Supplemental Table S1. Novel PCR primers used in the study to characterize novel SCC*mec*-SCC elements.

Gene or region amplified	Primer pair no.	Primer name	Nucleotide sequence (5'-3')	Nucleotide coordinates
J1 SCC*mec* IIE to the end of the *ccrAB4*-carrying element	1	J1_IIE_F3	CAAGTTATCGGATAATGAA	184-166[a]
		Contig 101 R2	GCCAAGCAATTATCATTATG	4636-4617[b]
	2	Contig 101 F2	CCTCGTCTTGAATTTCTTTC	4598-4617[b]
		ccrA4R5	CAATATCGTTGAACAATCAC	7205-7186[b]
	3	ccrA4F5	CTTCATTCCTTTCAGGAGTT	7159-7178[b]
		M1_R2	AACATGCTTAACGTGAAGTG	9560-9541[b]
	4	M1_F2	TAGGAGCACACTTACACAAG	9498-9517[b]
		M1_R4	CAGCGTATCGTTTTATACTG	13933-13914[b]
J1 SCC*mec* IVc/IVE to within adjacent *ccrAB4*-carrying element	5	J1_IVc_F2	GACAGTATTCCAACAGTCAA	84-65[c]
		Contig 101 R2	GCCAAGCAATTATCATTATG	4636-4617[b]
J1 SCC*mec* IVb/IVF to within adjacent *ccrAB4*-carrying element	6	J1_IVb_F2	ACTTAAGTAGTAGCTAACAG	172-153[d]
		Contig 101 R2	GCCAAGCAATTATCATTATG	4636-4617[b]
J1 SCC*mec* IVg to within adjacent *ccrAB4*-carrying element	7	J1_IVg_F1	CGTGATAGCGACACAATAC	133-115[e]
		Contig 101 R2	GCCAAGCAATTATCATTATG	4636-4617[b]

[a]Nucleotide coordinates based on the nucleotide sequence of SCC*mec* IIE (GenBank accession number AJ810120.1).

[b]Nucleotide coordinates based on the nucleotide sequence of SCC_{M1} of AR13.1/3330.2 (HE858191).

[c] Nucleotide coordinates based on the nucleotide sequence of SCC*mec* IVc (AB096217.1).

[d]Nucleotide coordinates based on the nucleotide sequence of from SCC*mec* IVb (AB063173.1).

[e] Nucleotide coordinates based on the nucleotide sequence of SCC*mec* IVg (DQ106887.1).

Supplemental Table S2. The main characteristics of the SCC*mec* types and subtypes investigated during the present study[a]

SCC*mec* type	*ccr* type	*mec* class	Major characteristics of J regions[b]			Reference
			J1	J2	J3	
I	1	B	*pls*	SCC*mec* I specific J2 region	*dcs*	(1, 4, 6)
I – *pls*	1	B	Lacks *pls*	ND	*dcs*	(6)
Ia			*pls*	SCC*mec* I specific J2 region	pUB110 (*aadD*) & *dcs*	(1, 4)
II			*kdp*	Tn554 (*erm*(A) & *spc*)	pUB110 & *dcs*	(6)
IIA	2	A.4[c]	SCC*mec* IVb specific J1 region	Tn554	pUB110 & *dcs*	(6)
IIB	2	A	SCC*mec* IVb specific J1 region	Lacks Tn554	pUB110 & *dcs*	(6)
IIC	2	A.3[d]	SCC*mec* IVb specific J1 region	Tn554, lacks ORFs between Tn554 & *mec* complex in SCC*mec* II	pUB110 & *dcs*	(6)
IID	2	A.4[c]	SCC*mec* IVb specific J1 region	Tn554	*dcs*	(6)
IIE[e]	2	A.3[d]	SCC*mec* IVb specific J1 region	Tn554; lacks ORFs between Tn554 & *mec* complex	*dcs*	(6)
III & SCC*Hg*	3	A	SCC*mec* III*Hg*-specific J1 region	ΨTn554	pT181 (*tet*(K)) & SCC*Hg* with	(1, 5)

