

# Performance evaluation of the new VIDAS Lyme IgM and IgG assays compared to the previous VIDAS Lyme total antibodies assay on fresh prospective sera

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## Objective

Lyme borreliosis (LB) is an infectious disease caused by the spirochete *Borrelia burgdorferi sensu lato* and transmitted through tick bites. Serological methods are the laboratory tools of choice for the medical diagnosis of LB. Currently, the most commonly used methods are the EIA method in combination with the western blot as confirmatory test. Other methods such as PCR are reserved for special cases. A large variety of commercial assays is available for the serological diagnosis of LB. We evaluated the performance of VIDAS Lyme new assays compared to previous VIDAS Lyme assay on fresh prospective samples.

## Materials & Methods

A total of 58 fresh samples were collected for this prospective trial and tested with the first (VIDAS® LYT – Detection of total antibodies) and new (VIDAS® Lyme IgM (LYM) and Lyme IgG (LYG) – Differential diagnosis of Lyme borreliosis) versions of the VIDAS assay (BioMérieux). A Western Blot (WB) IgM and IgG (Euroimmun) assay was used as a confirmatory test for both positive and negative samples.



Erythema migrans after infection with *Borrelia* bacterium in Tiergarten in Berlin

## Results & Discussion

Of the 58 samples, 30 were found positive with VIDAS LYT and 24 with VIDAS LYM or LYG. 24 of the LYT positives and 22 of the LYM/LYG positives were confirmed by WB. Out of 32 negative samples (based on WB status), 26 were negative with VIDAS LYT and 29 with VIDAS LYM or LYG.

Based on these results, the overall sensitivity and specificity of the first and new version of the VIDAS Lyme assay versus WB were calculated and compared. Sensitivity was 92% for LYT and 90% for LYM/LYG. Specificity was 81% for LYT and 93% for LYM/LYG.

Although sensitivity is comparable between both versions of the Lyme assay, specificity is significantly higher with the new version. This improvement is brought by the separate detection of the IgM and IgG antibodies and the new chimeric proteins design based on VISE, DbpA and OspC proteins.

## Conclusions

The outcome of our study made on fresh specimens shows that the new VIDAS Lyme assays provide additional benefits in many aspects. In particular, specificity is increased thanks to an optimized assay design.

***The new VIDAS Lyme IgM and IgG tests are accurate, simple and rapid assays and provide a serological tool that improves the diagnosis of *Borrelia* infections.***

## Literature cited

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## Acknowledgments

We thank Cecile Trinh bioMérieux S.A. ImmunoAssay Unit, Chemin de l'Orme, Marcy L'Etoile, 69280 France for her competent, fast and kindly support.