



QuickGene Series Application Guide

Genomic DNA Extraction from Methicillin-resistant Staphylococcus aureus (MRSA)

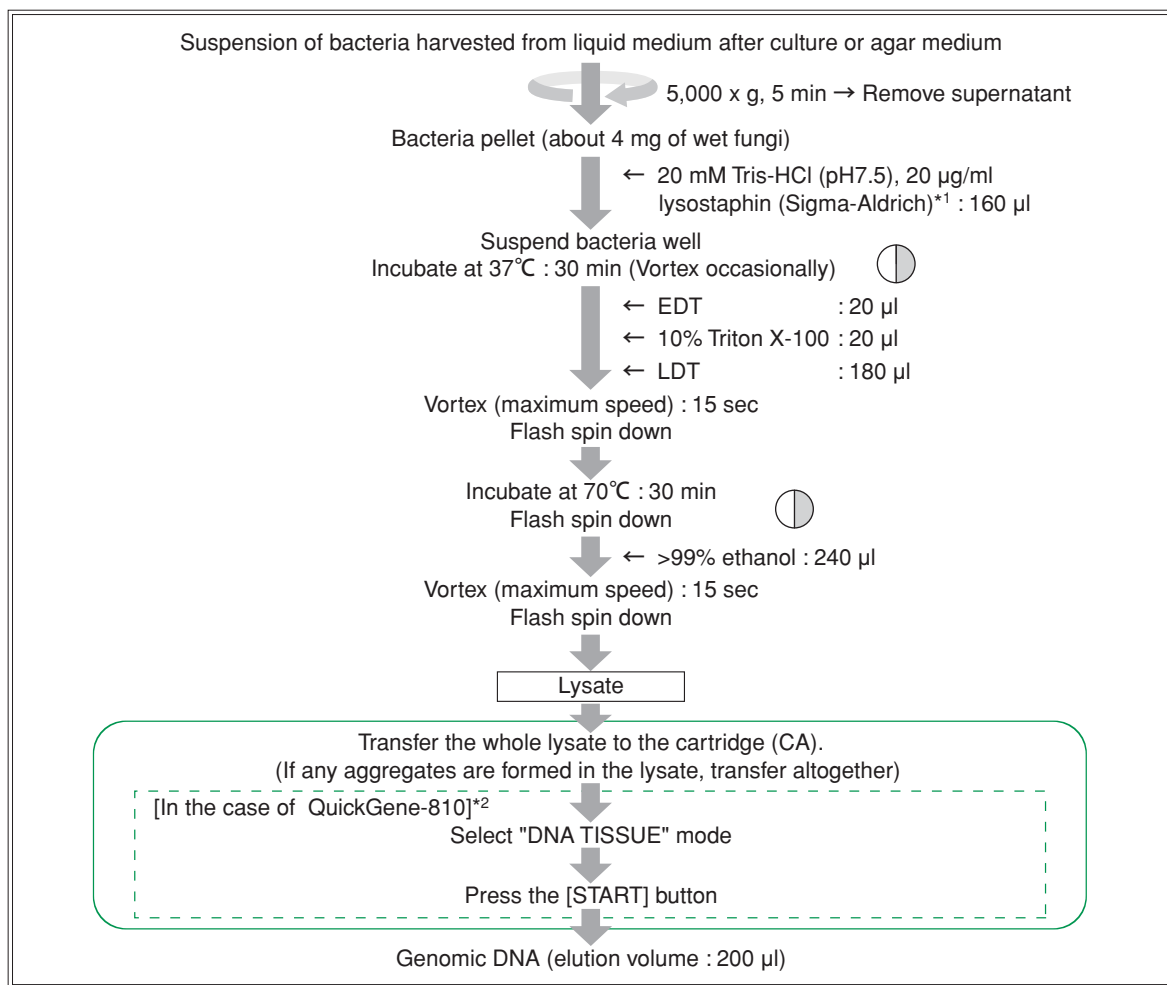
Kit : QuickGene DNA tissue kit S

Model : QuickGene-810 / QuickGene-Mini80

Summary

Enables easy and rapid extraction of genomic DNA from Methicillin-resistant Staphylococcus aureus (MRSA).

