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Zentralstelle der Länder
für Gesundheitsschutz
bei Arzneimitteln und
Medizinprodukten
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BS-IVDR-099



Product Service

EU Quality Management System Certificate (IVDR)

Pursuant to Regulation (EU) 2017/746 on in Vitro Diagnostic Medical Devices,
Annex IX Chapters I and III (Class C and B Devices excluding self-/near-patient-testing and
Companion Diagnostics)

No. V12 071067 0008 Rev. 00

Manufacturer: **Liofilchem S.r.l.**
Via Scozia
64026 Roseto degli Abruzzi (TE)
ITALY

SRN Manufacturer: Not available at the issuance date of this certificate

The Certification Body of TÜV SÜD Product Service GmbH certifies that the manufacturer has established, documented and implemented a quality management system as described in Article 10 (8) of the Regulation (EU) 2017/746 on in Vitro Diagnostic Medical Devices. Details on devices covered by the quality management system are described on the following page(s). The Report referenced below summarizes the result of the assessment and includes reference to relevant CS, harmonized standards, audit and test reports. The conformity assessment has been carried out according to Annex IX Chapter I and III of this regulation with a positive result. The quality management system assessment was accompanied by the assessment of technical documentation for devices selected on a representative basis. The certified quality management system is subject to periodical surveillance by TÜV SÜD Product Service GmbH. The surveillance assessment includes an assessment of the technical documentation for the device or devices concerned on the basis of further representative samples. For details and certificate validity see: [www.tuvsud.com/ps-cert?q=cert:V12_071067_0008_Rev. 00](http://www.tuvsud.com/ps-cert?q=cert:V12_071067_0008_Rev.00)

Report No.: ITA1674857

Valid from: 2022-07-25

Valid until: 2027-07-24

Issue date: 2022-07-25

Christoph Dicks
Head of Certification/Notified Body



EU Quality Management System Certificate (IVDR)

Pursuant to Regulation (EU) 2017/746 on in Vitro Diagnostic Medical Devices, Annex IX Chapters I and III (Class C and B Devices excluding self-/near-patient-testing and Companion Diagnostics)

No. V12 071067 0008 Rev. 00

Classification: B
Device Group: W0104 - MICROBIOLOGY (CULTURE)
Intended Purpose: IVR 0505 - Devices intended to be used to grow/isolate/identify and handle infectious agents

Classification: B
Device Group: W0104 - MICROBIOLOGY (CULTURE)
Intended Purpose: IVR 0503 - Devices intended to be used to detect the presence of, or exposure to an infectious agent including sexually transmitted agents

Classification: C
Device Group: W0104 - MICROBIOLOGY (CULTURE)
IVP Code: IVP 3002 - In vitro diagnostic devices which require knowledge regarding biochemistry
Intended Purpose: IVR 0505 - Devices intended to be used to grow/isolate/identify and handle infectious agents

The validity of this certificate depends on conditions and/or is limited to the following: \

DICHIARAZIONE DI CONFORMITÀ CE

La società Liofilchem® S.r.l., con Sede Legale in Via Scozia, 64026 Roseto degli Abruzzi (TE) Italia, in qualità di fabbricante dei dispositivi medico-diagnostici *in vitro* elencati nella tabella sotto riportata Revisione 37.3 del 26.05.2022

dichiara sotto la propria responsabilità

1. che i dispositivi sottoindicati soddisfano tutte le disposizioni applicabili della Direttiva 98/79/CE (Allegato III) recepita nella Legislazione Italiana dal Decreto Legislativo n° 332 del 8 settembre 2000;
2. che i dispositivi sottoindicati non sono inclusi nell'Allegato II, lista A e B della Direttiva 98/79/CE
3. che la documentazione tecnica di cui all'allegato III della direttiva Direttiva 98/79/CE è a disposizione delle autorità nazionali presso la sua sede e sarà conservata per 5 anni dall'ultima data di fabbricazione del prodotto;
4. che il processo di fabbricazione segue adeguati principi di assicurazione della qualità;
5. di aver attivato e di mantenere aggiornato, un sistema di sorveglianza post-produzione per il monitoraggio dei prodotti;
6. che i dispositivi sottoindicati sono stati messi in commercio muniti di marcatura CE.

