Table S1. Meropenem zone diameters of CP-CRPA isolates tested negative by mCIM.

Specimen ID	mCIM result	Meropenem zone diameter (mm)	Carbapenemase genotype by WGS
S01102	Negative	6	*bla*$_{\text{VIM-2}}$
S01095	Negative	6	*bla*$_{\text{VIM-2}}$
S01573-C	Negative	6	*bla*$_{\text{VIM-2}}$
S01616	Negative	6	*bla*$_{\text{IMP-1}}$
S01633	Negative	6	*bla*$_{\text{VIM-2}}$
S01634	Negative	6	*bla*$_{\text{VIM-2}}$
S01725	Negative	6	*bla*$_{\text{VIM-2}}$
S01835-B	Negative	6	*bla*$_{\text{GES-5}}$
S01865	Negative	6	*bla*$_{\text{IMP-1}}$
S01875-A	Negative	6	*bla*$_{\text{IMP-7}}$
S01897	Negative	6	*bla*$_{\text{VIM-2}}$
S02042	Negative	6	*bla*$_{\text{VIM-2}}$
S02101	Negative	6	*bla*$_{\text{VIM-2}}$
S02245	Negative	6	*bla*$_{\text{VIM-2}}$
S02278-B	Negative	6	*bla*$_{\text{VIM-2}}$

Table S2. Quality control isolates for the two lots of NG-Test CARBA 5 test kits used in our study.

Specimen ID	Species	Genotype	CARBA 5 Lot Numbers	CARBA 5 Expiry	Test Lines Present [b]					
					C(ontrol)	N(DM)	I(MP)	V(IM)	O(XA)	K(PC)
C00505 [a]	*Klebsiella pneumoniae*	OXA-48	220204-01-A 220421-01-A	2023-10 2024-03	+				+	
C00660	*Escherichia coli*	NDM	220204-01-A 220421-01-A	2023-10 2024-03	+	+				
C00855	*Klebsiella pneumoniae*	KPC	220204-01-A 220421-01-A	2023-10 2024-03	+					+
C00714	*Enterobacter cloacae*	IMP	220204-01-A 220421-01-A	2023-10 2024-03	+		+			
C00733	*Pseudomonas aeruginosa*	VIM	220204-01-A 220421-01-A	2023-10 2024-03	+			+		
ATCC 25922	*Escherichia coli*	Negative	220204-01-A 220421-01-A	2023-10 2024-03	+					

[a] Internal controls, unless a specific reference strain is specified.

[b] '+' = test line present.

Table S3. Quality control isolates for Xpert Carba-R.

Specimen ID	Species	Genotype	Xpert Carba-R Lot Number	Expiry	Xpert Carba-R Result [a]					Remarks
					OXA-48	NDM	KPC	IMP	VIM	
C00505	*Klebsiella pneumoniae*	OXA-48	1000367402	20/8/2023	+	ND	ND	ND	ND	Positive control 1 (comprised of OXA-48, NDM and KPC)
C00660	*Escherichia coli*	NDM	1000367402	20/8/2023	ND	+	ND	ND	ND	Positive control 1 (comprised of OXA-48, NDM and KPC)
C00855	*Klebsiella pneumoniae*	KPC	1000367402	20/8/2023	ND	ND	+	ND	ND	Positive control 1 (comprised of OXA-48, NDM and KPC)
C00714	*Enterobacter cloacae*	IMP	1000367402	20/8/2023	ND	ND	ND	+	ND	Positive control 2 (comprised of IMP and VIM)
C00733	*Pseudomonas aeruginosa*	VIM	1000367402	20/8/2023	ND	ND	ND	ND	+	Positive control 2 (comprised of IMP and VIM)
ATCC 25922	*Escherichia coli*	Negative	1000367402	20/8/2023	ND	ND	ND	ND	ND	Negative control

