国際委員会　2024 January CLSI 報告

CLSI　20 - 23 January 2024 AST meeting 報告
（2024 年 1 月 20 日～23 日：米国アリゾナ州テンピ）
大楠 清文（東京医科大学）

2024 年 1 月 20 日～23 日に開催された Clinical Laboratory Standards Institute （CLSI）の Antimicrobial Susceptibility Testing（AST）ミーティングに，日本臨床微生物学会から大楠清文委員長（東京医科大学）が参加した。3 日間にわたるプレゼンテーションおよびディスカッションが行われたので，**決議事項を中心としてその概要**をワーキンググループ別に報告する。なお，今回の会議で決定された事項については 2024 年 6 月の AST ミーティングまでは最終ではなく，最終決定版はパブリックコメントを受けた上で 2024 年の 6 月に公表される予定である。

会議の前日（17時～19時までの2時間）に恒例となっているCLSI Education Sessionが開催された。今回のトピックスは“Addressing the Gaps in Defining, Detecting, and Reporting MDRO” For Clinical, Veterinary, and Public Health Laboratoriesと題して，4名の演者；April M. Bobenchik, PhD, D (ABMM), Kelli Maddock, MS, MLS (ASCP) M, Paula M. Snippes Vagnone, MT(ASCP), Allison Brown, PhD, MPHが各々，Clinical Laboratory Gaps，Veterinary Laboratory Gaps，Public Health Laboratory Gaps，Transatlantic Taskforce on Antimicrobial Resistance (TATFAR)のタイトルで多剤耐性菌の定義，検出，報告に関するギャップへの対応についてプレゼンテーションを行った。なお，今回は演者4名の講演スライドは公開されていない。

会議冒頭の Opening Remarks で Chairholder の Dr. Lewis が，CLSI 会議への参加者を歓迎して会議の開会を宣言した。その後，CLSI の Chief Executive Officer Dr. Jones から「**CLSI awards**」として以下の 3 名が表彰された；

John V. Bergen Excellence Award – Romney Humphries
Excellence in Standards Development Award – Audrey Schuetz
Russell J. Eilers Memorial Award – Melvin Weinstein

ブレイクポイントワーキンググループ（BPWG）

M45 PENICILLIN BREAKPOINTS

***Abiotrophia/Granulicatella*, *Lactococcus*, and *Micrococcus* に対する penicillin の MIC ブレイクポイント；S ≤2 µg/mL, I 4 µg/mL, R ≥8 µg/mL が承認された（投票：賛成 11，反対 3，棄権 0，欠席 0）**

＊参考：Proposed Breakpoints

	Current M45 Breakpoint					
Organism	S	I	R	Source of PCN BP	PCN ECV (tentative)	PK/PD cutoff
Abiotrophia/ Granulicatella	**≤0.12**	0.25-2	≥4	Viridans Strep	**2**	**2-4**
Aerococcus	≤0.12	0.25-2	≥4	Viridans Strep	0.12	
Corynebacterium	≤0.12	0.25-2	≥4	Viridans Strep	≥0.5	
Erysipelothrix	≤0.12	-	-	Viridans Strep	≤0.12	
Gemella	≤0.12	0.25-2	≥4	Viridans Strep	0.12	
Lactococcus	**≤1**	2	≥4	MIC distribution	**2-4**	
Bacillus	≤0.12	-	≥0.25	Staphylococcus	0.12	
Micrococcus	**≤0.12**	-	≥0.25	Staphylococcus	**0.5**	
Lactobacillus	≤8	-	-	Enterococcus	0.5-2	
Leuconostoc	≤8	-	-	Enterococcus	4	
Pediococcus	≤8	-	-	Enterococcus	1	
Listeria	≤2	-	-	M100 S15 (2005)	~1	
Rothia mucilaginosa	≤0.12	0.25-2	≥4	MIC distributions	0.125	

Some BPs are below ECV (red)

M45 *LACTOBACILLUS* AND *PEDIOCOCCUS*

***Lactobacillus* and *Pediococcus* に対する penicillin の MIC ブレイクポイント；S ≤2 µg/mL が承認された（投票：賛成 14，反対 0，棄権 0，欠席 0）**

＊参考：Proposed Breakpoints

	Current M45 Breakpoint					
Organism	S	I	R	Source of PCN BP	PCN ECV (tentative)	PK/PD cutoff
Abiotrophia/ Granulicatella	≤0.12	0.25-2	≥4	Viridans Strep	2	**2-4**
Aerococcus	≤0.12	0.25-2	≥4	Viridans Strep	0.12	
Corynebacterium	≤0.12	0.25-2	≥4	Viridans Strep	≥0.5	
Erysipelothrix	≤0.12	-	-	Viridans Strep	≤0.12	
Gemella	≤0.12	0.25-2	≥4	Viridans Strep	0.12	
Lactococcus	≤1	2	≥4	MIC distribution	2-4	
Bacillus	≤0.12	-	≥0.25	Staphylococcus	0.12	
Micrococcus	≤0.12	-	≥0.25	Staphylococcus	0.5	
Lactobacillus	**≤8**	-	-	Enterococcus	**0.5-2**	
Leuconostoc	≤8	-	-	Enterococcus	4	
Pediococcus	**≤8**	-	-	Enterococcus	**1**	
Listeria	≤2	-	-	M100 S15 (2005)	~1	
Rothia mucilaginosa	≤0.12	0.25-2	≥4	MIC distributions	0.125	

