



## MRSA PCR Kit, Product Flyer

Interest in any of the products,  
request or order them at Bio-Connect Diagnostics.

Bio-Connect Diagnostics B.V.  
Begonialaan 3a  
6851 TE Huissen  
The Netherlands

T NL +31 (0)26 326 44 60  
F NL +31 (0)26 326 44 61  
E [info@bio-connectdiagnostics.nl](mailto:info@bio-connectdiagnostics.nl)  
W [www.bio-connectdiagnostics.nl](http://www.bio-connectdiagnostics.nl)

T BE +32 (0)2 502 12 53  
F BE +32 (0)2 502 12 77



# MRSA – methicillin resistant *Staphylococcus aureus*

## Antibiotic resistance

### Staphylococci

- / gram-positive or facultative anaerobic organisms
- / may produce multiple exotoxins
- / carried in the anterior nares and skin of 20–30% healthy adults

### *Staphylococcus aureus*

- / approx 10% of *S. aureus* isolates in USA are susceptible to penicillin
- / many strains resistant to penicillin remain susceptible to methicillin

### MRSA

- / strains resistant to methicillin and to  $\beta$ -lactams, including cephalosporins and carbapenems
- / may be susceptible to the newest class of MRSA-active cephalosporins (ceftaroline)
- / carried by 2 per 100 people
- / health-care associated and community associated infections

All data supported by



### Diagnostics

- / **Culture + sensitivity test**
  - easy cultivation on commonly used media
  - time consuming
- / **Molecular diagnostics**
  - rapid detection and control of dissemination
  - identification of carriers

### Disease association

- / **direct tissue invasion** – most common mechanism
  - skin and soft-tissue infections
  - surgical site infections
  - pneumonia, endocarditis, osteomyelitis, septic arthritis
- / **exotoxin production**
  - toxic shock syndrome
  - staphylococcal scalded skin syndrome
  - staphylococcal food poisoning

**/ The PCR kit is designed for methicillin-resistant *Staphylococcus aureus* detection by the real-time Polymerase Chain Reaction (PCR) method.**

The MRSA detection consists in amplification of three specific loci (the *nuc* gene which is specific for *Staphylococcus aureus*, the SCCmec/orfX junction region and the resistance genes *mecA/mecC*) and in measurement of fluorescence increase. The *nuc* gene presence is indicated by the TEX fluorophore fluorescence growth. The SCCmec/orfX junction presence is indicated by the FAM fluorophore fluorescence growth. The resistance gene *mecA/mecC* presence is indicated by the Cy5 fluorophore fluorescence growth. An Internal Standard (IS) is either included in the reaction mix, controlling the possible inhibition of the PCR (ISIN version) or excluded, controlling also the DNA extraction process quality (ISEX version). IS positive amplification is detected in the HEX fluorophore fluorescence channel. The detection kit takes advantage of the "hot start" technology, minimizing non-specific reactions and assuring maximum sensitivity. Ready to Use MasterMix contains uracil-DNA-glycosylase (UDG), eliminating possible contamination of the PCR by amplification products. The kit is designed for *in vitro* diagnostics and provides qualitative detection.

technical specification

Technology	real-time PCR
Type of Analysis	qualitative
Target Sequence	<i>nuc</i> gene, SCCmec/orfX junction, resistance gene <i>mecA/mecC</i>
Specificity	methicillin-resistant <i>Staphylococcus aureus</i> (MRSA)
Sensitivity (LoD)	reaches up to 2.81 ge/ml with the probability of 95% (on NCTC strain 13142)
Extraction/Inhibition Control	PCR inhibition control (ISIN version) PCR inhibition and DNA extraction efficiency control (ISEX version)
Validated Specimen	aspirate, sputum, swab, urine
Storage	-20 ± 5 °C
Validated Extraction Methods	croBEE NA16 Nucleic Acid Extraction System GeneProof PathogenFree DNA Isolation Kit
Validated Instruments	croBEE Real-Time PCR System Applied Biosystems 7500 Real-Time PCR System AriaMx Real-Time PCR System CFX96™/ Dx Real-Time PCR Detection System LineGene 9600 / 9600 Plus Rotor-Gene 3000 / Q
Required Detection Channels	FAM, HEX, Cy5, TEX
Quality Control	In accordance with <b>ISO 13485</b> , each lot of GeneProof PCR Kit is tested against predetermined specifications to ensure consistent product quality.
External Quality Assessment	Regularly tested by <b>QCMD</b> and <b>Instand e.V.</b> External Quality Assessment Panels – results at <a href="http://www.geneproof.com">www.geneproof.com</a>
Certification	CE IVD for <i>in vitro</i> Diagnostic Use

order

Product name	Technology	Cat. No.		
		25 reactions	50 reactions	100 reactions
GeneProof MRSA PCR Kit	real-time PCR	MRSA/ISIN/025	MRSA/ISIN/050	MRSA/ISIN/100
GeneProof MRSA PCR Kit	real-time PCR	MRSA/ISEX/025	MRSA/ISEX/050	MRSA/ISEX/100