EC DECLARATION OF CONFORMITY

The company Liofilchem® S.r.l., registered office in Via Scozia, 64026 Roseto degli Abruzzi (TE) Italy, as a manufacturer of the *in vitro* medical-diagnostic devices listed in the table below, Revision 37.3 of 26.05.2022

hereby certifies under its own responsibility

1. that the below mentioned devices comply with all the applicable provisions of Directive 98/79/EC (Annex III) and its relevant transposition into national law;
2. the below mentioned devices are not included in Annex II, List A and B of Directive 98/79/EC;
3. that the technical documentation referred to at Annex III of the Directive 98/79/EC is available for the national authorities in its facility and that this documentation shall be kept for 5 years after the last product has been manufactured;
4. that the manufacturing process follows suitable principles of quality assurance;
5. that, has implemented and keep up to date, a post-production surveillance system for monitoring the products;
6. that the below mentioned devices, were introduced into the market provided with CE mark.

Roseto degli Abruzzi (TE),
26.05.2022

Signature:



LIOFILCHEM s.r.l.
BACTERIOLOGY PRODUCTS
Via Scozia
64026 Roseto degli Abruzzi (TE)
Cod. Fisc. e Partita IVA 00530130673

Technical Director
(Dr. Silvio Brocco)

Table no.1

CODE	DESCRIPTION
90 mm agar plates	
11612	Chromatic Candida
11632	Chromatic Clostridium difficile
11640	Chromatic Colistin
11619	Chromatic CRE
11622	Chromatic ESBL
11629	Chromatic ESBL + AmpC
10599	Chromatic MRSA
11631	Chromatic OXA-48
11621	Chromatic VRE
11639	Chromatic GBS
2 sector agar plates	
CODE	DESCRIPTION
18021	Chromatic CRE / Chromatic ESBL
18023	Chromatic CRE / Chromatic OXA-48
18007	Chromatic Staph Aureus / MRSA
18011	Chromatic Detection / ESBL
18024	MSA / Chromatic MRSA
Tubes - Bottles	
CODE	DESCRIPTION
481110	Chromatic Candida
490010	Hemo-aerobic Culturing
490050	Hemo-aerobic Culturing Neonatal
490030	Hemo-aerobic Culturing Pediatric
490020	Hemo-anaerobic Culturing
490060	Hemo-anaerobic Culturing Neonatal
490040	Hemo-anaerobic Culturing Pediatric
Dip-Slide	
CODE	DESCRIPTION
50021	Dermatest
500222	Dermatest modified
500152	Uritest
51015	Uritest
51030	Uritest 2
500302	Uritest 2
51024	Uritest C
500242	Uritest C
51041	Uritest EC
500412	Uritest EC
500702	Uritest EF
51070	Uritest EF
51170	Uritest EF
500182	Uritest M
51018	Uritest M
51040	Uritest Malto
500402	Uritest Malto
51023	Uritest N
51123	Uritest N
500232	Uritest N
51014	Uritest Penta
500142	Uritest Penta
50020	Vagitest