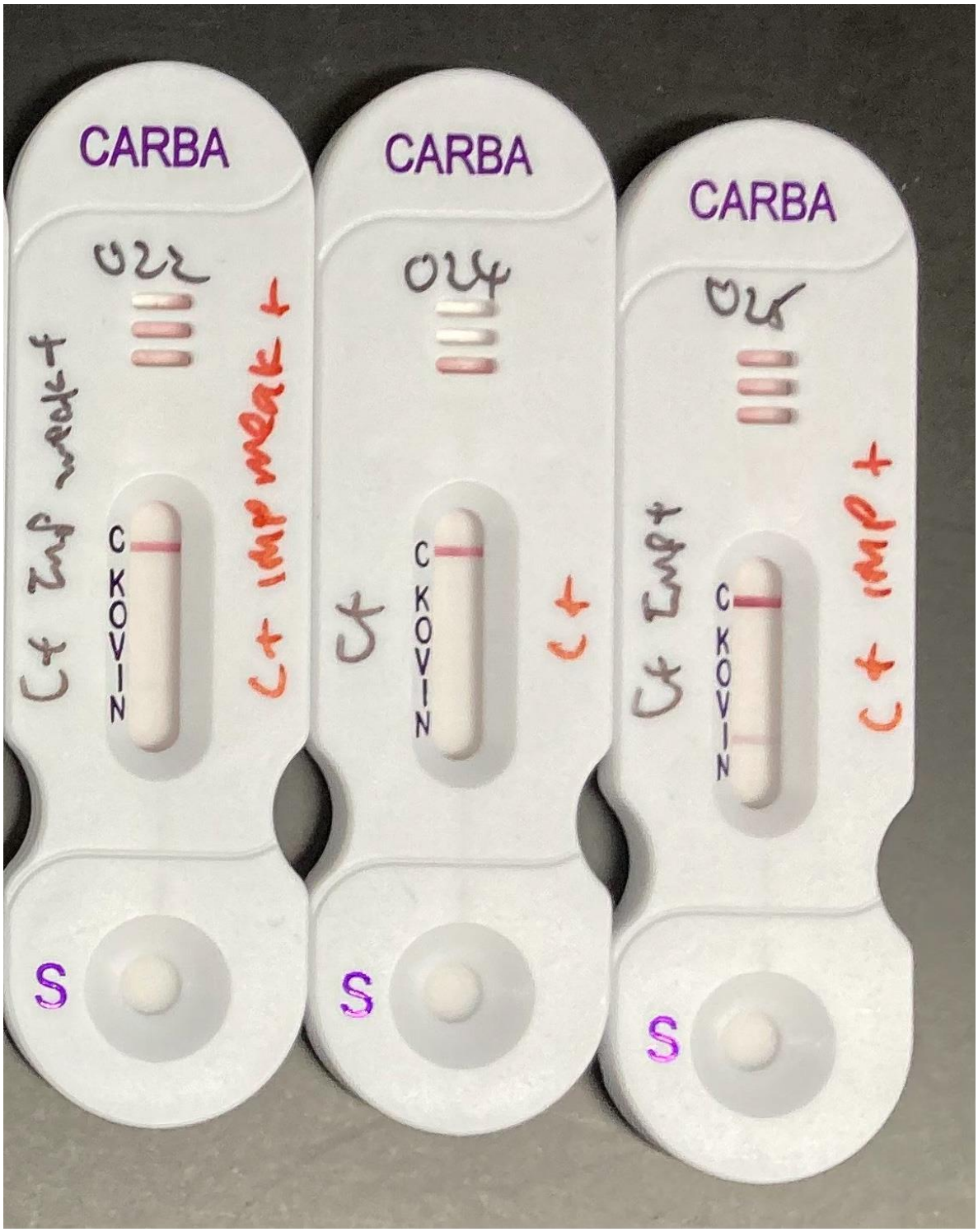
[a] '+' = test line present. ND = Not detected

Table S4. Quality control isolates used for quality control testing of carbapenemase inactivation methods.

Control type	Specimen ID/Reference strain	Species	Genotype
mCIM positive control	MBRL 235	*Escherichia coli*	NDM
CIMTris positive control	C00003 [a]	*Acinetobacter baumannii*	NDM
Negative control (for both tests)	ATCC 25922	*Escherichia coli*	N/A

[a] Internal control.

