

Supplementary material

**Table S1.** Clinical characteristics of the *S. lugdunensis* isolates included in the study.

Isolate	Origin <sup>a</sup>	Sex <sup>b</sup>	Age	Service	Hospital <sup>c</sup>
C10342	Blood	M	-	Infectious disease service	HSP
C10108	Blood	M	55	Cardiology	HRV
C10107	Blood	M	82	Internal Medicine/Traumatology	HRV
C10109	Blood	M	51	Emergency service	HRV
C9143	Blood	F	81	Emergency service	HSP
C9142	Blood	F	34	Emergency service	HSP
C9912	Blood	M	82	Emergency service	HSP
C9144	Blood	M	69	Emergency service	HSP
C9151	Catheter	M	57	Nephrology	HSP
C9148	Catheter	M	69	Nephrology	HSP
C9147	Catheter	M	53	Nephrology	HSP
C9161	Catheter	M	69	Nephrology	HSP
C9954	Catheter	M	57	Nephrology	HSP
C9982	Catheter	M	74	Nephrology	HSP
X700	Catheter	M	51	Nephrology	HSP
C9145	Catheter	F	73	Nephrology	HSP
X312	Catheter	M	57	Nephrology	HSP
X536	Catheter	F	75	Nephrology	HSP
C10341	Catheter	M	74	Nephrology	HSP
X313	Catheter	F	45	Home hospitalization	HSP
C9146	Catheter	M	54	Nephrology	HSP
C9925	Epidemiological	F	66	Internal Medicine/Traumatology	HRV
C10513	Genital Exudate	F	39	Primary care	HSP
C9149	Genital Exudate	F	41	Gynaecology	HSP
C9150	Genital Exudate	M	25	Primary care	HSP
X314	Genital Exudate	F	29	Gynaecology	HSP
C9343	SSTI	F	2	Emergency service	HSP
X463	SSTI	M	70	General Surgery	HRV
C10052	SSTI	F	93	Primary care	HSP
C10320	SSTI	F	58	Gynaecology	HSP
C9896	SSTI	M	76	Traumatology	HSP
C10511	SSTI	F	43	Gynaecology	HSP
C9894	SSTI	M	55	Traumatology	HSP
C10343	SSTI	M	50	Angiology and vascular surgery	HSP
C9342	SSTI	F	49	Primary care	HSP
C9895	SSTI	F	89	Internal Medicine	HSP
C10042	SSTI	F	38	Gynaecology	HSP
C10248	SSTI	F	46	Gynaecology	HSP
C10510	SSTI	M	40	Primary care	HSP
X462	SSTI	M	43	Emergency service	HRV
C9890	SSTI	M	67	Primary care	HSP
C10053	SSTI	F	24	Primary care	HSP

C9892	SSTI	F	51	Primary care	HSP
C9893	SSTI	M	72	Primary care	HSP
C9897	SSTI	M	72	Nephrology	HSP
C10112	SSTI	M	73	Primary care	HSP
C9891	SSTI	M	73	Emergency service	HSP
C9927	SSTI	F	54	Traumatology	HRV
C10113	SSTI	F	31	Emergency service	HSP
X508	Urine	M	89	Primary care	HSP
C10247	Urine	F	36	Primary care	HSP
C9980	Urine	F	81	Primary care	HSP
C9981	Urine	F	26	Primary care	HSP
C9889	Urine	M	76	Emergency service	HSP
C9159	Urine	M	89	Emergency service	HRV
C9911	Urine	F	25	General surgery	HSP

<sup>a</sup>Origin: SSTI: skin and soft tissue infection.

<sup>b</sup>Sex: M, male; F, female.

<sup>c</sup>Hospital: HSP, San Pedro Hospital; HRV, Royo Villanova Hospital.

**Table S2.** Characteristics of the 37 indicator bacteria used in this study for the screening of antimicrobial activity production in the collection of 56 *S. lugdunensis* isolates.