M45 *LEUCONOSTOC*

***Leuconostoc* に対する penicillin の MIC ブレイクポイント；S ≤4 µg/mL が承認された（投票：賛成 14，反対 0，棄権 0，欠席 0）**

＊参考：Proposed Breakpoints

	Current M45 Breakpoint					
Organism	S	I	R	Source of PCN BP	PCN ECV (tentative)	PK/PD cutoff
Abiotrophia/ Granulicatella	≤0.12	0.25-2	≥4	Viridans Strep	2	2-4
Aerococcus	≤0.12	0.25-2	≥4	Viridans Strep	0.12	
Corynebacterium	≤0.12	0.25-2	≥4	Viridans Strep	≥0.5	
Erysipelothrix	≤0.12	-	-	Viridans Strep	≤0.12	
Gemella	≤0.12	0.25-2	≥4	Viridans Strep	0.12	
Lactococcus	≤1	2	≥4	MIC distribution	2-4	
Bacillus	≤0.12	-	≥0.25	Staphylococcus	0.12	
Micrococcus	≤0.12	-	≥0.25	Staphylococcus	0.5	
Lactobacillus	≤8	-	-	Enterococcus	0.5-2	
Leuconostoc	≤8	-	-	Enterococcus	4	
Pediococcus	≤8	-	-	Enterococcus	1	
Listeria	≤2	-	-	M100 S15 (2005)	~1	
Rothia mucilaginosa	≤0.12	0.25-2	≥4	MIC distributions	0.125	

Some BPs are below ECV (red)

M45 TETRACYCLINE BREAKPOINTS

Tetracycline の MIC ブレイクポイントが以下のように承認された（投票：賛成 14，反対 0，棄権 0，欠席 0）；*Aerococcus* (S≤0.5, I 1, R≥2 μg/mL), *Campylobacter* (S≤2, I 4, R≥8 μg/mL), *Corynebacterium* (S≤2, I 4, R≥8 μg/mL), HACEK (S≤1, I 2, R≥4 μg/mL), *Lactococcus* (S≤1, I 2, R≥4 μg/mL), and *Vibrio* (S≤1, I 2, R≥4 μg/mL)

Doxycycline の MIC ブレイクポイントが以下のように承認された（投票：賛成 14，反対 0，棄権 0，欠席 0）；*Campylobacter* (S≤1, I 2, R≥4 μg/mL), *Corynebacterium* (S≤1, I 2, R≥4 μg/mL), and *Vibrio* (S≤1, I 2, R≥4 μg/mL)

***Leuconostoc* に対する minocycline の MIC ブレイクポイント; S≤1, I 2, R≥4 μg/mL が承認された（投票：賛成 14，反対 0，棄権 0，欠席 0）**

＊参考：New Breakpoints Set at the ECV

Organism		NEW			OLD		
	T (ECV)	S	I	R	S	I	R
Aerococcus	≤0.5	0.5	1	2	2	4	8
Aeromonas	TBD	TBD, based on ECV			4	8	16
Bacillus	ND	Evaluate old data for ECV, TBD			4	8	16
Campylobacter	~1-2	2	4	8	4	8	16
Campylobacter, doxycycline	~0.5-1	1	2	4	2	4	8
Corynebacterium	~2	2	4	8	4	8	16
Corynebactrium, doxycycline	~1	1	2	4	4	8	16
HACEK	~1	1	2	4	2	4	8
Lactococcus	~1	1	2	4	2	4	8
Leuconostoc, Minocycline	~1-2	1	2	4	4	8	16
M catarrhalis	2	2	4	8	2	4	8
Pasteurella	~1	1	-	-	1	-	-
Pasteurella	~1	0.5	-	-	0.5	-	-
Vibrio Tet & Doxy	~0.5-1	1	2	4	4	8	16

REPORTING OF ANTIMICROBIAL AGENTS FOR BACTERIA ISOLATED FROM CSF

表 1 の序文の CSF 警告欄から「フルオロキノロン系抗菌薬」を削除することが提案され，承認された（投票：賛成 13，反対 0，棄権 0，欠席 1）

＊参考：Current CSF Warning Box in Introduction to Tables 1

"Warning": Do not report the following antimicrobial agents for bacteria isolated from CSF. These are not the drugs of choice and may not be effective for treating CSF infections caused by the bacteria included in Tables 2A through 2J:

- Agents administered by oral route only
- First- and second-generation cephalosporins and cephamycins
- Doripenem, ertapenem, and imipenem
- Clindamycin
- Lefamulin
- Macrolides
- Tetracyclines
- Fluoroquinolones

Refer to Glossary I for individual agents within the drug classes listed above.

