Supplementary Materials

Table S1. Susceptibility patterns of new antibiotics in large surveillance studies from various geographic regions.

	% susceptible (breakpoint used), n isolates tested, geographic origin, MIC 50/90 value (when available) in mg/L, vs. % susceptible of other antibiotics from the same study when available (reference)		
Antibiotics	***Enterobacterales***	***Acinetobacter* spp.**	***Pseudomonas aeruginosa***
Plazomicin	97.0% (FDA, ≤2 mg/L), n=8783, USA, 0.5/1 (1) 95.8% (FDA susceptibility breakpoint ≤2 mg/L), n=4217, Europe, n.a. (2) 99.6% (FDA, ≤2 mg/L), vs. >99% to amikacin, 90.5% (*E. coli)* and 96.8% (*K. pneumoniae*) to gentamicin, >99% to meropenem, >98% to colistin (3).	% n.a. (no breakpoint available), n=171, Canada, 0.5/2 (3) 40.4% (FDA susceptibility breakpoint ≤2 mg/L), n=99, Europe, n.a. (2)	% na (no breakpoint available), n=3864, Canada, 4/16 (3) 32.4% (FDA susceptibility breakpoint ≤2 mg/L), n=102, Europe, n.a. (2)
Eravacycline	% na (no breakpoint available), n=2067, Canada, 0.12/ 0.5 (4)	% na (no breakpoint available), n=28, Canada 0.06/ 0.5 (4)	% na, n=1647, worldwide isolate, 8/16 (5)
Temocillin	93% (BSAC systemic, ≤8 mg/L), 99.7% (BSAC urine, ≤32 mg/L), n=613, Hong Kong, vs. 86% piperacillin/tazobactam, 75.4% ceftriaxone, 83.5% ceftazidime, 78.3% gentamicin, 99.2% amikacin, 81.1% cefepime, 88.8% colistin, 89.4% tigecycline, 92.8% fosfomycin, 99.7% meropenem, 99.0% ertapenem (6) 99.6% (at ≤8 mg/L), 100% at (at ≤32 mg/L), n=762, France (7) 61.8% (at ≤8 mg/L), 91.0% (at ≤32 mg/L), n=400, Poland, 8/32, vs.	Not active	Not active

	28.5% piperacillin/tazobactam, 26.3% ceftazidime, 43% gentamicin, 57.3% amikacin, 77.0% colistin, 40.5% tigecycline, 40.0% fosfomycin, 88.8% meropenem, 77.0% ertapenem (8). 91.9% % (at ≤16 mg/L), n=652, Belgian ICU (9)		
Cefiderocol	97.2% (EUCAST, ≤ 2 mg/L), n=146, Germany, 0.12/1, vs. 100% ceftazidime-avibactam, 100% meropenem, 91.8% ceftolozane-tazobactam, 91.1% amikacin, 89% cefepime, 84.2% ciprofloxacin, 83.6% ceftazidime, 82.2% aztreonam, 75.3% colistin (10).	100%, n=13, Germany, 0.06/0.12, vs. 61.5% meropenem, 46.2% amikacin and 38.5% to ciprofloxacin (10).	100%, n=54, Germany, 0.12/0.5, vs. 98.1% ceftazidime-avibactam, 98.1% ceftolozane-tazobactam, 98.1% amikacin, 92.6% meropenem, 90.7% cefepime, 88.9% colistin, 87% ceftazidime, 83.3% aztreonam, 79.6% ciprofloxacin (10).
Ceftazidime/ avibactam	99% (EUCAST ≤8 mg/L), n=21 850, 18 European countries, 0.12/0.5, vs. 74.6% ceftazidime, 79.5% piperacillin/ tazobactam, 74.9% aztreonam, 96.3% meropenem, 83.1% colistin, 71.9% levofloxacin (11). *K. pneumoniae* 99.9% (EUCAST, ≤8 mg/L), n=6041, USA, 0.12/0.25 (12)	35% (at ≤8 mg/L), n=443 (pneumonia patients), USA, 16/>32vs. 37.5% ceftazidime, 32.3% piperacillin/ tazobactam, 41.5% meropenem, 45.6% gentamicin, 36.1% levofloxacin, 93.7% colistin (13).	97.1% (EUCAST ≤8 mg/L), n=6210, USA, 2/4 (12), vs. 97.0% ceftolozane/ tazobactam, 83.5% ceftazidime, 79.1% piperacillin/ tazobactam, 78.2% meropenem, 99.7% colistin, 63.5% levofloxacin (12).
Ceftolozane/ tazobactam	94.5% (EUCAST, ≤2 mg/L, n=24266, Western Europe, 0.25/1, vs. 81.1% ceftazidime, 76.9% levofloxacin, 81.7% colistin, 98.3% meropenem (14). 79.4% (EUCAST, ≤2 mg/L, n=6316, Eastern Europe, 0.25/32. vs. 57.0% ceftazidime, 56.3% levofloxacin, 84.1% colistin, 91.7% meropenem (14).	13.5% (at ≤2 mg/L), n=318, Asia Pacific vs. 27.9% amikacin, 99.2% colistin, 14.4% cefepime, 17.5% levofloxacin, 15.1% meropenem, 12.6% piperacillin/ tazobactam (16)	97.0% (EUCAST susceptible breakpoint ≤4 mg/L, n=6210, USA, 0.5/2, vs. 97.1% ceftazidime/ avibactam (12). 94.1% (EUCAST ≤2 mg/L), n=5084, Western Europe, 0.5/2,vs. 79.7% ceftazidime, 76.7% piperacillin/tazobactam, 67.4% levofloxacin, 79.0% meropenem, 99.4% colistin, tobramycin 88.4% (14).