CODE	DESCRIPTION
Dehydrated culture media	
610613	Chromatic candida
620613	Chromatic Candida
611619	Chromatic CRE
621619	Chromatic CRE
610629	Chromatic ESBL
620629	Chromatic ESBL
610615	Chromatic MRSA
620615	Chromatic MRSA
610617	Chromatic Strepto B
620617	Chromatic Strepto B
610501	VRE Agar Base
ComASP	
CODE	DESCRIPTION
75011	ComASP® Benzylpenicillin 0.002-32
75009	ComASP® Cefiderocol 0.0008-128
75004	ComASP® Ceftolozane-tazobactam / Ceftazidime-avibactam
75006	ComASP® Ceftolozane-tazobactam 0.008/4 – 128/4
75003	ComASP® Colistin / Piperacillin-tazobactam
75001	ComASP® Colistin 0.25-16
75010	ComASP® Oritavancin 0.001-16
75002	ComASP® Piperacillin-tazobactam 0.008/4-128/4
75005	ComASP® Vancomycin / Teicoplanin
75007	ComASP® Vancomycin 0.008-128
ID-AST Systems	
CODE	DESCRIPTION
79156	A.F. Genital System
74156	AF Genital System
71620	Anaerobe System
79620	Anaerobe System
71670	Copro System
79670	Copro System
71675	Copro System Plus
79675	Copro System Plus
71618	Enterosystem 18R
79618	Enterosystem 18R
71619	Enterosystem 24R
71714	Integral System Enterobacteria
79714	Integral System Enterobacteria
71724	Integral System Gardnerella
79724	Integral system Gardnerella
71718	Integral System Stafilococchi
79718	Integral System Stafilococchi
71720	Integral System Streptococchi
79720	Integral system Streptococchi
71822	Integral System Yeasts Plus
79822	Integral System Yeasts Plus
72592	Mycoplasma System Plus
79592	Mycoplasma System Plus
71679	Pathogenic System
71681	Pathogenic System AST
79681	Pathogenic System AST
76033	SensiQuattro Candida
79033	SensiQuattro Candida

CODE	DESCRIPTION
76031	SensiQuattro Gram-negative
79031	SensiQuattro Gram-negative
76032	SensiQuattro Gram-positive
79032	SensiQuattro Gram-positive
76010	SensiTest Gram-negative
79010	SensiTest Gram-negative
76020	SensiTest Gram-positive
79020	SensiTest Gram-positive
71630	Staf System 18R
79630	Staf System 18R
72560	Strepto System 12R
79560	Strepto System 12R
74161	Urin System Chrom
79161	Urin System Chrom
74160	Urin System Plus
79160	Urin System Plus
80258	AF Genital System Reagent
80252	Enterosystem 18R Reagent
80260	Identification System Reagent
NP Tests	
CODE	DESCRIPTION
76036	Rapid ESBL NP® Test
76046	RapidResa Polymyxin Acinetobacter NP® Test
Agar Dilution AST	
CODE	DESCRIPTION
77001	AD Fosfomycin 0.25-256
77061	AD Fosfomycin 0.25-256
EPT	
CODE	DESCRIPTION
78618	Entero Pluri Test
78619	Entero Pluri Test
78621	Oxi/ferm Pluri Test
78620	Oxi/ferm Pluri Test
Supplements	
CODE	DESCRIPTION
81088	Chromatic CRE supplement
81090	Chromatic ESBL + AmpC supplement
81089	Chromatic ESBL supplement
81078	Chromatic MRSA supplement
81083	Meropenem supplement
81062	Vancomycin supplement
CultiControl ATCC	
CODE	DESCRIPTION
89139	Bordetella bronchiseptica ATCC® 4617
89174	Acinetobacter baumannii ATCC® 19606
89141	Acinetobacter baumannii ATCC® BAA-747
89114	Actinomyces odontolyticus ATCC® 17929
89169	Aeromonas hydrophila ATCC® 35654
89119	Aeromonas hydrophila ATCC® 7966
89091	Aggregatibacter aphrophilus ATCC® 7901
89021	Aspergillus brasiliensis ATCC® 16404
89057	Aspergillus fumigatus ATCC® 204305
89155	Bacillus cereus ATCC® 10876

