



## Next-Generation Pathogen Detection Acute and severe infections

 **noscendo**

**DISQVER<sup>®</sup>** 

Systemic bloodstream infections, caused by e.g. peritonitis, pneumonia, after organ transplantation or even sepsis, are associated with high case numbers, high mortality and enormous costs. The DISQVER<sup>®</sup> pathogen test offers a solution to close the gap of existing tests. With an open-ended and hypothesis-free approach, DISQVER<sup>®</sup> with its combination of NGS and innovative bioinformatics enables reliable, efficient and rapid identification of pathogens from patient blood. DISQVER<sup>®</sup> represents a new generation of pathogen diagnostics and enables a completely new perspective in the treatment of bloodstream infections.

### Pathogen test **DISQVER<sup>®</sup>**

Fast and precise pathogen detection is a decisive success factor in the treatment of acute and severe infections. DISQVER<sup>®</sup> detects bacteria, fungi, DNA viruses and parasites from a standard blood sample in parallel, quantitatively and without prior cultivation or prior knowledge of the possible etiology of the infection. Beyond the current possibilities of conventional diagnostics, DISQVER<sup>®</sup> can also reliably detect pathogens which are difficult or impossible to cultivate, regardless of any anti-infective therapy that has already been started – without loss of sensitivity.

DISQVER<sup>®</sup> uses proprietary databases with over 16,000 genomes and relevance evaluates each microbe. This relevance assessment ensures a precise differentiation

between commensals, contaminants and over 1,500 pathogens.

Fast & precise  
pathogen  
detection

DISQVER<sup>®</sup> fields of application:

- a) Pathogen identification, e.g. because previous diagnostics have been negative
- b) Exclusion of an infection, e.g. after transplantations or follow-up controls

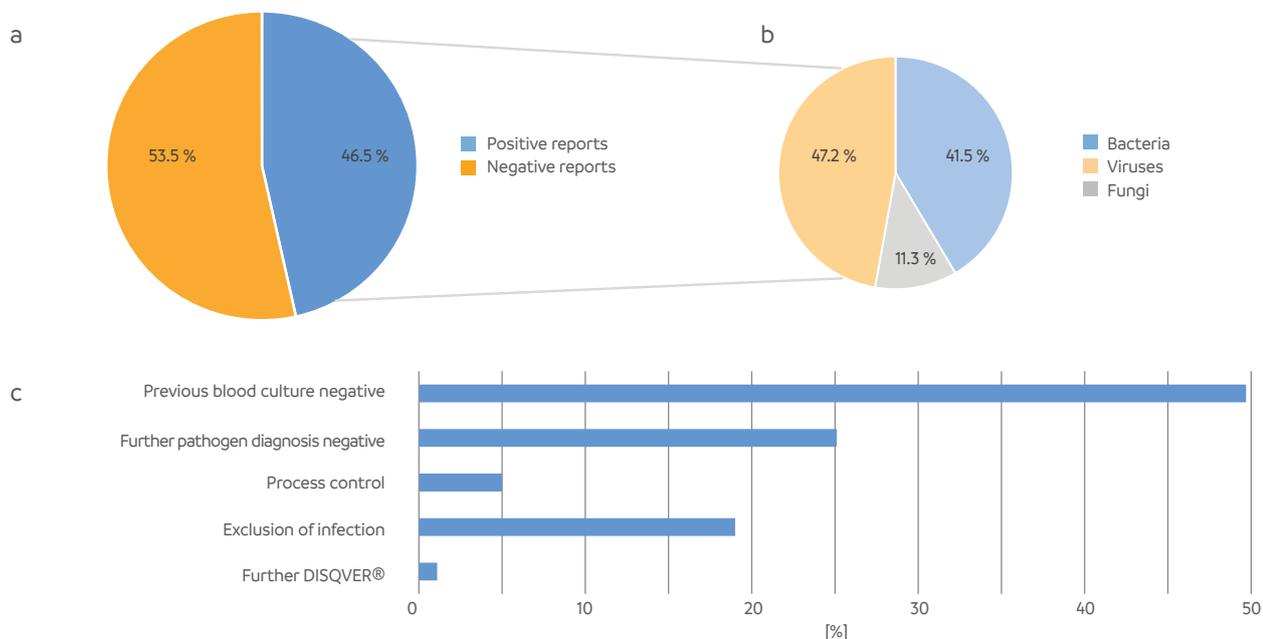


Figure 1: DISQVER® results – acute and severe infections

a) Distribution of positive, negative and subclinical reports, b) Distribution of bacteria, viruses and fungi in samples tested positive, c) Reason for testing

DISQVER® was successfully piloted in 2019. Since its launch, DISQVER® has helped physicians to adequately treat patients with acute and severe infections after organ transplantation, peritonitis and pneumonia, as well as sepsis.

The average analysis time of DISQVER® is 44 hours. The shipping time included in this could be saved in the case of laboratory enabling, thus reducing the analysis time to less than 24 hours.

Analysis time  
less than  
24 hours

Among the intensive care samples, 46.5 % positive reports with clinically relevant pathogens and a total of 53.5 % negative to exclude bloodstream infection were generated (Fig. 1a). Most bloodstream infections detected by DISQVER® are of bacterial origin. However, DISQVER® results suggest a greater involvement of viruses in critical conditions than previously suspected (Fig. 1b). The majority of samples that tested positive showed monomicrobial infection, with DISQVER® suggesting more polymicrobial infections than conventional methods such as blood culture.

Usage of DISQVER® ranges from excluding infections to being the only method that performs positive pathogen identification when other methods fail (Fig. 1c).

## Conclusion

DISQVER® enables rapid, accurate and efficient detection of pathogens in acute and severe infections, allowing anti-infective therapies to be targeted or adapted more efficiently. Independent of an already existing anti-infective therapy, DISQVER® showed a higher positivity than conventional methods.

DISQVER® thus provides an analysis option in the event that all previously available methods fail.

With the help of cell-free DNA as a new biomarker, new sequencing techniques and innovative bioinformatics, DISQVER® reaches a new level in the field of pathogen diagnostics.

In summary, DISQVER® offers an unprecedented opportunity for precise, rapid and comprehensive analysis of bloodstream infections.