Figure S1. Image showing clear false positive (for IMP), faint false positive (for IMP), and negative NG-Test CARBA 5 assays performed on CRAB isolates in our laboratory.



Test 025 (right) is clearly positive for IMP. Test 022 (left) is faintly positive. Test 024 (centre) shows a negative result (only the control line is visible). The differences are much clearer to the naked eye than when rendered after image capture on screen/print.

Table S5. Line listing of all beta-lactamase genes harboured by CRAB isolates (n = 97) in our study.

Specimen ID	Carbapenemase genes ('big 5')	Carbapenemase genes (other)	Other beta-lactamase genes		Sequence type	NG-Test CARBA 5 result
C00003	*bla*$_{\text{NDM-1}}$	*bla*$_{\text{OXA-104}}$ (OXA-51 family), *bla*$_{\text{OXA-23}}$	*bla*$_{\text{ADC-26}}$	*bla*$_{\text{PER-7}}$	149	NDM
C00044-A	*bla*$_{\text{NDM-1}}$	*bla*$_{\text{OXA-65}}$ (OXA-51 family), *bla*$_{\text{OXA-58}}$	*bla*$_{\text{ADC-32}}$		NA	NDM
C00044-B	*bla*$_{\text{NDM-1}}$	*bla*$_{\text{OXA-65}}$ (OXA-51 family), *bla*$_{\text{OXA-58}}$	*bla*$_{\text{ADC-32}}$		NA	NDM
C00168		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\text{OXA-23}}$	*bla*$_{\text{ADC-115}}$	*bla*$_{\text{TEM-1}}$	2	IMP
C00179		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\text{OXA-23}}$	*bla*$_{\text{ADC-115}}$	*bla*$_{\text{TEM-1}}$	2	IMP
C00186		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\text{OXA-23}}$	*bla*$_{\text{ADC-115}}$	*bla*$_{\text{TEM-1}}$	2	IMP
C00250		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\text{OXA-23}}$	*bla*$_{\text{ADC-73}}$		2	IMP
C00356		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\text{OXA-23}}$	*bla*$_{\text{ADC-73}}$	*bla*$_{\text{TEM-1}}$	2	IMP
C00415		*bla*$_{\text{OXA-66}}$ (OXA-51 family)	*bla*$_{\text{ADC-73}}$		2	IMP
C00435		*bla*$_{\text{OXA-69}}$ (OXA-51 family), *bla*$_{\text{OXA-23}}$	*bla*$_{\text{ADC-11}}$		1	IMP
C00480-B		*bla*$_{\text{OXA-91}}$ (OXA-51 family), *bla*$_{\text{OXA-23}}$	*bla*$_{\text{ADC-52}}$	*bla*$_{\text{CARB-16}}$	164	IMP
C00730		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\text{OXA-23}}$	*bla*$_{\text{ADC-73}}$		2	IMP
C00762		*bla*$_{\text{OXA-91}}$ (OXA-51 family), *bla*$_{\text{OXA-23}}$	*bla*$_{\text{ADC-52}}$	*bla*$_{\text{CARB-16}}$	164	IMP
C00785		*bla*$_{\text{OXA-69}}$ (OXA-51 family), *bla*$_{\text{OXA-23}}$	*bla*$_{\text{ADC-11}}$		1	IMP