	E. coli 94.7% (EUCAST, ≤2 mg/L, n=494, Brazil, 0.25/0.5, vs. 78.1% ceftazidime, 71.7% ceftriaxone, 55.1% ciprofloxacin, 99.4% colistin, 99.0% meropenem (15). *K. pneumoniae* 95.3% (EUCAST susceptible breakpoint ≤2 mg/L, n=6041, USA, 0.25/1 (12).		80.9% (EUCAST, ≤2 mg/L, n=2419, Eastern Europe, 1/>32, vs. 62.8.% ceftazidime, 57.4% piperacillin/tazobactam, 47.7% levofloxacin, 54.5% meropenem, 99.1% colistin, tobramycin 70.9% (14). 97.0 % (CLSI, ≤4/4 mg/L, n=3851, USA 0.5/2, vs. 85.1% ceftazidime, 80.4% piperacillin/ tazobactam, 76.6% levofloxacin, 99.2% colistin, 81.8% meropenem (17) 92.3% (at ≤4 mg/L), n=765. Asia Pacific vs. 94.9% amikacin, 99.6% colistin, 80.4% cefepime, 76.2% levofloxacin, 77.9% meropenem, 74.1% piperacillin/ tazobactam (16) 90.9% (EUCAST, ≤4 mg/L, n=265, Brazil, 1/4, vs. 66.8% ceftazidime, 59.6% piperacillin/ tazobactam, 69.8% ciprofloxacin, 98.9% colistin, 66.0% meropenem (15).
Imipenem/ relebactam	95.4%, n=10516, USA, vs. 92.1% imipenem, 98.6% meropenem, 94.0% ceftolozane/ tazobactam, 89.7% cefepime, 90.6% piperaclin/ tazobactam, 73.9% ciprofloxacin (18). 98.4%, n=10465 (19)	45.8% (EUCAST, ≤2 mg/L), n=72, USA, 4/>32, vs. 45.8% imipenem, 66.7% amikacin, 40.3% ceftazidime, 31.9% piperacillin/ tazobactam (20) 51% (CLSI imipenem breakpoint), n=158, USA, 2-4 / >16-4, vs. 49% imipenem (21)	93.9% (CLSI imipenem breakpoint), n=2732, USA, vs. 72.0% imipenem, 77.0% meropenem, 94.7% ceftolozane/ tazobactam, 76.9% ceftazidime, 75.6% cefepime, 70.2% piperacilin/ tazobactam, 65.7% ciprofloxacin, 63.1% aztreonam, 96% amikacin, 99.6% colistin (18). 98% (CLSI imipenem breakpoint), n=490, USA, 0.5-4/ 2-4, vs. 70% imipenem (21)