＊参考：Levofloxacin, Moxifloxacin, and Ciprofloxacin Data（Organisms/Organism Group）

	Ciprofloxacin	Levofloxacin	Moxifloxacin
Enterobacterales	X	X	
Pseudomonas aeruginosa	X	X	
Acinetobacter spp.	X	X	
Burkholderia cepacia complex		X	
Stenotrophomonas maltophilia		X	
Other non-Enterobacterales	X	X	
Staphylococcus spp.	X	X	X
Enterococcus spp.			
Haemophilus influenzae and *Haemophilus parainfluenzae*	X	X	X
Streptococcus pneumoniae		X	X
Beta-hemolytic *Streptococcus* spp.		X	
Streptococcus spp. Viridans Group		X	
Neisseria meningitidis	X	X	
Anaerobes			X

＊参考：Summary

Ciprofloxacin	Levofloxacin	Moxifloxacin
Moderate penetration into CSF	High penetration into CSF	High penetration into CSF
Potentially enough penetration to treat some gram-negative bacilli; Not recommended for *Streptococcus pneumoniae* (but no breakpoints and not included in clinical guidelines)	Potentially enough penetration to treat multiple bacteria	Potentially enough penetration to treat multiple bacteria
Case reports/series of clinical use; experimental models	Limited/no clinical literature but trials for TB meningitis; experimental models	Case reports/series of clinical use; experimental models
Recommended as **alternative agent** for bacterial meningitis in clinical guidelines	Recommended as **alternative agent** for bacterial meningitis in tertiary resources	Recommended as **alternative agent** for bacterial meningitis in clinical guidelines

AZTREONAM TIER 4 TABLE 1A COMMENT

表 1A の Tier 4，aztreonam のコメントとして「メタロ-β-ラクタマーゼ産生の腸内細菌目細菌のリスクが高い患者を診療する施設では，施設内で設定されたカスケード報告規則に従い，aztreonam を Tier 3 の薬剤とみなすことができる」を追記することが提案され，承認された（投票：賛成 8，反対 3，棄権 0，欠席 6）

Table 1A. Enterobacterales (not including inducible AmpC producers and *Salmonella/Shigella*)[a]

Tier 1: Antimicrobial agents that are appropriate for routine, primary testing and reporting	Tier 2: Antimicrobial agents that are appropriate for routine, primary testing but may be reported following cascade reporting rules established at each institution	Tier 3: Antimicrobial agents that are appropriate for routine, primary testing in institutions that serve patients at high risk for MDROs but should only be reported following cascade reporting rules established at each institution	Tier 4: Antimicrobial agents that may warrant testing and reporting by clinician request if antimicrobial agents in other tiers are not optimal because of various factors
Ampicillin			
Cefazolin	Cefuroxime		
Cefotaxime or ceftriaxone[b]	Cefepime[c]		
	Ertapenem Imipenem Meropenem	Cefiderocol Ceftazidime-avibactam Imipenem-relebactam Meropenem-vaborbactam	
Amoxicillin-clavulanate Ampicillin-sulbactam			
Piperacillin-tazobactam			
Gentamicin	Tobramycin Amikacin	Plazomicin	
Ciprofloxacin Levofloxacin			
Trimethoprim-sulfamethoxazole			
	Cefotetan Cefoxitin		
	Tetracycline[d]		
			Aztreonam[g]
			Ceftaroline[b]
			Ceftazidime[b]
			Ceftolozane-tazobactam

Methods Application and Interpretation ワーキンググループ

DISK DIFFUSION REFERNECE VS STANDARD METHOD AD HOC WORKING GROUP REPORT

ディスク拡散法を「reference method」から「standard method」に再分類することが提案され，承認された（投票：賛成 14，反対 0，棄権 0，欠席 0）

＊参考：Outstanding Questions for Recategorizing Disk Diffusion as a “Standard Method”

Question	Answer
Do we have to go back and re-evaluate methods defined by CLSI using disk as the reference?	Group Consensus, “No”
Can disk diffusion be used by clinical laboratories as the comparator method when verifying / validating commercial AST systems?	• Disk diffusion remains a comparator method for verification/validation studies • Akin to other validated methods in a clinical laboratory • Disk diffusion must be verified by laboratories prior to use as it is an FDA-cleared method (CLIA) • Change of disk diffusion to a standardized method will be addressed in M52 and M68 documents (currently in progress)
Are the CLSI M100 “Table 3” tests considered reference methods? If so, how does this impact them?	See next slide please

Table	Supplemental Test	Use
3A	ESBL	Optional for ESBL detection
3C	mCIM/eCIM	Optional for carbapenemase detection
3D	Ceftazidime/avibactam +Aztreonam BDE	Optional for Ceftazidime-avibactam + Aztreonam MIC
3E	Colistin BDE	Optional for Colistin MIC
3G	Beta-lactamase	Required for Penicillin-S Staph isolates
3J	Inducible clindamycin resistance	Required for Erythromycin-R and Clindamycin-S *Staphylococcus, S. pneumoniae*, B-hemolytic Streptococcus
3L	HLAR	Screening test for Enterococcus