C00815-B		*bla*$_{\text{OXA-91}}$ (OXA-51 family), *bla*$_{\text{OXA-23}}$	*bla*$_{\text{ADC-52}}$	*bla*$_{\text{CARB-16}}$	164	IMP
C00877		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\text{OXA-23}}$	*bla*$_{\text{ADC-73}}$	*bla*$_{\text{TEM-1}}$	2	IMP
C00878		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\text{OXA-23}}$	*bla*$_{\text{ADC-73}}$	*bla*$_{\text{TEM}}$	2	IMP
C00887		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\text{OXA-23}}$	*bla*$_{\text{ADC-73}}$	*bla*$_{\text{TEM-1}}$	2	IMP
C00914		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\text{OXA-23}}$	*bla*$_{\text{ADC-73}}$		2	IMP
C00971		*bla*$_{\text{OXA-69}}$ (OXA-51 family), *bla*$_{\text{OXA-23}}$	*bla*$_{\text{ADC-11}}$		1	IMP
C00977		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\text{OXA-23}}$	*bla*$_{\text{ADC-73}}$	*bla*$_{\text{TEM-1}}$	2	IMP
C00984		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\text{OXA-23}}$	*bla*$_{\text{ADC-73}}$	*bla*$_{\text{TEM-1}}$	2	IMP
C00985		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\text{OXA-23}}$	*bla*$_{\text{ADC-73}}$		2	IMP
C00987		*bla*$_{\text{OXA-91}}$ (OXA-51 family), *bla*$_{\text{OXA-23}}$	*bla*$_{\text{ADC-52}}$	*bla*$_{\text{CARB-16}}$	164	IMP
C01026		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\text{OXA-23}}$	*bla*$_{\text{ADC}}$	*bla*$_{\text{TEM-1}}$	2	IMP
C01029		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\text{OXA-23}}$	*bla*$_{\text{ADC-73}}$		2	IMP
C01060		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\text{OXA-23}}$	*bla*$_{\text{ADC-73}}$	*bla*$_{\text{TEM-1}}$	2	IMP
C01061		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\text{OXA-23}}$	*bla*$_{\text{ADC-73}}$	*bla*$_{\text{TEM-1}}$	2	IMP
C01075		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\text{OXA-23}}$		*bla*$_{\text{TEM-1}}$	2	IMP
C01079		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\text{OXA-23}}$	*bla*$_{\text{ADC-115}}$		2	IMP
C01081	*bla*$_{\text{NDM-1}}$	*bla*$_{\text{OXA-64}}$ (OXA-51 family), *bla*$_{\text{OXA-58}}$, *bla*$_{\text{OXA-23}}$	*bla*$_{\text{ADC-26}}$		25	NDM + IMP

C01083		*bla*$_{OXA-66}$ (OXA-51 family), *bla*$_{OXA-23}$	*bla*$_{ADC-73}$	*bla*$_{TEM-1}$	2	IMP
C01100		*bla*$_{OXA-66}$ (OXA-51 family), *bla*$_{OXA-23}$	*bla*$_{ADC-73}$		2	IMP
C01111		*bla*$_{OXA-66}$ (OXA-51 family), *bla*$_{OXA-23}$	*bla*$_{ADC}$		2	IMP
C01112		*bla*$_{OXA-66}$ (OXA-51 family), *bla*$_{OXA-23}$	*bla*$_{ADC-73}$	*bla*$_{TEM-1}$	2	IMP
C01117		*bla*$_{OXA-66}$ (OXA-51 family), *bla*$_{OXA-23}$	*bla*$_{ADC-73}$	*bla*$_{TEM-1}$	2	IMP
C01129		*bla*$_{OXA-66}$ (OXA-51 family), *bla*$_{OXA-23}$	*bla*$_{ADC}$		2	IMP
C01130		*bla*$_{OXA-66}$ (OXA-51 family), *bla*$_{OXA-23}$	*bla*$_{ADC}$		2	IMP
C01147		*bla*$_{OXA-66}$ (OXA-51 family), *bla*$_{OXA-23}$	*bla*$_{ADC-73}$	*bla*$_{TEM-1}$	2	IMP
C01173	*bla*$_{NDM-1}$	*bla*$_{OXA-58}$	*bla*$_{ADC}$		782	NDM + IMP
C01174		*bla*$_{OXA-66}$ (OXA-51 family), *bla*$_{OXA-23}$	*bla*$_{ADC-73}$	*bla*$_{TEM-1}$	2	IMP
C01189		*bla*$_{OXA-66}$ (OXA-51 family), *bla*$_{OXA-23}$	*bla*$_{ADC-73}$	*bla*$_{TEM-1}$	2	IMP
C01205		*bla*$_{OXA-66}$ (OXA-51 family), *bla*$_{OXA-23}$	*bla*$_{ADC-73}$	*bla*$_{TEM-1}$	2	IMP
C01239		*bla*$_{OXA-69}$ (OXA-51 family), *bla*$_{OXA-23}$	*bla*$_{ADC-11}$		1	IMP
C01270		*bla*$_{OXA-66}$ (OXA-51 family), *bla*$_{OXA-23}$	*bla*$_{ADC-73}$		2	IMP
C01272		*bla*$_{OXA-66}$ (OXA-51 family), *bla*$_{OXA-23}$	*bla*$_{ADC-73}$		2	IMP
C01298		*bla*$_{OXA-66}$ (OXA-51 family), *bla*$_{OXA-23}$	*bla*$_{ADC-73}$	*bla*$_{TEM-1}$	2	IMP
C01301		*bla*$_{OXA-66}$ (OXA-51 family), *bla*$_{OXA-23}$	*bla*$_{ADC-73}$	*bla*$_{TEM-1}$	2	IMP