			97.3% (EUCAST imipenem breakpoint), n= 1445, Spain, 0.5/1, vs. 73.5% piperacillin/ tazobactam, 79.7%ceftazidime, 79.4% cefepime, 94.2% ceftazidime/avibactam, 61.6% ciprofloxacin, 91.6% amikacin (22) 94.4% (breakpoint?), n=1245, 22 European countries (19)

Table S2. Proportion (%) susceptible in various antimicrobial resistant isolates.

	% susceptible (breakpoint used), number of isolates tested, MIC 50/90 value (when available) in mg/L, vs. % susceptible of other antibiotics from the same study when available (reference)		
	Extended spectrum beta-lactamases	**Carbapenem non-susceptible**	**Others**
Plazomicin	*E. coli* 100% (FDA breakpoint, ≤2 mg/L), n=539, n.a. (3)	*Enterobacterales* 95.8% (FDA breakpoint, ≤2 mg/L), n=98, n.a., vs. 78.6% amikacin, 45.9% gentamicin, 24,2% tobramycin (1) 85% (FDA breakpoint, ≤2 mg/L), n=227, 0.25/128 (2) KPC 92.9% (FDA breakpoint, ≤2 mg/L), , n=113, ≤0.25/2 (2) MBL 40.5% (FDA breakpoint, ≤2 mg/L), n=37, 128/128 (2) OXA-48 87% (FDA breakpoint, ≤2 mg/L), n=54, 0.25/16 (2) *K. pneumoniae* 97.6% (FDA breakpoint, ≤2 mg/L), n=697, 0.25/1 (23)	Aminoglycosides modifying enzymes genes present 99% (FDA breakpoint, ≤2 mg/L), n=728, 0.25/1 (2) Non-susceptible to ≥ 2 aminoglycosides 96.8% (FDA breakpoint, ≤2 mg/L), n=680 (1) Non-susceptible to 3 aminoglycosides 52.2% (FDA breakpoint, ≤2 mg/L), n=23 (1) *Enterobacterales* non-susceptible to all but 2 antimicrobial classes 89.2% (FDA breakpoint, ≤2 mg/L), n=102 (1)

			Colistin-resistant *Enterobacterales* isolates 89.5% (FDA breakpoint, ≤2 mg/L), n=95 Isolates harboring *mcr-1* 100% (FDA breakpoint, ≤2 mg/L), n=21, n.a. (24)
Eravacycline	*E. coli* % n.a., n= 141, 0.25/0.5 (4)	*E. coli* 98% (CLSI, ≤0.5 mg/L), n=343, 0.125/0.5, vs. 78% amikacin, 18% levofloxacin, 41% meropenem, 71% imipenem (25) KPC 98% (CLSI, ≤0.5 mg/L), n =55 (25) MBL 95% (CLSI, ≤0.5 mg/L), n=64 (25) OXA-48 100% (CLSI, ≤0.5 mg/L), n=46 (25)	Colistin-resistant *E. coli mcr-1* positive % na, n=16, 0.25/0.5 (26) vs. Tetracycline >32/>32 (intrinsic), tigecycline 0.25/0.5
Temocillin	*E. coli, Klebsiella spp., and Proteus* spp. 83.9% (BSAC systemic, ≤8 mg/L), n=118, Hong Kong, 8/16 (6) *Enterobacterales* 66.2% (resistant if MIC≤ 32 μg/ml.), n =77, Belgium, vs. 98.7% meropenem (9)	*K. pneumonia KPC* producing 8.6% (BSAC systemic, ≤8 mg/L), 84.6% (BSAC urine, ≤32 mg/L), n=280, 24/48 (27) *K. pneumoniae* and *E.coli KPC* producing 91% (BSAC urine, ≤32 mg/L), n=33, 32/32 (28) *E. coli*, *K. pneumoniae* and *Enterobacter* spp. KPC 50.8% (at ≤8 mg/L), 93.9% (at ≤16 mg/L), n =669 VIM 0% (at ≤8 mg/L, 2.2% (at ≤16 mg/L), n=138 IMP 0% (at ≤8 mg/L), 100% (at ≤16 mg/L), n=1 OXA-48 0% (at ≤8 mg/L), 3.7% (at ≤16 mg/L), n=108 (typical) (29) *E.coli*, *K. pneumoniae* and *Enterobacter* spp. Carbapenem non-susceptible without carbapenemases genes (BSAC systemic, ≤8 mg/L), 15.6%, n=77, vs. 100% ceftazidim/ avibactam (30)	