SCC*mec* type	*ccr* type	*mec* class	Major characteristics of J regions[b]			Reference
			J1	J2	J3	
					p1258 (*mer*), Tn554 & *ccrC*	
III & SCC *Hg* – p1258/Tn554	3	A	ND	ND	pT181 & SCC*Hg* with p1258, Tn554 & *ccrC* but lacking ORFs between p1258 & Tn554	(6)
IVA	2	B	SCC*mec* IVc-specific J1 region	No J2 region	pUB110 & *dcs*	(1)
IVa	2	B	SCC*mec* IVa-specific J1 region	No J2 region	*dcs*	(1, 3)
IVc	2	B	SCC*mec* IVc-specific J1 region	No J2 region	*dcs*	(1)
IVE	2	B	SCC*mec* IVc-specific J1 region	ND	Lacks *dcs*	(6)
IVF	2	B	SCC*mec* IVb-specific J1 region	ND	Lacks *dcs*	(6)
IVg	2	B	SCC*mec* IVg-specific J1 region	No J2 region	*dcs*	(1, 2)

[a] This table was adapted from the Guidelines on the Classification of SCC*mec* elements (1). For the main characteristics of additional SCC*mec* types and subtypes not investigated in the present study see reference (1) or http://www.sccmec.org/Pages/SCC_HomeEN.html.
[b] The antimicrobial resistance genes carried on plasmids and transposons integrated within the SCC*mec* elements are written in parenthesis after the first time the relevant plasmid or transposon name is listed.
[c] class A.4 *mec* complex differs from class A *mec* due to the presence of IS1182 within *mecI* (6).

[d] class A.3 *mec* complex differs from class A *mec* due to the presence of IS1182 within *mecI* and deletion of the 3′ end of *mec* regulatory gene *mecI* (6).
ND, not determined.

REFERENES

(1) **International Working Group on the Classification of Staphylococcal Cassette Chromosome Elements (IWG-SCC).** 2009. Classification of staphylococcal cassette chromosome *mec* (SCC*mec*): guidelines for reporting novel SCC*mec* elements. Antimicrob. Agents Chemother. **53:**4961-4967.

(2) **Kwon, N. H., K. T. Park, J. S. Moon, W. K. Jung, S. H. Kim, J. M. Kim, S. K. Hong, H. C. Koo, Y. S. Joo, and Y. H. Park.** 2005. Staphylococcal cassette chromosome mec (SCC*mec*) characterization and molecular analysis for methicillin-resistant *Staphylococcus aureus* and novel SCC*mec* subtype IVg isolated from bovine milk in Korea. J. Antimicrob. Chemother. **56:**624-632.

(3) **Ma, X. X., T. Ito, C. Tiensasitorn, M. Jamklang, P. Chongtrakool, S. Boyle-Vavra, R. S. Daum, and K. Hiramatsu.** 2002. Novel type of staphylococcal cassette chromosome *mec* identified in community-acquired methicillin-resistant *Staphylococcus aureus* strains. Antimicrob. Agents Chemother. **46:**1147-1152.

(4) **Oliveira, D. C., A. Tomasz, and H. de Lencastre.** 2001. The evolution of pandemic clones of methicillin-resistant *Staphylococcus aureus*: identification of two ancestral genetic backgrounds and the associated *mec* elements. Microb. Drug Resist. **7:**349-361.

(5) **Oliveira, D. C., and H. de Lencastre.** 2002. Multiplex PCR strategy for rapid identification of structural types and variants of the *mec* element in methicillin-resistant *Staphylococcus aureus*. Antimicrob. Agents Chemother. **46:**2155-2161.

(6) **Shore, A., A. S. Rossney, C. T. Keane, M. C. Enright, and D. C. Coleman.** 2005. Seven novel variants of the staphylococcal chromosomal cassette *mec* in methicillin-resistant *Staphylococcus aureus* isolates from Ireland. Antimicrob. Agents Chemother. **49:**2070-2083.