

Bosch's Vivalytic platform offering new PCR rapid test for MRSA

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The Vivalytic test MRSA/SA provides a quick diagnosis of methicillin resistance at the point of care

- ▶ As a real-time PCR rapid test at the point of care (POC), the Vivalytic test MRSA/SA can detect two of the most important pathogens associated with hospital-acquired infections.
- ▶ Differentiation as to whether the bacterial strain is methicillin-resistant or methicillin-sensitive promotes targeted therapy.
- ▶ The result is available in under one hour, which makes the test a useful addition for determining cultures, especially in emergency situations.
- ▶ Unnecessary, costly isolation measures that are stressful for patients can be avoided.

Waiblingen – The new Vivalytic test MRSA/SA for Bosch's Vivalytic platform is now available. Bosch Healthcare Solutions has once again expanded the test portfolio of this universal PCR system. The Bosch test, developed in cooperation with partner r-biopharm, detects methicillin-resistant staphylococcus aureus (MRSA), one of the most important pathogens for hospital-acquired infections and therefore for associated complications and mortalities. In under an hour, the Vivalytic test MRSA/SA delivers a reliable result¹ directly at the point of care and is therefore particularly suitable for use in accident and emergency units. Since the result of diagnostics with cultures is only available after one to three days, this PCR test for the point of care is ideal as an additional tool when speed is of the essence. The quick and reliable diagnosis of whether the bacteria strain is methicillin-sensitive (MSSA) or -resistant is also important in emergency situations. Waiting times for operations can, on the one hand, be reduced, while on the other enabling a decision on effective antibiotic treatment on this basis. This ability contributes to preventing contamination, breaking the chain of infection, and avoiding other resistances, which can, in turn, positively impact the treatment procedure and costs. Last but not least, unnecessary isolation measures, which are not only complex and expensive², but also put patients under even more pressure, can be avoided.

MRSA risk

The WHO³ estimates that the mortality rate of patients infected with MRSA is around 50 percent higher compared with patients who have been infected by non-resistant *Staphylococcus aureus* strains. Moreover, the period of hospitalization, morbidity, and the medical expenses increase significantly with an MRSA infection.⁴ In Europe, approximately 149,000 MRSA clinical infections and around 7,000 deaths occur each year.⁵ Prevention and control measures, such as testing for MRSA, are aimed at reducing or avoiding infections in hospital settings.

Vivalytic platform: simple application at the point of care

The advantages of PCR rapid tests administered with the aid of Bosch's Vivalytic platform lie not only in the quick analysis time, but also in the ease of handling: Once the sample has been collected, the swab is inserted into the test cartridge. The cartridge, which holds all reagents necessary for the respective test, is then inserted into the Vivalytic analyser for automated analysis. Handling and utilisation are simple and medical professionals require only minimal training. Along with the new Vivalytic test MRSA/SA, the Vivalytic product portfolio also includes various tests for viral respiratory infections, such as SARS-CoV-2 – also as a pooling variant and as a lollipop test – as well as a multiplex test for sexually transmitted infections (STI).

((Text scope: 3,389 characters, incl. spaces))

Sources

- 1) Instructions for Use Vivalytic MRSA/SA:
Based on the validation study as part of the conformity assessment procedure, the following diagnostic sensitivity and specificity have been ascertained for the Vivalytic test MRSA/SA:
MRSA: sensitivity 93.5% and specificity 97%. (95% confidence interval: sensitivity: 82.1% – 98.63%; specificity: 91.56% – 99.38%)
MSSA: sensitivity 85.96% and specificity 95.12%. (95% confidence interval: sensitivity: 74.21% – 93.74%; specificity: 83.47% – 99.4%).
A high consistency of the test results using the Vivalytic MRSA/SA test was observed in comparison to cultures as the gold standard.
- 2) Hübner et al.: Analysis of MRSA-attributed costs of hospitalized patients in Germany, 2014
- 3) World Health Organization: Health care without avoidable infections: the critical role of infection prevention and control, 2016
- 4) World Health Organization: Antimicrobial resistance: global report on surveillance (GLASS). Geneva; 2014.

- 5) Cassini et al, Attributable deaths and disability-adjusted life-years caused by infections with antibiotic-resistant bacteria in the EU and the European Economic Area in 2015: a population-level modelling analysis, Lancet Infect. Dis. 19:56–66., 2018



YouTube channel of Bosch Healthcare Solutions:
<https://www.youtube.com/channel/UCYQbynaOEzfGV0x5swPTjrg>

Photo material:

(Web resolution only. Request print resolution at bosch-healthcare@pr-hoch-drei.de.)



Image 1: Easily obtained result confirming an MRSA infection: Once the sample has been collected, the swab is inserted into the test cartridge and the cartridge is then introduced into the Vivalytic analyser for automated analysis.

Photo credits: Bosch Healthcare Solutions GmbH



Image 2: In under an hour, the Vivalytic MRSA/SA PCR rapid test delivers a reliable result directly at the point of care and is therefore particularly suitable for use in accident and emergency units.

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Additional information is available online at www.bosch-healthcare.com, www.vivatmo.com, www.bosch-vivalytic.com.

The Bosch Group is a leading global supplier of technology and services. It employs roughly 402,600 associates worldwide (as of December 31, 2021). The company generated sales of 78.7 billion euros in 2021. Its operations are divided into four business sectors: Mobility Solutions, Industrial Technology, Consumer Goods, and Energy and Building Technology. As a leading IoT provider, Bosch offers

innovative solutions for smart homes, Industry 4.0, and connected mobility. Bosch is pursuing a vision of mobility that is sustainable, safe, and exciting. It uses its expertise in sensor technology, software, and services, as well as its own IoT cloud, to offer its customers connected, cross-domain solutions from a single source. The Bosch Group's strategic objective is to facilitate connected living with products and solutions that either contain artificial intelligence (AI) or have been developed or manufactured with its help. Bosch improves quality of life worldwide with products and services that are innovative and spark enthusiasm. In short, Bosch creates technology that is "Invented for life." The Bosch Group comprises Robert Bosch GmbH and its roughly 440 subsidiary and regional companies in some 60 countries. Including sales and service partners, Bosch's global manufacturing, engineering, and sales network covers nearly every country in the world. With its more than 400 locations worldwide, the Bosch Group has been carbon neutral since the first quarter of 2020. The basis for the company's future growth is its innovative strength. At 128 locations across the globe, Bosch employs some 76,100 associates in research and development, of which more than 38,000 are software engineers.

The company was set up in Stuttgart in 1886 by Robert Bosch (1861–1942) as "Workshop for Precision Mechanics and Electrical Engineering." The special ownership structure of Robert Bosch GmbH guarantees the entrepreneurial freedom of the Bosch Group, making it possible for the company to plan over the long term and to undertake significant upfront investments in the safeguarding of its future. Ninety-four percent of the share capital of Robert Bosch GmbH is held by Robert Bosch Stiftung GmbH, a charitable foundation. The remaining shares are held by Robert Bosch GmbH and by a corporation owned by the Bosch family. The majority of voting rights are held by Robert Bosch Industrietreuhand KG, an industrial trust. The entrepreneurial ownership functions are carried out by the trust.

Additional information is available online at www.bosch.com, www.iot.bosch.com, www.bosch-presse.de, <https://twitter.com/BoschPresse>.