CODE	DESCRIPTION
89022	Bacillus Cereus ATCC® 11778
89023	Bacillus subtilis ATCC® 6633
89113	Bacteroides fragilis ATCC® 23745
89078	Bacteroides fragilis ATCC® 25285
89111	Bacteroides ovatus ATCC® 8483
89193	Bacteroides ovatus ATCC® BAA-1296
89079	Bacteroides thetaiotaomicron ATCC® 29741
89147	Burkholderia cepacia ATCC® 25416
89166	Burkholderia cepacia ATCC® 25608
89086	Campylobacter jejuni ATCC® 33291
89167	Campylobacter jejuni subsp. jejuni ATCC® 29428
89145	Campylobacter jejuni subsp. jejuni ATCC® 33560
89183	Candida albicans ATCC® 14053
89177	Candida albicans ATCC® 18804
89178	Candida albicans ATCC® 64124
89072	Candida albicans ATCC® 90028
89024	Candida albicans ATCC® 10231
89098	Candida krusei ATCC® 14243
89071	Candida parapsilosis ATCC® 22019
89097	Candida tropicalis ATCC® 750
89146	Citrobacter freundii ATCC® 43864
89159	Citrobacter freundii ATCC® 8090
89090	Clostridium difficile ATCC® 9689
89112	Clostridium histolyticum ATCC® 19401
89053	Clostridium perfringens ATCC® 13124
89059	Clostridium sordellii ATCC® 9714
89095	Clostridium sporogenes ATCC® 19404
89158	Cronobacter muytjensii ATCC® 51329
89138	Cronobacter sakazakii ATCC® 29544
89196	Eikenella corrodens ATCC® BAA-1152
89156	Enterobacter aerogenes ATCC® 13048
89200	Enterobacter cloacae ATCC® 49141
89065	Enterobacter cloacae subsp. cloacae ATCC® BAA-1143
89195	Enterococcus casseliflavus ATCC® 700327
89115	Enterococcus faecalis ATCC® 33186
89066	Enterococcus faecalis ATCC® 49532
89067	Enterococcus faecalis ATCC® 49533
89173	Enterococcus faecalis ATCC® 51299
89025	Enterococcus faecalis ATCC® 19433
89026	Enterococcus faecalis ATCC® 29212
89171	Enterococcus faecium ATCC® 19434
89117	Enterococcus faecium ATCC® 51559
89152	Enterococcus faecium ATCC® 6057
89172	Enterococcus faecium ATCC® BAA-2319
89184	Escherichia coli ATCC® 11303
89163	Escherichia coli ATCC® 35218
89027	Escherichia coli ATCC® 25922
89028	Escherichia coli ATCC® 8739
89118	Fusobacterium nucleatum ATCC® 25586
89099	Gardnerella vaginalis ATCC® 14018
89123	Haemophilus haemolyticus ATCC® 33390
89120	Haemophilus influenzae ATCC® 10211
89176	Haemophilus influenzae ATCC® 33391
89124	Haemophilus influenzae ATCC® 33533
89077	Haemophilus influenzae ATCC® 49247
89076	Haemophilus influenzae ATCC® 49766
89142	Haemophilus influenzae Type c ATCC® 9007