C01319		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC-73}}$	*bla*$_{\text{TEM-1}}$	2	IMP
C01323		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC-73}}$	*bla*$_{\text{TEM-1}}$	2	IMP
C01339		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC-73}}$	*bla*$_{\text{TEM-1}}$	2	IMP
C01344		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC}}$		2	IMP
C01348		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC}}$		2	IMP
S00037	*bla*$_{\text{NDM-1}}$	*bla*$_{\text{OXA-121}}$ (OXA-51 family)	*bla*$_{\text{ADC-163}}$		150	NDM
S00068		*bla*$_{\text{OXA}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC-73}}$		2	IMP
S00100		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC-73}}$	*bla*$_{\text{TEM-1}}$	2	IMP
S00151		*bla*$_{\text{OXA-91}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC-52}}$	*bla*$_{\text{CARB-16}}$	164	IMP
S00198-A		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\text{OXA-72}}$ (OXA-24 family), *bla*$_{\text{OXA}}$ (OXA-23 family)	*bla*$_{\text{ADC-115}}$		2	IMP
S00199-B		*bla*$_{\text{OXA-91}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC-52}}$	*bla*$_{\text{CARB-16}}$	164	IMP
S00330		*bla*$_{\text{OXA-91}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC-52}}$	*bla*$_{\text{CARB-16}}$	164	IMP
S00386-B		*bla*$_{\text{OXA-91}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC-52}}$	*bla*$_{\text{CARB-16}}$	164	IMP
S00404-B		*bla*$_{\text{OXA-69}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC-11}}$		1	IMP
S00473		*bla*$_{\text{OXA-51}}$, *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC-165}}$		218	IMP
S00939		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC-73}}$		2	IMP

S01246-B		*bla*$_{\text{OXA-69}}$ (OXA-51 family), *bla*$_{\text{OXA}}$ (OXA-23 family)	*bla*$_{\text{ADC-11}}$		1	IMP
S01256-A		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC-73}}$		2	IMP
S01272-B		*bla*$_{\text{OXA-69}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC-11}}$		1	IMP
S01368-C		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC-73}}$	*bla*$_{\text{TEM-1}}$	2	IMP
S01384-B		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC-73}}$		2	IMP
S01403-A		*bla*$_{\text{OXA-69}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC-11}}$		1	IMP
S01427		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC-73}}$	*bla*$_{\text{TEM-1}}$	2	IMP
S01478-A		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC-73}}$		2	IMP
S01522		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC-73}}$		2	IMP
S01539		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC-73}}$	*bla*$_{\text{TEM-1}}$	2	IMP
S01545-A		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC-73}}$	*bla*$_{\text{TEM-1}}$	2	IMP
S01560-A		*bla*$_{\text{OXA-69}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC-11}}$		1	IMP
S01573-A		*bla*$_{\text{OXA}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC-73}}$	*bla*$_{\text{TEM-1}}$	2	IMP
S01573-B		*bla*$_{\text{OXA}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC-73}}$	*bla*$_{\text{TEM-1}}$	2	IMP
S01582-B		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC-73}}$	*bla*$_{\text{TEM-1}}$	2	IMP
S01588-A		*bla*$_{\text{OXA-69}}$ (OXA-51 family), *bla*$_{\text{OXA}}$ (OXA-23 family)	*bla*$_{\text{ADC-11}}$		1	IMP
S01659		*bla*$_{\text{OXA-91}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC-52}}$	*bla*$_{\text{CARB-16}}$	164	IMP