BDE, broth disk elution

Table	Test	Type
3F	Direct disk from positive blood cultures	For providing early susceptibility results from positive blood cultures, could be considered an optional supplemental
3K	Mupirocin HLR	For detecting high-level mupirocin resistance in *S. aureus*, could be considered an optional supplemental

RE-EVALUATION OF eCIM

表 3B および表 3C Introduction の mCIM と eCIM の記述として「セリン型カルバペネマーゼとメタロ-β-ラクタマーゼを共に産生する(co-producing）分離株では，偽陰性が生じやすい」というコメントを添えることが提案され，賛成された（投票：賛成 14，反対 0，棄権 0，欠席 0）

Test interpretation	eCIM – Interpret only when mCIM test is positive • Metallo-B-lactamase positive: – A ≥ 5-mm increase in zone diameter for eCIM vs zone diameter for mCIM (eg, mCIM = 6 mm; eCIM = 15 mm; zone diameter difference = 9 mm). For only the eCIM test, ignore pinpoint colonies within any zone of inhibition (see Figures 3B and 3C). – If the test isolate produces a metallo-B-lactamase, the activity of the carbapenemase will be inhibited in the presence of EDTA such that the meropenem in the disk will not be hydrolyzed as efficiently as in the tube without EDTA. The result is inhibition of the meropenem-susceptible *E. coli* and an increase in the zone diameter for the eCIM zone diameter compared with the mCIM zone diameter. • Metallo-B-lactamase ~~negative~~inconclusive, serine carbapenemase detected: – A ≤ 4-mm increase in zone diameter for the eCIM vs zone diameter of mCIM (eg, mCIM = 6 mm; eCIM = 8 mm; zone diameter difference = 2 mm). For only the eCIM test, ignore pinpoint colonies within any zone of inhibition (see Figure 3D). Isolates that co-produce a serine-carbapenemase and a metallo-B-lactamase may give an inconclusive eCIM result. An alternate method should be used rule out the presence of a metallo-B-lactamase – If the test isolate produces a serine carbapenemase, the activity of the carbapenemase will not be affected by the presence of EDTA and there will be no or marginal (≤ 4 mm) increase in zone diameter in the presence of EDTA compared with the mCIM zone diameter.

Table 3C. (Continued)

Test	mCIM Only or in Conjunction With eCIM		
Reporting	**mCIM Only**		
	mCIM Result	**eCIM Result**	**Report**
	Negative	Not set up	Carbapenemase not detected
	Positive	Not set up	Carbapenemase detected
	Indeterminate	Not set up	Testing inconclusive for the presence of carbapenemase. Call laboratory to discuss.[a]
	mCIM and eCIM Combination Test		
	mCIM Result	**eCIM Result**	**Report**
	Negative	Do not interpret	Carbapenemase not detected
	Positive	Negative	Serine carbapenemase detected; metallo-B-lactamase inconclusive[a]
	Positive	Positive	Metallo-B-lactamase detected
	Inconclusive	Do not interpret	Testing inconclusive for the presence of carbapenemase. Call laboratory to discuss.[a,b]

[a] If both a serine carbapenemase and a metallo-B-lactamase are co-produced by one organism, differentiation between enzymes will not be possible and false-negative eCIM results may occur, resulting in an inconclusive interpretation for metallo-B-lactamase detection.

[b] If **inconclusive** mCIM results are obtained on repeat testing, consider performing a different phenotypic test for carbapenemase detection (ie, CarbaNP), a test for carbapenemase genes or send isolate to a referral laboratory for further testing.

~~If both a serine carbapenemase and a metallo-B-lactamase are co-produced by one organism, differentiation between enzymes will not be possible and false-negative eCIM results may occur.~~

BURKHOLDERIA CEPACIA COMPLEX AST AD HOC WORKING GROUP REPORT

M100 の Table 2B-3 *Burkholderia cepacia* complex のブレイクポイントを削除することが提案され，承認された（投票：賛成 10，反対 4，棄権 0，欠席 0）