CODE	DESCRIPTION
89073	<i>Issatchenkia orientalis</i> ATCC ® 6258
89150	<i>Klebsiella pneumoniae</i> ATCC ® BAA-1144
89088	<i>Klebsiella pneumoniae</i> ATCC ® BAA-1705
89087	<i>Klebsiella pneumoniae</i> ATCC ® BAA-1706
89069	<i>Klebsiella pneumoniae</i> ATCC ® BAA-2146
89089	<i>Klebsiella pneumoniae</i> subsp. <i>pneumoniae</i> ATCC ® 13883
89199	<i>Klebsiella pneumoniae</i> subsp. <i>pneumoniae</i> ATCC ® 31488
89192	<i>Klebsiella pneumoniae</i> subsp. <i>pneumoniae</i> ATCC ® 4352
89070	<i>Klebsiella pneumoniae</i> subsp. <i>pneumoniae</i> ATCC ® 700603
89080	<i>Lactobacillus acidophilus</i> ATCC ® 4356
89100	<i>Lactobacillus fermentum</i> ATCC ® 9338
89055	<i>Lactobacillus paracasei</i> subsp. <i>paracasei</i> ATCC ® BAA-52
89081	<i>Lactobacillus leichmannii</i> ATCC ® 4797
89082	<i>Lactococcus lactis</i> ATCC ® 19435
89151	<i>Legionella pneumophila</i> subsp. <i>fraseri</i> ATCC ® 33156
89052	<i>Legionella pneumophila</i> subsp. <i>pneumophila</i> ATCC® 33152
89101	<i>Listeria grayi</i> ATCC ® 25401
89029	<i>Listeria innocua</i> ATCC® 33090
89030	<i>Listeria ivanovii</i> ATCC® 19119
89085	<i>Listeria monocytogenes</i> ATCC ® 13932
89148	<i>Listeria monocytogenes</i> ATCC ® 35152
89060	<i>Listeria monocytogenes</i> ATCC ® 7644
89143	<i>Listeria monocytogenes</i> ATCC ® BAA-751
89031	<i>Listeria monocytogenes</i> ATCC® 19111
89051	<i>Listeria monocytogenes</i> ATCC® 19115
89096	<i>Micrococcus luteus</i> ATCC ® 10240
89102	<i>Micrococcus luteus</i> ATCC ® 4698
89103	<i>Moraxella (Branhamella) catarrhalis</i> ATCC ® 25238
89074	<i>Neisseria gonorrhoeae</i> ATCC ® 19424
89075	<i>Neisseria gonorrhoeae</i> ATCC ® 31426
89104	<i>Neisseria gonorrhoeae</i> ATCC ® 49226
89122	<i>Neisseria gonorrhoeae</i> ATCC ® 49981
89164	<i>Neisseria meningitidis</i> ATCC ® 13090
89189	<i>Nocardia brasiliensis</i> ATCC ® 19296
89165	<i>Peptostreptococcus anaerobius</i> ATCC ® 27337
89094	<i>Plesiomonas shigelloides</i> ATCC ® 14029
89162	<i>Porphyromonas gingivalis</i> ATCC ® 33277
89134	<i>Prevotella melaninogenica</i> ATCC ® 25845
89135	<i>Propionibacterium acnes</i> ATCC® 11827
89190	<i>Proteus hauseri</i> ATCC ® 13315
89049	<i>Proteus mirabilis</i> ATCC® 12453
89083	<i>Proteus mirabilis</i> ATCC ® 29906
89105	<i>Proteus mirabilis</i> ATCC ® 35659
89106	<i>Proteus mirabilis</i> ATCC ® 43071
89032	<i>Proteus mirabilis</i> ATCC® 25933
89107	<i>Proteus vulgaris</i> ATCC ® 6380
89125	<i>Providencia stuartii</i> ATCC ® 33672
89033	<i>Pseudomonas aeruginosa</i> ATCC® 27853
89034	<i>Pseudomonas aeruginosa</i> ATCC® 9027
89108	<i>Pseudomonas aeruginosa</i> ATCC ® 10145
89109	<i>Pseudomonas aeruginosa</i> ATCC ® 15442