● Protocol



*1 : "20 mM Tris-HCl (pH7.5), 20 µg/ml lysostaphin (Sigma-Aldrich)" is not contained in the kit.
Add lysostaphin immediately before use.

*2 : In the case of QuickGene-Mini80, please refer to the Kit Handbook for details.

* Perform extraction within 30 min after lysate preparation.

Results : Genomic DNA extraction from Methicillin-resistant Staphylococcus aureus (MRSA)

Genomic DNA was extracted from standard strain (ATCC strain) of Methicillin-sensitive Staphylococcus aureus (MSSA) and 3 clinical isolates of Methicillin-resistant Staphylococcus aureus (MRSA), using QuickGene system (QuickGene and QuickGene DNA tissue kit S) and Spin column method (A company).

Bacterial strain : Standard strain (ATCC25923) of Methicillin-sensitive Staphylococcus aureus (MSSA)
 : Clinical isolates, No.1~3, of Methicillin-resistant Staphylococcus aureus (MRSA)
 isolated from about 4 mg of each wet fungi

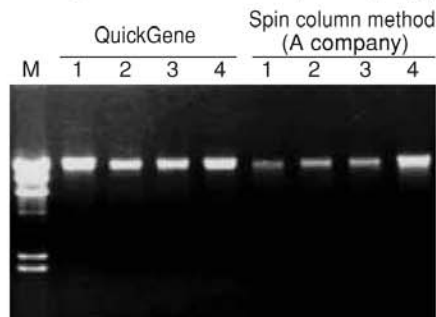
● The yield and purity of genomic DNA

sample	Yield				Purity (A260/280)			
	MSSA	MRSA No.1	MRSA No.2	MRSA No.3	MSSA	MRSA No.1	MRSA No.2	MRSA No.3
QuickGene	16.0 µg	14.4 µg	10.2 µg	10.3 µg	1.76	1.70	1.70	1.76
Spin column method (A company)	2.7 µg	4.6 µg	9.1 µg	12.5 µg	1.80	1.76	1.73	1.95

The use of QuickGene system enables extraction of high-purity genomic DNA of MSSA and MRSA with little contamination of protein in better reproducibility and yield than Spin column method (A company).

● Electrophoresis of genomic DNA

Electrophoresis was performed with genomic DNA extracted from bacteria, MSSA and MRSA, using QuickGene system and Spin column method (A company).



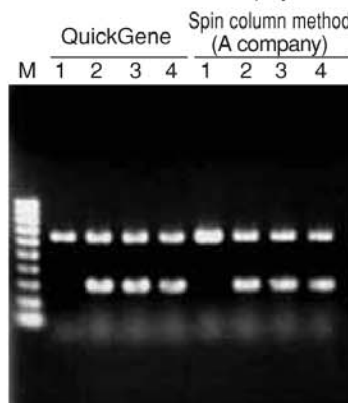
Electrophoresis condition : 1.5% agarose / 1 x TAE

M : λ -Hind III
 1 : MSSA ATCC strain
 2 : MRSA No.1
 3 : MRSA No.2
 4 : MRSA No.3

No decomposition was detected for extracted genomic DNA.

● PCR

For genomic DNA extracted using QuickGene system and Spin column method (A company), *FemA* gene of Staphylococcus aureus and *mecA* gene of MRSA were detected by PCR method [Jonas, D. et al. 「Rapid PCR based Identification of Methicillin resistant Staphylococcus aureus from Screening Swabs」 J. Clin. Microbiol. 2002 ; 40, 1821-1823.].



Electrophoresis condition : 2% agarose / 1 x TAE

M : 100 bp DNA Ladder
 1 : MSSA ATT strain
 2 : MRSA No.1
 3 : MRSA No.2
 4 : MRSA No.3

Only *femB* for MSSA (ATCC standard strain) and both of *femB* and *mecA* for MRSA were detected.

* Trademark and exclusion item

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