＊参考：Agar Dilution (AD) vs Broth Microdilution (BMD) Studies

		20 h			24 h		
Antibiotic	**Type**	**VME**	**ME**	**mE**	**VME**	**ME**	**mE**
Ceftazidime	≥I +2	11.1% (4/36)	-	22.2% (8/36)	5.6% (2/36)	-	13.9% (5/36)
	I+1 TO I-1	7.4% (6/81)	1.2% (1/81)	14.8% (12/81)	6.2% (5/81)	1.2% (1/81)	19.8% (16/81)
	≤I-2	-	0% (0/84)	4.8% (4/84)	-	1.2% (1/84)	7.1% (6/84)
Meropenem	≥I +2	14.7% (5/34)	-	29.4% (10/34)	8.8% (3/34)	-	26.5% (9/34)
	I+1 TO I-1	7.3% (11/150)	0% (0/150)	47.3% (71/150)	4.7% (7/150)	0.7% (1/150)	45.3% (68/150)
	≤I-2	-	0% (0/17)	0% (0/17)	-	0% (0/17)	5.9% (1/17)
Minocycline	≥I +2	15.2% (5/33)	-	18.2% (6/33)	9.1% (3/33)	-	12.1% (4/33)
	I+1 TO I-1	4.8% (4/83)	0% (0/83)	50.6% (42/83)	3.6% (3/83)	0% (0/83)	50.6% (42/83)
	≤I-2	-	0% (0/85)	0% (0/85)	-	0% (0/85)	0% (0/85)
TMP-SMX	≥R+1	21.3% (10/47)	-	NA	21.3% (10/47)	-	NA
	R+S	31.6% (24/76)	0% (0/76)	NA	31.6% (24/76)	1.3% (1/76)	NA
	≤S-1	-	0% (0/78)	NA	-	0% (0/78)	NA
Chloramphenicol	≥I +2	4.4% (3/68)	-	7.4% (5/68)	2.9% (2/68)	-	8.8% (6/68)
	I+1 TO I-1	8.3% (11/132)	0% (0/132)	37.9% (50/132)	7.6% (10/132)	0% (0/132)	36.4% (48/132)
	≤I-2	-	0% (0/1)	0% (0/1)	-	0% (0/1)	0% (0/1)
Levofloxacin	≥I +2	0% (0/61)	-	4.9% (3/61)	0% (0/61)	-	3.3% (2/61)
	I+1 TO I-1	3.4% (4/118)	0% (0/118)	28% (33/118)	1.7% (2/118)	0% (0/118)	29.7% (35/118)
	≤I-2	-	0% (0/22)	0% (0/22)	-	0% (0/22)	4.5% (1/22)
Acceptance criteria	≥I +2	<2%	ND	<5%	<2%	ND	<5%
	I+1 TO I-1	<10%	<10%	<40%	<10%	<10%	<40%
	≤I-2	ND	<2%	<5%	ND	<2%	<5%

＊参考：Disk Diffusion (DD) vs Broth Microdilution (BMD) Studies

		20 h			24 h		
Antibiotic	**Type**	**VME**	**ME**	**mE**	**VME**	**ME**	**mE**
Ceftazidime	≥I +2	22.2% (4/18)	-	5.6% (1/18)	21.1% (4/19)	-	10.5% (2/19)
	I+1 TO I-1	4.1% (2/49)	0% (0/49)	36.7% (18/49)	14.3% (8/56)	0% (0/56)	32.1% (18/56)
	≤I-2	-	1.5% (2/132)	1.5% (2/132)	-	0.8% (1/124)	1.6% (2/124)
Meropenem	≥I +2	0% (0/6)	-	16.7% (1/6)	20% (2/10)	-	10% (1/10)
	I+1 TO I-1	4.3% (6/141)	5.7% (8/141)	27% (38/141)	4.2% (6/144)	3.5% (5/144)	27.8% (40/144)
	≤I-2	-	5.8% (3/52)	3.8% (2/52)	-	6.7% (3/45)	4.4% (2/45)
Minocycline	≥I +2	7.7% (1/13)	-	15.4% (2/13)	15.8% (3/19)	-	26.3% (5/19)
	I+1 TO I-1	3.8% (3/80)	0% (0/80)	36.3% (29/80)	8.6% (7/81)	0% (0/81)	37% (30/81)
	≤I-2	-	1.9% (2/106)	0% (0/106)	-	2% (2/99)	0% (0/99)
TMP-SMX	≥R+1	10.3% (4/39)	-	0% (0/39)	9.8% (4/41)	-	2.4% (1/41)
	R+S	0% (0/18)	61.1% (11/18)	11.1% (2/18)	0% (0/16)	68.8% (11/16)	6.3% (1/16)
	≤S-1	-	3.5% (5/142)	19.7% (28/142)	-	3.5% (5/142)	19.7% (28/142)
Acceptance criteria	≥I +2	<2%	ND	<5%	<2%	ND	<5%
	I+1 TO I-1	<10%	<10%	<40%	<10%	<10%	<40%
	≤I-2	ND	<2%	<5%	ND	<2%	<5%

Methods Development and Standardization ワーキンググループ

RIFABUTIN REFERENCE SUSCEPTIBILITY TESTING METHOD AGAINST *Acinetobacter baumannii*

***Acinetobacter baumannii* に対する rifabutin の薬剤感受性試験における寒天希釈＋PIH (pyridoxal isonicotinoyl hydrazone) 法を，Tier 1 および Tier 2 QC 試験の reference method として支持することを，分科委員会の懸念を満たす情報を CLSI がさらに受け取ることを条件に提案され，承認された（投票：賛成 12，反対 2，棄権 0，欠席 0）**

PROPOSAL FOR AN AST METHOD FOR ZOSURABALPIN (RG6006)

Zosurabalpin (RG6006)の微量液体希釈法において，CAMHB＋20%熱不活化ウマ血清を用いて100%阻害で判定することが提案され，承認された（投票：賛成 13，反対 0，棄権 1，欠席 0）