CODE	DESCRIPTION
89110	<i>Pseudomonas fluorescens</i> ATCC ® 13525
89035	<i>Rhodococcus equi</i> ATCC® 6939
89036	<i>Saccharomyces cerevisiae</i> ATCC® 9763
89154	<i>Salmonella enterica</i> subsp. <i>arizonae</i> ATCC ® 13314
89084	<i>Salmonella enterica</i> subsp. <i>enterica</i> serovar <i>Enteritidis</i> ATCC ® 13076
89185	<i>Salmonella enterica</i> subsp. <i>enterica</i> serovar <i>Hillingdon</i> ATCC® 9184
89161	<i>Salmonella enterica</i> subsp. <i>enterica</i> serovar <i>Paratyphi A</i> ATCC ® 9150
89197	<i>Salmonella enterica</i> subsp. <i>enterica</i> serovar <i>Typhimurium</i> ATCC ® 49416
89054	<i>Salmonella enterica</i> subsp. <i>enterica</i> serovar <i>Typhimurium</i> ATCC® 13311
89037	<i>Salmonella typhimurium</i> ATCC® 14028
89191	<i>Serratia marcescens</i> ATCC ® 14756
89121	<i>Serratia marcescens</i> ATCC ® 8100
89179	<i>Shigella boydii</i> ATCC ® 9207
89198	<i>Shigella flexneri</i> ATCC ® 9199
89038	<i>Shigella flexneri</i> ATCC® 12022
89058	<i>Shigella sonnei</i> ATCC ® 25931
89180	<i>Shigella sonnei</i> ATCC ® 9290
89040	<i>Staphylococcus aureus</i> ATCC® 25923
89041	<i>Staphylococcus aureus</i> ATCC® 29213
89042	<i>Staphylococcus aureus</i> ATCC® 33862
89043	<i>Staphylococcus aureus</i> ATCC® 43300
89044	<i>Staphylococcus aureus</i> ATCC® 6538
89182	<i>Staphylococcus aureus</i> subsp. <i>aureus</i> ATCC ® 9144
89137	<i>Staphylococcus aureus</i> subsp. <i>aureus</i> ATCC ® 19095
89116	<i>Staphylococcus aureus</i> subsp. <i>aureus</i> ATCC ® 33591
89181	<i>Staphylococcus aureus</i> subsp. <i>aureus</i> ATCC ® 49476
89093	<i>Staphylococcus aureus</i> subsp. <i>aureus</i> ATCC ® 700699
89170	<i>Staphylococcus aureus</i> subsp. <i>aureus</i> ATCC ® BAA-44
89092	<i>Staphylococcus aureus</i> subsp. <i>aureus</i> ATCC® 700698
89202	<i>Staphylococcus epidermidis</i> ATCC ® 14990
89045	<i>Staphylococcus epidermidis</i> ATCC® 12228
89126	<i>Staphylococcus haemolyticus</i> ATCC ® 29970
89153	<i>Staphylococcus saprophyticus</i> ATCC ® 15305
89133	<i>Staphylococcus xylosum</i> ATCC ® 29971
89149	<i>Stenotrophomonas maltophilia</i> ATCC ® 13637
89194	<i>Stenotrophomonas maltophilia</i> ATCC ® 17666
89046	<i>Streptococcus agalactiae</i> ATCC® 13813
89127	<i>Streptococcus anginosus</i> ATCC ® 33397
89061	<i>Streptococcus bovis</i> ATCC ® 33317
89128	<i>Streptococcus dysgalactiae</i> subsp. <i>equisimilis</i> ATCC ® 12388
89129	<i>Streptococcus mitis</i> ATCC ® 6249
89062	<i>Streptococcus mutans</i> ATCC ® 25175
89063	<i>Streptococcus pneumoniae</i> ATCC ® 27336
89175	<i>Streptococcus pneumoniae</i> ATCC ® 700671
89047	<i>Streptococcus pneumoniae</i> ATCC® 49619
89130	<i>Streptococcus pyogenes</i> ATCC ® 49399
89048	<i>Streptococcus pyogenes</i> ATCC® 19615