Cefiderocol	*Enterobacterales* (TEM, ESBL, SHV ESBL, CTX-M, PER or AmpC) 2/ 8, n= 43 (31)	*Enterobacterales* 83.3% (EUCAST, ≤ 2 mg/L), n= 30, 1/4 (10) *A. baumannii*, 100%, n=7, (10) 0.25/0.25, vs. 0% ciprofloxacin, 100% colistin, 85.7% amikacin. *P. aeruginosa* 100% (≤ 2 mg/L), n = 27, 0.5/2, vs. 0% ceftazidime, 7% cefepime, 0% ciprofloxacin, 8% ceftazidime-avibactam, 26% ceftolozane/ tazobactam, 22% aztreonam, 40.9% amikacin, 96% colistin (31)	
Ceftazidime/ avibactam	*K. pneumoniae* 100% (EUCAST, ≤8 mg/L), n=614 USA, 0.25/0.5 (12)	*E. coli* 82% (CLSI, ≤8/4 mg/L), n=343, 0.5/>256, vs. 78% amikacin, 18% levofloxacin, 41% meropenem, 71% imipenem (25) KPC 98% (CLSI, ≤8/4 mg/L), n =55 (25) MBL 8% (CLSI, ≤8/4 mg/L), n=64 (25) OXA-48 91% ((CLSI, ≤8/4 mg/L), n=46 (25) *E.coli*, *K. pneumonia* and *Enterobacter* spp. Without carbapenemases genes 100%, n=77 (30) *K. pneumonia* 99.2% (EUCAST, ≤8 mg/L), n=161, USA, 1/2, vs. 0% ceftolozane–tazobactam, 8.7% levofloxacin, 44.7%, gentamicin, 42.9% 82.4% colistin (12). *K. pneumonia* MBL 2%, n=200, 256/>256, vs.	Susceptible to ≤2 classes only: *P.aeruginosa* 80.1% (EUCAST, ≤8 mg/L), n=810 USA, 4/16 (12) Colistin resistant: *Escherichia coli mcr-1* 100% (CLSI breakpoint, ≤2/4 mg/L), n=17, China vs. 100% meropenem, 100% tigecycline (34)

		88% colistin, 11% aztreonam. 14% levofloxacin (32). *Enterobacterales* non CPE producers 96% (CLSI, ≤8/4 mg/L), n=151, *Enterobacterales* CPE producers 47.1% (CLSI, ≤8/4 mg/L), n=1041, vs. 7.2% ciprofloxacin, 27.3% gentamicin, 38.5% amikacin, 59.3% tigecycline, 79.8% colistin (33)	
		A. baumannii 2.5% (CLSI, ≤8 mg/L), n=40, vs. 72.5% colistin, 10% tobramycin (36).	
		P. aeruginosa 83.3% (EUCAST, ≤4 mg/L), n=102, vs. 53.0% piperacillin/ tazobactam, 68.6% ceftazidime, 48.0% cefepime, 83.3% ceftolozane/ tazobactam (35).	
Ceftolozane/ tazobactam	*K. pneumonia* 82.9% (EUCAST, ≤2 mg/L), n=614, 1/8 (12) *Enterobacterales* 82.4% % (CLSI, ≤2 mg/L), n=3599, 0.5/16, vs. 7.8% cefepime, 98.7% meropenem, 95.4% amikacin (37) 98% (CLSI, ≤2 mg/L), n.a./1 n=116 (38)	*K. pneumonia* 0% (EUCAST, ≤2 mg/L), n=161 USA, >16/>16 (12) *Enterobacterales* 2.6% (CLSI, ≤4 mg/L), n=1018, >64/>64 vs. 77.5% ceftazidime/ avibactam, vs. 78.1% colistin n=1018 (39)	MDR (resistant to ≤3 antibiotic classes) *K. pneumoniae* 54% (CLSI, ≤2/4 mg/L), n=26, Lebanon (38) *P. aeruginosa* 43% (CLSI, ≤4/4 mg/L), n=69, Lebanon (38) Non-MBL MDR 64.4% (EUCAST susceptible breakpoint ≤4 mg/L, n=160, 2/64. Vs. 80.0% ceftazidim/ avibactam, 96.3% colistin (40) XDR (susceptible to ≤2 classes only) *P. aeruginosa* 80.7% (EUCAST, ≤4 mg/L), n=810 USA, 2/16
		Acinetobacter spp. 0.4% (at ≤2 mg/L), n=269, vs. 15.7% amikacin, 99.2% colistin, 14.4% cefepime, 4% levofloxacin, 12.6% piperacillin/ tazobactam (16)	
		P. aeruginosa 87.6 % (CLSI, ≤4 mg/L), n=699, 1/8, vs. 90.3% amikacin, 98.7% colistin (17)	

