MTTT: Eur/C6	6 (85.7)	42.1-99.6	11 (100)	71.5-100	54 (90.0)	79.5-96.2	65 (92.9)	84.1-97.6
Biopl-IgG only	6 (85.7)	42.1-99.6	11 (100)	71.5-100	56 (93.3)	83.8-98.2	66 (94.3)	86.0-98.4

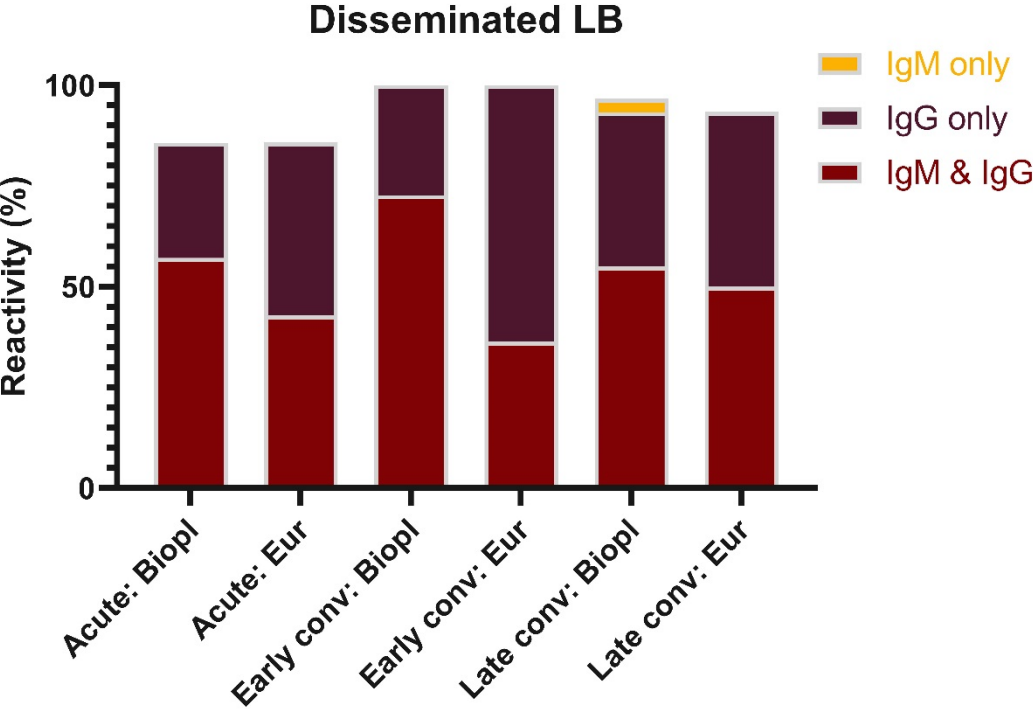
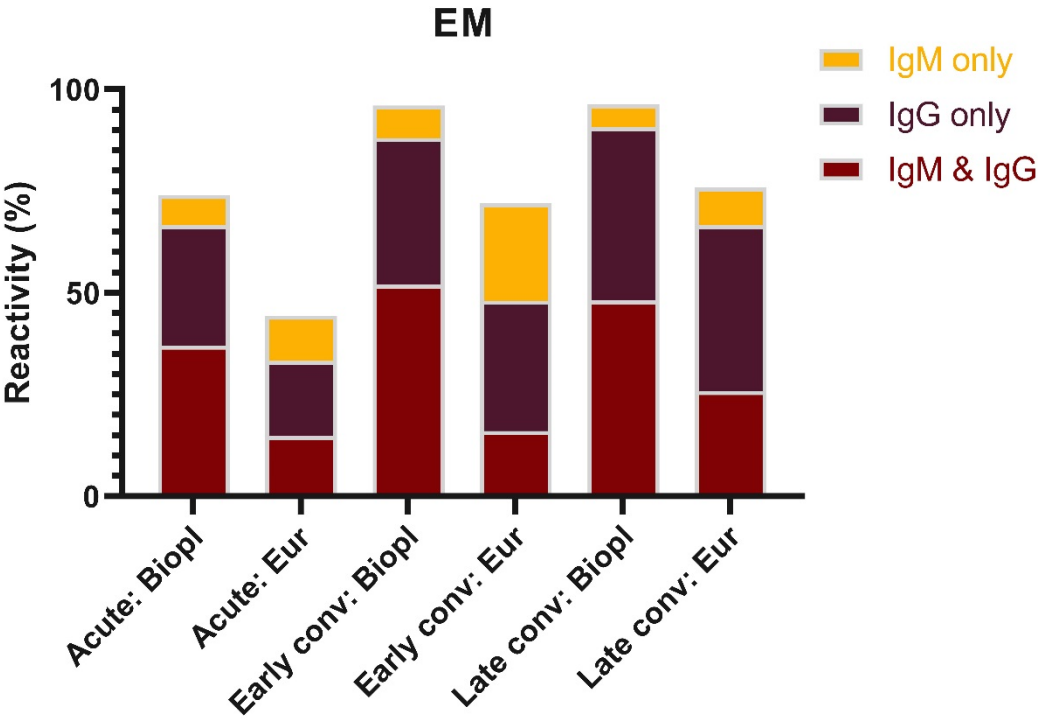
All comparisons between assays within time points/algorithms were $p>0.05$.