CODE	DESCRIPTION
89131	Streptococcus salivarius ATCC® 13419
89186	Streptococcus salivarius subsp. thermophilus ATCC® 19258
89064	Streptococcus sanguinis ATCC® 10556
89140	Trichophyton mentagrophytes ATCC® 9533
89144	Vibrio alginolyticus ATCC® 17749
89056	Vibrio parahaemolyticus ATCC® 17802
89050	Yersinia enterocolitica ATCC® 9610
89168	Yersinia enterocolitica subsp. enterocolitica ATCC® 23715
Antibiotic disc in cartridges	
CODE	DESCRIPTION
9004	Amikacin AK 30 µg
9004/1	Amikacin AK 30 µg
9191	Amoxicillin + Clavulanic acid AUG 3 (2+1) µg
9191/1	Amoxicillin + Clavulanic acid AUG 3 (2+1) µg
9133	Amoxicillin AML 10 µg
9133/1	Amoxicillin AML 10 µg
9151/1	Amoxicillin AML 2 µg
9151	Amoxicillin AML 2 µg
9179	Amoxicillin AML 25 µg
9179/1	Amoxicillin AML 25 µg
9005	Amoxicillin AML 30 µg
9005/1	Amoxicillin AML 30 µg
9048	Amoxicillin-clavulanic acid AUG 30 µg
9048/1	Amoxicillin-clavulanic acid AUG 30 µg
9255	Amoxicillin-clavulanic acid AUG 7.5 µg
9255/1	Amoxicillin-clavulanic acid AUG 7.5 µg
9137	Amphotericin B AMB 10 µg
9137/1	Amphotericin B AMB 10 µg
9071	Amphotericin B AMB 20 µg
9071/1	Amphotericin B AMB 20 µg
9006	Ampicillin AMP 10 µg
9006/1	Ampicillin AMP 10 µg
9115/1	Ampicillin AMP 2 µg
9115	Ampicillin AMP 2 µg
9031	Ampicillin-sulbactam AMS 20 µg
9031/1	Ampicillin-sulbactam AMS 20 µg
9122	Ampliclox (Ampicillin-cloxacillin) ACL 30 (25+5) µg
9122/1	Ampliclox (Ampicillin-cloxacillin) ACL 30 (25+5) µg
9105	Azithromycin AZM 15 µg
9105/1	Azithromycin AZM 15 µg
9007	Azlocillin AZL 75 µg
9007/1	Azlocillin AZL 75 µg
9008	Aztreonam ATM 30 µg
9008/1	Aztreonam ATM 30 µg
9051	Bacitracin BA 10 IU
9051/1	Bacitracin BA 10 IU
9009	Carbenicillin CAR 100 µg
9009/1	Carbenicillin CAR 100 µg
9165	Caspofungin CAS 5 µg
9165/1	Caspofungin CAS 5 µg
9010/1	Cefaclor 30 µg
9010	Cefaclor 30 µg
9052	Cefadroxil CDX 30 µg
9052/1	Cefadroxil CDX 30 µg

CODE	DESCRIPTION
9014	Cefamandole MA 30 µg
9014/1	Cefamandole MA 30 µg
9015	Cefazolin KZ 30 µg
9015/1	Cefazolin KZ 30 µg
9143	Cefepime + Clavulanic acid FEL 40 µg
9143/1	Cefepime + Clavulanic acid FEL 40 µg
9220	Cefepime FEP 10 µg
9220/1	Cefepime FEP 10 µg
9104	Cefepime FEP 30 µg
9104/1	Cefepime FEP 30 µg
9266/1	Cefiderocol FDC 30 µg
9266	Cefiderocol FDC 30 µg
9089	Cefixime CFM 5 µg
9089/1	Cefixime CFM 5 µg
9016	Cefoperazone CFP 30 µg
9016/1	Cefoperazone CFP 30 µg
9108	Cefoperazone CFP 75 µg
9108/1	Cefoperazone CFP 75 µg
9203	Cefotaxime + Clavulanic acid + Cloxacillin CTLC
9203/1	Cefotaxime + Clavulanic acid + Cloxacillin CTLC
9182	Cefotaxime + Clavulanic acid CTL 40 (30+10) µg
9182/1	Cefotaxime + Clavulanic acid CTL 40 (30+10) µg
9224	Cefotaxime + Cloxacillin CTC
9224/1	Cefotaxime + Cloxacillin CTC
9017	Cefotaxime CTX 30 µg
9017/1	Cefotaxime CTX 30 µg
9152	Cefotaxime CTX 5 µg
9152/1	Cefotaxime CTX 5 µg
9134/1	Cefotaxime CTX 75 µg
9081	Cefotetan CTT 30 µg
9081/1	Cefotetan CTT 30 µg
9144	Cefoxitin + Cloxacillin FOC 230 µg
9144/1	Cefoxitin + Cloxacillin FOC 230 µg
9018	Cefoxitin FOX 30 µg
9018/1	Cefoxitin FOX 30 µg
9185	Cefpirome CR 30 µg
9190	Cefpodoxime + Clavulanic acid PXL 11 (10+1) µg
9190/1	Cefpodoxime + Clavulanic acid PXL 11 (10+1) µg
9064	Cefpodoxime PX 10 µg
9064/1	Cefpodoxime PX 10 µg
9112	Cefprozil CPR 30 µg
9112/1	Cefprozil CPR 30 µg
9053/1	Cefsulodin CSD 30 µg
9053	Cefsulodin CSD 30 µg
9198	Ceftaroline CPT 30 µg
9198/1	Ceftaroline CPT 30 µg
9195	Ceftaroline CPT 5 µg
9195/1	Ceftaroline CPT 5 µg
9204	Ceftazidime + Clavulanic acid + Cloxacillin CALC
9204/1	Ceftazidime + Clavulanic acid + Cloxacillin CALC
9145	Ceftazidime + Clavulanic acid CAL 40 (30+10) µg
9145/1	Ceftazidime + Clavulanic acid CAL 40 (30+10) µg
9225	Ceftazidime + Cloxacillin CAC
9225/1	Ceftazidime + Cloxacillin CAC
9153	Ceftazidime CAZ 10 µg
9153/1	Ceftazidime CAZ 10 µg
9019	Ceftazidime CAZ 30 µg
9019/1	Ceftazidime CAZ 30 µg