Direct Blood Disk Diffusion Ad Hoc WG Report

血液培養陽性液から直接のディスク拡散法による薬剤感受性試験のブレイクポイントの進捗状況が示された。

	Enterobacterales 8-10h	Enterobacterales 16-18h	PA 8-10h	PA 16-18h	*Acinetobacter* 8-10h	*Acinetobacter* 16-18h
Ampicillin	AST SC approved new breakpoints 2/2022	AST SC approved current breakpoints 6/2020	N/A	N/A	N/A	N/A
Amp-sul	Unable to set breakpoints	Unable to set breakpoints	N/A	N/A	*Ad hoc* WG approved ---- breakpoints 12/2023	*Ad hoc* WG approved ---- breakpoints 12/2023
Aztreonam	AST SC approved current breakpoints 2/2021	AST SC approved current breakpoints 6/2020	Unable to set breakpoints	Unable to set breakpoints	N/A	N/A
Cefepime	*Ad hoc* WG approved new breakpoints (same as 16-18h direct) 11/2023	*Ad hoc* WG approved new breakpoints (same as 8-10h direct) 11/2023	Unable to set breakpoints 8/2023	AST SC approved current breakpoints 1/2023	AST SC approved current breakpoints 6/2023	AST SC approved current breakpoints 6/2023
Ceftazidime	AST SC approved current breakpoints 2/2021	AST SC approved current breakpoints 6/2020	Unable to set breakpoints 8/2023 but will present to AST SC	AST SC approved current breakpoints 6/2021	*Ad hoc* WG approved adoption of 16-18h breakpoints 8/2023	AST SC approved new breakpoints 6/2023
Ceftriaxone	AST SC approved current breakpoints 2/2021	AST SC approved current breakpoints 6/2020	N/A	N/A	AST SC approved current breakpoints 6/2023	AST SC approved new breakpoints 6/2023
Ciprofloxacin	AST SC approved new breakpoints 2/2022	AST SC approved new breakpoints 2/2022	AST SC approved new breakpoints 6/2021	AST SC approved current breakpoints 2/2021	AST SC approved current breakpoints 6/2023	AST SC approved current breakpoints 6/2023
Ertapenem	Unable to set breakpoints	Unable to set breakpoints	N/A	N/A	N/A	N/A
Meropenem	AST SC approved new breakpoints 2/2022	AST SC approved new breakpoints 2/2022	AST SC approved current breakpoints 2/2022	AST SC approved current breakpoints 2/2021	AST SC approved current breakpoints 6/2023	AST SC approved current breakpoints 6/2023
Pip-tazo	Unable to set breakpoints	Unable to set breakpoints	Unable to set breakpoints	Unable to set breakpoints	*Ad hoc* WG approved new breakpoints (same as 16-18h direct) 8/2023	*Ad hoc* WG approved new breakpoints (same as 8-10h direct) 8/2023
Tobramycin	AST SC approved current breakpoints 6/2023	AST SC approved current breakpoints 6/2023	AST SC approved current breakpoints 6/2023	AST SC approved current breakpoints 6/2023	AST SC approved current breakpoints 6/2023	AST SC approved current breakpoints 6/2023
Trimeth-sul	Unable to set breakpoints	AST SC approved current breakpoints 6/2020	N/A	N/A	AST SC approved current breakpoints 6/2023	AST SC approved current breakpoints 6/2023

今回，青色で示された薬剤/細菌グループと判定時間においてデータが審議され，以下のように承認された（投票：賛成 13，反対 0，棄権 1，欠席 0）

1) Cefepime /Enterobacterales (S≥23, I 19-22, R≤18 mm) for 8-10h and 16-18h.

2) Ceftazidime/*Acinetobacter* (S≥17, I 15-16, R≤14) for 8-10h.

3) Piperacillin-tazobactam /*Acinetobacter* (S≥19, I 17-18, R≤16) for 8-10h and 16-18h.

4) Ceftazidime/ *P. aeruginosa* (S≥18, R≤14) for 8-10h.

血液培養陽性液から直接のディスク拡散法による薬剤感受性試験の QC レンジが審議され，以下のように承認された（投票：賛成 13，反対 0，棄権 1，欠席 0）

***E. coli* 25922 ampicillin (15-22 mm), *E. coli* 35218 ampicillin-sulbactam (13-19 mm), *P. aeruginosa* 27853 ertapenem (13-21 mm), and *E. coli* 25922 trimethoprim-sulfamethoxazole (23-29 mm)**

Quality Control ワーキンググループ

1) meropenem/ANT3310 QC レンジ

***Acinetobacter baumannii* NTCC 13304 (0.12/8-1/8 µg/mL), *E. coli* ATCC 25922 (0.008/8 – 0.03/8 µg/mL), *K. pneumoniae* BAA-2814 (0.06/8 – 0.25/8 µg/mL), *P. aeruginosa* ATCC 27853 (0.12/8 – 0.5/8 µg/mL) の meropenem/ANT3310 QC レンジを承認した（投票：賛成 14, 反対 0，棄権 0，欠席 0）**