A test result was considered to be (true) positive when either the IgM component, IgG component or both were positive. Equivocal first-tier EIA results were interpreted as positive. For the combined sensitivity of all time points, a patient was scored positive if one or more time points were positive.

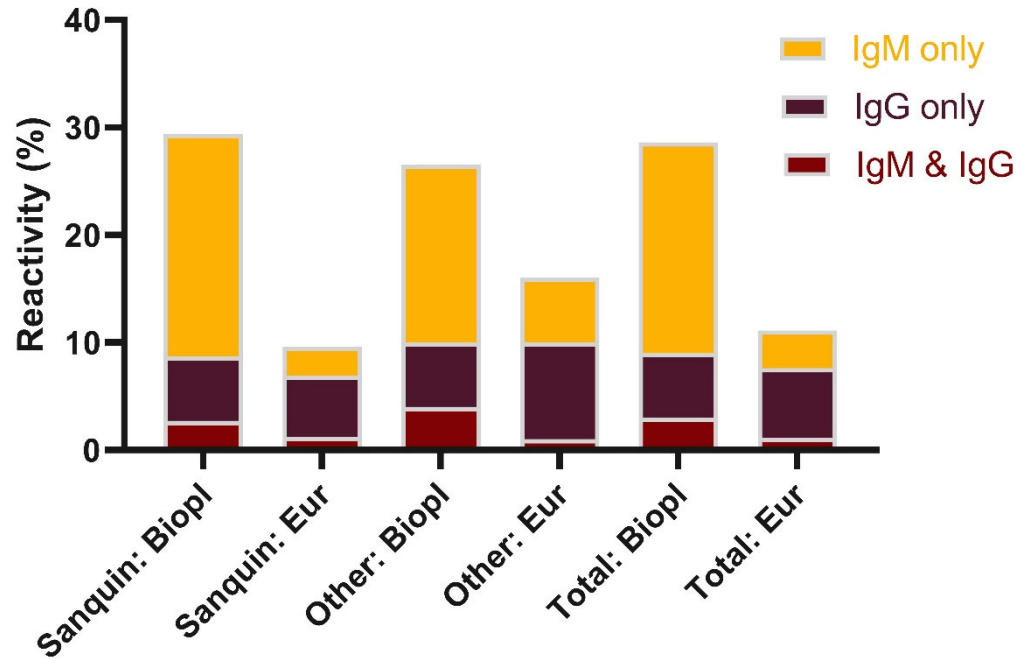
Abbreviations/explanations: single: single-tier; STTT: standard two-tier testing; MTTT: modified two-tier testing; 95%-CI: 95% confidence interval; Biopl: Bioplex; Eur: Euroimmun; C6: C6-ELISA; blot: recomLine immunoblot

SUPPLEMENTARY FIGURE 1a-c: reactivity of BioPlex and Euroimmun assays per component (IgM/IgG)

Reactivity is shown for the BioPlex and Euroimmun assays for each serum group and each time point. The C6-ELISA is not shown as it has no separate IgM/IgG components. Sample sizes are given in the main text and in Tables 2 & 3.