S01668-B		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC-73}}$	*bla*$_{\text{TEM-1}}$	2	IMP
S01835-A		*bla*$_{\text{OXA}}$ (OXA-51 family)	*bla*$_{\text{ADC}}$		2	IMP
S01856		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC-73}}$		164	IMP
S01862-A		*bla*$_{\text{OXA-91}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC-52}}$	*bla*$_{\text{CARB-16}}$	1	IMP
S01989-A		*bla*$_{\text{OXA-69}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC-11}}$		2	IMP
S02043-B		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC-73}}$	*bla*$_{\text{TEM-1}}$	1	IMP
S02060-A		*bla*$_{\text{OXA-69}}$ (OXA-51 family), *bla*$_{\text{OXA}}$ (OXA-23 family)	*bla*$_{\text{ADC-11}}$		103	IMP
S02111-A		*bla*$_{\text{OXA-70}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC-203}}$	*bla*$_{\text{CARB-49}}$	1	IMP
S02114-B		*bla*$_{\text{OXA-69}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC-11}}$		1	IMP
S02132		*bla*$_{\text{OXA-69}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC-11}}$		2	IMP
S02150-B		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC}}$		164	IMP
S02201		*bla*$_{\text{OXA-91}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC-52}}$	*bla*$_{\text{CARB-16}}$	1	IMP
S02231-A		*bla*$_{\text{OXA-69}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC-11}}$		2	IMP
S02244		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC-73}}$		2	IMP
S02278-A		*bla*$_{\text{OXA-66}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC-73}}$		1	IMP
S02358		*bla*$_{\text{OXA-69}}$ (OXA-51 family), *bla*$_{\textit{OXA-23}}$	*bla*$_{\text{ADC}}$		NA	IMP

Detection and Analysis of IS*Aba1* Insertion Sequences in CRAB.

Methods

Detection of IS*Aba1* in the isolates that carry an OXA-51 or OXA-51-like gene was performed using two methods. Firstly, SRST2 was used with default parameters to map unassembled reads against the IS*Aba1* sequence obtained from the ISFinder database (accession number AY758396) [1-2]. Secondly, a BLASTN search of the IS*Aba1* sequence was performed against the assembled contigs [3].

Results

Of the 97 CRAB isolates, 96 carried an OXA-51 family variant. Based on mapping of the unassembled reads, IS*Aba1* was detected in 95 isolates (99%) with 100% coverage and less than 1% nucleotide divergence. Subsequently, using a BLASTN search of the IS*Aba1* sequence against the assembled contigs, IS*Aba1* was detected with at least 99.5% identity and 95% coverage in 62 isolates (65%). The lack of IS*Aba1* detection in the contigs of the remaining isolates in which IS*Aba1* was detected in the unassembled reads was likely due to assembly fragmentation at the IS*Aba1* region, as assemblies were based on short-read sequencing data alone and complete genomes were not available. Of note, in all 62 isolates, the IS*Aba1* sequence was detected on a contig of length approximately 1.1kb that was different from the contig harbouring the OXA-51 family variant. Hence, the location of the IS*Aba1* sequence relative to the OXA-51 family variant could not be determined. Nevertheless, with 94 of the 96 OXA-51-variant-harbouring isolates also producing either NDM-1 or OXA-23, it would be difficult to draw any conclusions on the direct contribution of OXA-51-family genes to carbapenem resistance in this cohort. For the two remaining CRAB isolates where an OXA-51-like gene was the only carbapenemase detected by WGS, IS*Aba1* was detected in one isolate; this isolate was also positive on CIMTris. The second isolate (in which IS*Aba1* was not detected by WGS) was CIMTris negative. This is consistent with existing observations that the presence of an IS*Aba1* sequence is required for constitutive expression of OXA-51 in *A. baumannii* [4].

Supplementary References

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