Drug Name:	Meropenem-ANT3310 (fixed 8 µg/mL)				Votes:		14/0/1/1 (For, Against, Absent, Abstain)			
QC Strain	**Range**	**% In**	**Mode**	**Dil**	**Shoulder**	**Media Mode**	**Lab Mode**	**M23 Range**	**Range Finder**	**Comments**
A. baumannii **NCTC 13304**	0.12/8 1/8	100	0.25/8	4	58.8% @ 0.5	0.25/8	0.25/8 (5), 0.5/8 (3)	0.12/8-0.5/8, (3) 95.8%	0.12/8-1/8, (4) 100%	Lab Variability, mode for 3 of 8 labs at top of range, 58.8% shoulder Routine QC
E. coli **ATCC 25922**	0.008/8-0.03/8	99.6	0.016/8	3	<5% @ 0.03	0.016/8 (3)	0.016/8 (8)	0.008/8-0.03/8, 99.6%	0.016/8, 98.3%	
K. pneumoniae **ATCC BAA-2814**	0.06/8-0.25/8	100	0.12/8	3	5% @ 0.12	0.016/8 (3)	0.12/8 (8)	0.06/8-0.25/8, 100%	0.12/8-0.25/8, 98.8%	Routine QC
P. aeruginosa **ATCC 27853**	0.12/8-0.5/8	98.3	0.25/8	3	25% @ 0.12	0.25/8 (3)	0.25/8 (7), 0.5/8 (1)	0.12/8-0.5/8, 98.3%	0.12/8-0.5/8, 98.3%	
ANT3310 only	Information only. Not for publication.									
A. baumannii **NCTC 13304**	64-256	100	128	3	7% @ 256	128 (3)	128 (8)	64-256, 100%	64-256, 100%	
E. coli **ATCC 25922**	32-128	99.6	64	3	<5% @ 128	64 (3)	64 (8)	32-128, 100%	64, 100%	
K. pneumoniae **ATCC BAA-2814**	32-128	97.9	256	3	44% @ 128	64 (2), 128 (1)	64 (5), 128 (3)	32-128, 97.9%	32-128, 97.9%	
P. aeruginosa **ATCC 27853**	128-512	100	256	3	NA	256 (3)	256 (8)	128-512, 100%	256, 100%	

2) BWC0977 QC レンジ

E. faecalis **ATCC 29212 (0.03 - 0.12 µg/mL),** ***E. coli*** **ATCC 25922 (0.03 – 0.25 µg/mL),** ***H. influenzae*** **ATCC 49247 (0.002 – 0.016 µg/mL),** ***P. aeruginosa*** **ATCC 27853 (0.12 – 1 µg/mL),** ***S. aureus*** **ATCC 29213 (0.004 – 0.03 µg/mL),** ***S. pneumoniae*** **ATCC 49619 (0.004 – 0.016 µg/mL) の BWC0977 QC レンジを承認した（投票：賛成 14，反対 0，棄権 0，欠席 0）**

Drug Name:	BWC0977				Votes:		14/0/1/1 (For, Against, Absent, Abstain) See previous slide for Table footnotes			
QC Strain	**Range**	**% In**	**Mode**	**Dil**	**Shoulder**	**Media Mode**	**Lab Mode**	**M23 Range**	**Range Finder**	**Comments**
E. faecalis **ATCC 29212**	0.03-0.12	100%	0.06	3	31.0% @ 0.03	0.06 (3)	0.03 (2), 0.06 (6)	0.03-0.12, 100%	0.03-0.12, 100%	Some lab variability
E. coli **ATCC 25922**	0.03-0.25	100%	0.12	4	83.1% @ 0.06	0.06 (2), 0.12 (1)	0.03 (1), 0.06 (4), 0.12 (3)	0.03-0.25, 100%	0.03-0.25, 100%	Media variability, lab variability, large shoulder.
H. influenzae **ATCC 49247**	0.002-0.016	98.8%	0.004	4	72.1% @ 0.008	0.004 (2), 0.008 (1)	0.002 (2), 0.004 (4), 0.008 (3)	0.002-0.016, 98.8%	0.002-0.016, 98.8%	Media variability, lab variability, bimodal MIC values (lab F), large shoulder
P. aeruginosa **ATCC 27853**	0.12-1	100%	0.5	4	94.2% @ 0.25	0.25 (2), 0.5 (1)	0.25 (5), 0.5 (3)	0.12-1, 100%	0.12-1, 100%	Media variability, lab variability, large shoulder
S. aureus **ATCC 29213**	0.004-0.03	100%	0.008	4	86.4% @ 0.016	0.008 (2), 0.016 (1)	0.004 (1), 0.008 (4), 0.016 (3)	0.004-0.03, 100%	0.004-0.03, 100%	Media variability, lab variability, large shoulder
S. pneumoniae **ATCC 49619**	0.004-0.016	95.9%	0.008	3	35.5% @ 0.004	0.008 (3)	0.004 (3), 0.008 (5)	0.004-0.016, 95.9%	0.004-0.016, 95.9%	Lab variability

3) ceftibuten-xeruborbactam QC レンジ

K. pneumoniae **ATCC 700603 (0.016/4 – 0.12/4 µg/mL),** ***K. pneumoniae*** **ATCC BAA-1705 (0.03/4 – 0.25/4 µg/mL),** ***K. pneumoniae*** **ATCC BAA-2814 (0.12/4 – 0.5/4 µg/mL) の ceftibuten-xeruborbactam QC レンジを承認した（投票：賛成 14，反対 0，棄権 0，欠席 0）**