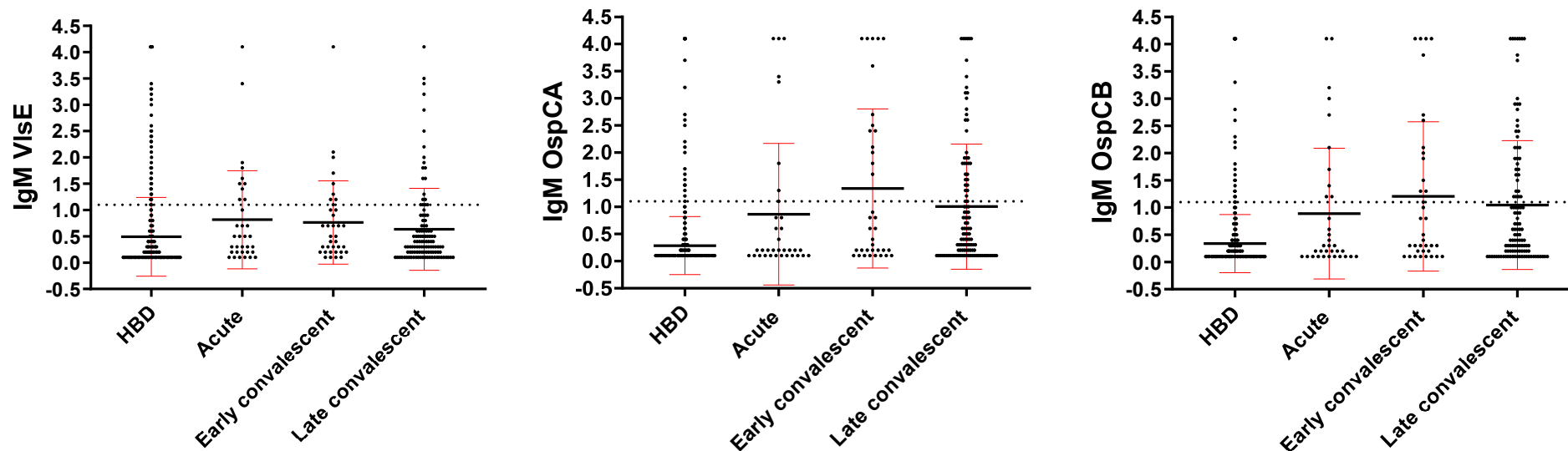


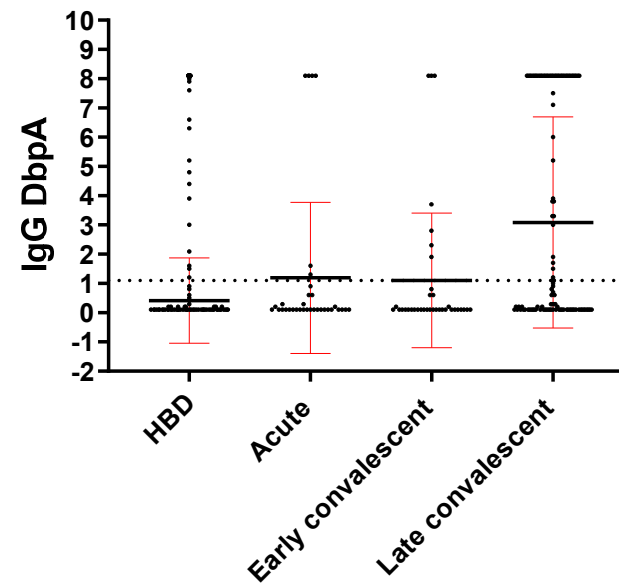
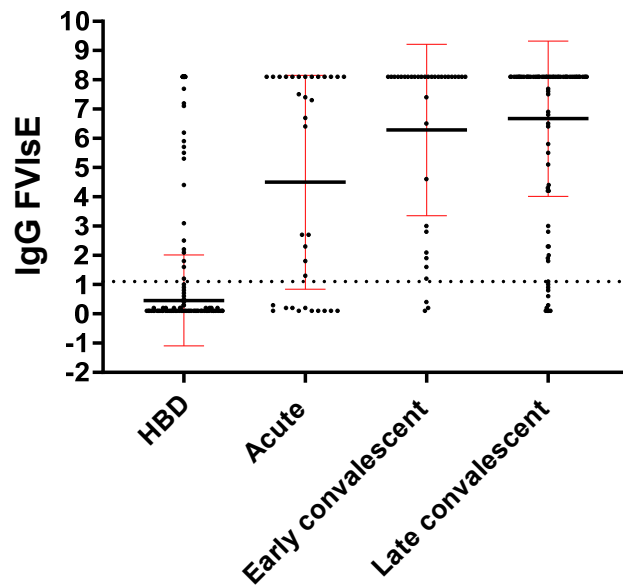
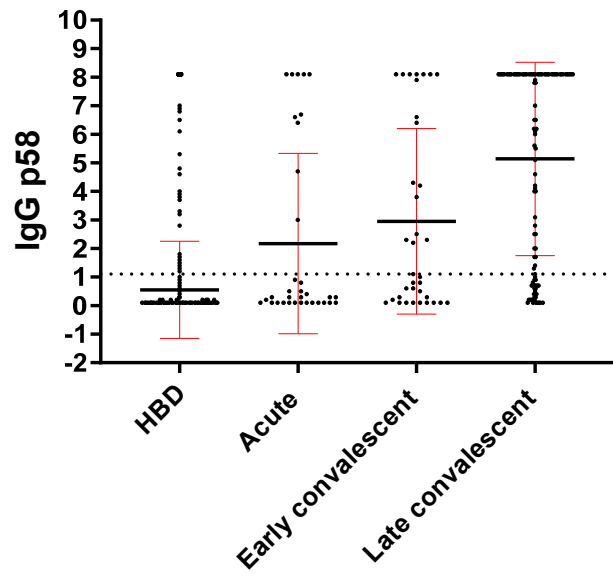
HBDs



SUPPLEMENTARY FIGURE 2a-f: Quantitative results of each BioPlex antigen in HBDs and cases

Quantitative results are shown for each BioPlex antigen in the IgM and IgG component in all HBDs (n=800), acute LB samples (n=34), early convalescent LB samples (n=36) and late convalescent LB samples (n=114). The assay range for IgM antigens is 0.2 to 4.0 and for IgG antigens 0.2 to 8.0. Values ≥ 1.1 are positive; values 0.9-1.0 are equivocal.





SUPPLEMENTARY FIGURE 3: ROC-analysis for BioPlex antigens

This figure shows ROC-curves for all HBDs (n=800) vs. the first serum of each EM patient (n=88). Sera from cases with disseminated LB were excluded, as were subsequent sera from EM patients. Diagonal segments are produced by ties.

