

Table S1. Epidemiological characteristics of ceftaroline non-susceptible isolates.

Strains	Origin	MIC (mg/L)	PFGE pulsotype	Spa-typing	MLST (CC)
CMRSA-AN1	Ancona	2	A	t041	ST228 (CC5)
CMRSA-AN2	Ancona	4	B	t041	ST228 (CC5)
CMRSA-AN3	Ancona	2	C	t18014	ST22 (CC22)
CMRSA-AN4	Ancona	4	A	t041	ST228 (CC5)
CMRSA-AN5	Ancona	2	A	t041	ST228 (CC5)
CMRSA-AN6	Ancona	4	D	t041	ST228 (CC5)
CMRSA-AN7	Ancona	4	D	t041	ST228 (CC5)
CMRSA-AN8	Ancona	2	E	t041	ST228 (CC5)
CMRSA-AN9	Ancona	4	F	t041	ST228 (CC5)
CMRSA-AN10	Ancona	2	B	t041	ST228 (CC5)
CMRSA-AN11	Ancona	4	F	t041	ST228 (CC5)
CMRSA-AN12	Ancona	2	G	t022	ST22 (CC22)
CMRSA-FB1	Fabriano	2	B	t041	ST228 (CC5)
CMRSA-FB2	Fabriano	4	B	t041	ST228 (CC5)

Table S2. Antibiotics resistance genes and virulence factors of ceftaroline non-susceptible MRSA.

Strain	Spa-type	MLST	Antibiotics resistance genes				Disinfectants resistance genes	Virulence factors
			β -lactams	MLS _B	Aminoglycoside	Chloramphenicol		
CMRSA-AN3	t18014	ST22	<i>mecA, blaZ</i>	<i>erm(C)</i>	-	<i>catpC221</i>	-	<i>sak, scn, aur, hlgA, hlgB, hlgC, seo, sec, seg, sei, sem, sen, seu</i>
CMRSA-AN5	t041	ST228	<i>mecA</i>	<i>erm(A)</i>	<i>aac(6')-aph(2''), ant(6)-Ia, aph(3')-III, ant(9)-Ia</i>	-	-	<i>sak, scn, aur, splA, splB, hlgA, hlgB, hlgC, sea, seo</i>
CMRSA-AN6	t041	ST228	<i>blaZ, mecA</i>	<i>erm(A)</i>	<i>aac(6')-aph(2''), ant(6)-Ia, aph(3')-III, ant(9)-Ia</i>	-	<i>qacA, qacG</i>	<i>sak, scn, aur, splA, splB, hlgA, hlgB, hlgC, sea, seo, sec, seg, sei, sem, sen, seu, lukD, Luke</i>
CMRSA-AN8	t041	ST228	<i>blaZ, mecA</i>	<i>erm(A)</i>	<i>aac(6')-aph(2''), ant(6)-Ia, aph(3')-III, ant(9)-Ia</i>	<i>catpC221</i>	<i>qacA</i>	<i>sak, scn, aur, splA, splB, hlgA, hlgB, hlgC, sea, seo</i>
CMRSA-AN9	t041	ST228	<i>blaZ, mecA</i>	<i>erm(A)</i>	<i>aac(6')-aph(2''), ant(6)-Ia, aph(3')-III, ant(9)-Ia</i>	-	<i>qacA</i>	<i>sak, scn, aur, splA, splB, hlgA, hlgB, hlgC, sea, seo</i>
CMRSA-AN12	t022	ST22	<i>mecA, blaZ</i>	<i>erm(C)</i>	-	-	-	<i>sak, scn, aur, hlgA, hlgB, hlgC, seo, sec, seg, sei, sem, sen, seu</i>
CMRSA-FB1	t041	ST228	<i>mecA, blaZ</i>	<i>erm(A)</i>	<i>aac(6')-aph(2''), ant(6)-Ia, aph(3')-III</i>	-	-	<i>sak, scn, aur, splA, splB, hlgA, hlgB, hlgC, sea, seo</i>