	92.5 % (CLSI, ≤4 mg/L), n=466, 1/4, vs. 80.7% amikacin, 94.0% colistin (42) 72.8% (at ≤4 mg/L), n=180, vs. 79.9% amikacin, 99.4% colistin, 48.3% cefepime, 37.6% ciprofloxacin, 43.1% piperacillin/ tazobactam (16) 82.4% (EUCAST, ≤4 mg/L), n=102, vs. 53.0% piperacillin/ tazobactam, 68.6% ceftazidime, 48.0% cefepime,83.3% ceftazidime/ avibactam (35)	vs. 80.1% ceftazidime/ tazobactam (12) Colistin resistant *P. aeruginosa* 88.9% (CLSI breakpoint, ≤2/4 mg/L), n-9, 1/4 (41)
Meropenem/ vaborbactam	*Enterobacterales* 98 % (EUCAST, ≤8 mg/L), n=152, 0.06/2 (43) KPC 100% (EUCAST, ≤8 mg/L), 0.03/0.5, n=124 (43) MBL and OXA-48 57.1% (EUCAST, ≤8 mg/L), 8/8 n=7 (43) CPE (EUCAST, ≤8 mg/L), 97.8%, 0.03/1, n=134 (43)	
Imipenem/ relebactam	*Enterobacterales* imipenem non-susceptible 66.7% (CLSI breakpoint for imipenem ≤1 mg/L),n=72, 1/2 (44). *K. pneumoniae* n.a. (no breakpoint), n=200, ≤0.25/0.5, (45) *K. pneumoniae* KPC (imipenem non-susceptible) 98.6% (CLSI breakpoint for imipenem ≤1 mg/L), n=138 (19) 97% (CLSI imipenem breakpoint), n=111, USA, 0.25-4 /1-4 , vs. 9% imipenem (21)	Not susceptible to all β-Lactam and to fluoroquinolones *Enterobacterales* 82.4% (FDA breakpoint ≤1 mg/n=102, vs. 0% imipenem, 0% meropenem, 79.4% amikacin, 84.3% colistin *P. aeruginosa* 62.2%, n=230 vs. 0% imipenem, 0% meropenem, 67.5% ceftolozane/ tazobactam, 84.8%% amikacin, 98.7% colistin (18)

	OXA-48 15% (CLSI breakpoint for imipenem ≤1 mg/L), n=20, 4-4/32-4 vs. 90% ceftazidime/ avibactam (46)
P. aeruginosa imipenem non-susceptible 74.4% (breakpoint for imipenem ≤1 mg/L), n=469, (72% carried MBL and non-susceptible to imipenem-relebactam) (19).	
	80.5%% (CLSI imipenem breakpoint, ≤1 mg/L), n=251, USA, 2/4 (20).
	78.5% (CLSI breakpoint for imipenem ≤1 mg/L), n=191, 2/4 (44).

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