Drug Name:	Ceftibuten-xeruborbactam (fixed 4 µg/mL)	Votes:	13/0/1/2 (For, Against, Absent, Abstain)

QC Strain	Range	% In	Mode	Dil	Shoulder	Media Mode	Lab Mode	M23 Range	Range Finder	Comments
K. pneumoniae **ATCC 700603**	0.016/4-0.12/4	97.1%	0.03/4	4	92.6% @ 0.06/4	0.016/4 (1), 0.03/4 (1), 0.06/4 (1)	0.016/4 (2), 0.03/4 (4), 0.06/4 (3)	0.016/4-0.12/4, 97.1%	0.008/4-0.12/4, 5 dilutions, 99.6%	Media and lab variability. Laboratory C bimodal 0.12/4, 0.06/4. Large shoulder
K. pneumoniae **ATCC BAA-1705**	0.03/4-0.25/4	100%	0.06/4 0.12/4	4	Bimodal 0.06/4-0.12/4	0.06/4 (1), 0.12/4 (2)	0.06/4 (3), 0.12/4 (5)	0.03/4-0.25/4, 100%	0.03/4-0.25/4, 100%	Media and lab variability. Bimodal MIC distribution.
K. pneumoniae **ATCC BAA-2814**	0.12/4-0.5/4	100%	0.25/4	3	9.8% @ 0.12/4	0.25/4 (3)	0.25/4 (8)	0.12/4-0.5/4, 100%	0.12/4-0.5/4, 100%	Routine QC

4) Debio 1452 QC レンジ

S. aureus ATCC 25923 の Debio 1452 QC レンジ（20 – 27 mm）を承認した（投票：賛成 14, 反対 0, 棄権 0, 欠席 0）

Drug Name:	Debio 1452 (0.1 µg disks)	Votes:	14/0/0/1 (For, Against, Absent, Abstain)

QC Strain	Range	% In	Median	mm	Media	Disk	Labs	Gavan	Range Finder	Comments
S. aureus **ATCC 25923**	~~20-28~~ 20-27	~~98.1~~ 97.1	24	~~9~~ 8	24 (2), 23 (1)	25 23	22 (1), 23 (2), 24 (2), 25 (3), 26 (1)	20-28, 98.1%, 9 mm	20-28, 98.1%, 9 mm	Disk variability 2mm, Media variability 1mm. Lab variability 5mm

5) ceftibuten-avibactam QC レンジ

E. coli ATCC 25922 (28 – 36 mm), _E. coli_ NCTC 13353 (28 – 34 mm), _K. pneumoniae_ ATCC 700603 (24 – 30 mm), _K. pneumoniae_ ATCC BAA-1705 (24 – 30 mm), _K. pneumoniae_ ATCC BAA-2814 (22 – 28 mm) の ceftibuten-avibactam QC レンジを承認した（投票：賛成 14, 反対 0, 棄権 0, 欠席 0）

Drug Name:	ceftibuten-avibactam 10/4 µg disks	Votes:	11/3/1/1 for ATCC 25922 and 14/0/1/1 for the other QC strains

QC Strain	Range	% In	Median	mm	Media	Disk	Labs	Gavan	Range Finder	Comments
E. coli **ATCC 25922**	28-36	99.6	32	9	32 (1), 33 (2)	32 (2)	29 (1), 32 (3), 33 (3), 35 (1)	29-35, 94.6%, 7 mm	28-36, 99.6%, 9 mm	Alternative 29-36, 97.1%, 8 mm,
E. coli **NCTC 13353**	~~27-35~~ 28-34	~~100~~ 98.9	31	~~9~~ 7	31 (3)	31 (2)	29 (2), 30 (2), 31 (1), 32 (2), 33 (1)	29-33, 87.2%, 5 mm	27-35 100%, 9 mm	Routine QC
K. pneumoniae **ATCC 700603**	24-30	96.8	27	7	27 (1), 28 (2)	27 (1), 28 (1)	26 (1), 27 (3), 28 (1), 29 (2)	24-30, 96.8%, 7 mm	24-31, 99.3%, 8 mm	Slight disk variability.
K. pneumoniae **ATCC BAA-1705**	24-30	97.6	27	7	27 (3)	27 (2)	26 (3), 27 (3), 28 (1), 29 (1)	24-30, 97.6%, 7 mm	24-31, 99.0%, 8 mm	
K. pneumoniae **ATCC BAA-2814**	22-28	99.5	25	7	24 (1), 25 (2)	25 (2)	24 (3), 25 (3), 26 (2), 27 (1)	22-28, 99.5%, 7 mm	22-28, 99.5%, 7 mm	Slightly overlaps range for ceftibuten alone.

次回の AST ミーティング

次回の CLSI（Clinical and Laboratory Standards Institute）AST（Antimicrobial Susceptibility Test）ミーティングは，2024 年 6 月 22 日～25 日に，米国イリノイ州シカゴで開催されることが報告された。

（文責：大楠清文）