Specie (no of strains)	Strain	Origin	Relevant Antimicrobial Resistance Phenotype/Genotype
<i>S. aureus</i> (4)	C1570	Human	Methicillin/ <i>mecA</i> <sup>a</sup>
	C7246	Human	Methicillin/ <i>mecC</i> <sup>a</sup>
	C5313	Human	Methicillin/ <i>mecA</i>
	ATCC29213 (C411)		
<i>S. delphini</i> (1)	C9459	Wild animal	
<i>S. pseudintermedius</i> (12)	C2381	Pet	Methicillin/ <i>mecA</i>
	C3930	Pet	Methicillin/ <i>mecA</i>
	C2382	Pet	Methicillin/ <i>mecA</i>
	C8187	Human	MDR
	C2915	Human	
	C2912	Pet	
	C8189	Human	
	C3917	Human	
	C8188	Human	
	C8368	Human	
	C3007	Pet	
	C3468	Pet	
<i>S. epidermidis</i> (1)	C2663	Human	Methicillin/ <i>mecA</i> and Linezolid
<i>S. haemolyticus</i> (1)	C2709	Human	Linezolid
<i>S. lugdunensis</i> (6)	C9927	Human	
	C9981	Human	
	C9159	Human	
	C10107	Human	
	C9954	Human	
	C9980	Human	
<i>S. sciuri</i> (1)	C9780	Wild animal	
<i>Enterococcus casseliflavus</i> (1)	C1232		
<i>E. durans</i> (1)	C1433		Vancomycin/ <i>vanA</i>
<i>E. faecalis</i> (1)	C3735		Vancomycin/ <i>vanB2</i>
<i>E. faecalis</i> (1)	ATCC29212 (C410)		
<i>E. faecium</i> (1)	C2321		Vancomycin/ <i>vanA</i>
<i>E. gallinarum</i> (1)	C2310		
<i>E. hirae</i> (1)	C1436		Vancomycin/ <i>vanA</i>
<i>Listeria monocytogenes</i> (1)	CECT4032 (C137)		
<i>Micrococcus luteus</i>	C157		
<i>Escherichia coli</i> (1)	ATCC25922 (C408)		
<i>Pseudomonas aeruginosa</i> (1)	C3282		

<sup>a</sup>The C1570 isolate belonged to ST398 and the C7246 isolates belonged to ST1945.

**Table S3.** Antimicrobial activity profile of the 23 *S. lugdunensis* isolates characterized as antimicrobial producers against the 37 indicator bacteria.

[illegible]

	<b>C10107</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<b>C9954</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	<b>C9980</b>	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>S.sciuri</i>	<b>C9780</b>	2	2	0	2	2	2	0	2	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0
<i>Enterococcus . casseliflavus</i>	<b>C1232</b>	0	0	0	2	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>E. durans vanA</i>	<b>C1433</b>	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>E. faecalis vanB2</i>	<b>C3735</b>	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>E. faecalis</i>	<b>C410</b>	2	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
<i>E.faecium vanA</i>	<b>C2321</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>E. gallinarum</i>	<b>C2310</b>	2	2	0	1	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>E. hirae vanA</i>	<b>C1436</b>	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Listeria monocytogenes</i>	<b>C137</b>	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
<i>Micrococcus luteus</i>	<b>C157</b>	4	2	2	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Escherichia coli</i>	<b>C408</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>Pseudomonas aeruginosa</i>	<b>C3282</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

<sup>a</sup>The numbers indicate the size of the inhibition halo against each indicator bacteria: 4, halo>10mm; 3, 9>halo>6 mm; 2, 5>halo>3, 1, halo<3; 0, no halo.

<sup>b</sup>Categories of antimicrobial activity: **InterA**, Interespecific Activity (antimicrobial activity against different groups of bacteria belonging to different genera, in addition to staphylococci); **IntraA**, Intraespecific Activity (antimicrobial activity against different species of staphylococci, but not against other genera); **RA**, Reduced Activity (antimicrobial activity against one bacterial group).

<sup>c</sup>Abbreviations: MR, methicillin resistant; MS, methicillin susceptible; CoPS, coagulase-positive *Staphylococcus*; CoNS, coagulase-negative *Staphylococcus*; SA: *S. aureus*; SP: *S. pseudintermedius*.

<sup>d</sup>UR: University of La Rioja.