CODE	DESCRIPTION
9206	Ceftazime-avibactam CZA 14 µg
9206/1	Ceftazime-avibactam CZA 14 µg
9205	Ceftazime-avibactam CZA 50 µg
9205/1	Ceftazime-avibactam CZA 50 µg
9101	Ceftibuten CTB 30 µg
9101/1	Ceftibuten CTB 30 µg
9054	Ceftizoxime CZX 30 µg
9054/1	Ceftizoxime CZX 30 µg
9242/1	Ceftobiprole BPR 5 µg
9242	Ceftobiprole BPR 5 µg
9246/1	Ceftolozane-tazobactam C/T 40 µg
9246	Ceftolozane-tazobactam C/T 40 µg
9020	Ceftriaxone CRO 30 µg
9020/1	Ceftriaxone CRO 30 µg
9232/1	Cefuroxime CXM 1 µg
9232	Cefuroxime CXM 1 µg
9021	Cefuroxime CXM 30 µg
9021/1	Cefuroxime CXM 30 µg
9011	Cephalexin CL 30 µg
9011/1	Cephalexin CL 30 µg
9013	Cephalothin KF 30 µg
9013/1	Cephalothin KF 30 µg
9055	Cephradine CE 30 µg
9055/1	Cephradine CE 30 µg
9128	Chloramphenicol C 10 µg
9128/1	Chloramphenicol C 10 µg
9022	Chloramphenicol C 30 µg
9022/1	Chloramphenicol C 30 µg
9057	Cinoxacin CIN 100 µg
9057/1	Cinoxacin CIN 100 µg
9056	Ciprofloxacin CIP 5 µg
9056/1	Ciprofloxacin CIP 5 µg
9098	Clarithromycin CLR 15 µg
9098/1	Clarithromycin CLR 15 µg
9146	Clindamycin CD 10 µg
9146/1	Clindamycin CD 10 µg
9047	Clindamycin CD 2 µg
9047/1	Clindamycin CD 2 µg
9097	Clotrimazole CLO 50 µg
9097/1	Clotrimazole CLO 50 µg
9058	Cloxacillin CX 5 µg
9058/1	Cloxacillin CX 5 µg
9023	Colistin sulfate CS 10 µg
9023/1	Colistin sulfate CS 10 µg
9184	Colistin sulfate CS 25 µg
9184/1	Colistin sulfate CS 25 µg
9141	Colistin Sulfate CS 30 IU
9141/1	Colistin Sulfate CS 30 IU
9090	Daptomycin DAP 30 µg
9090/1	Daptomycin DAP 30 µg
9093	Dicloxacillin DCX 1 µg
9093/1	Dicloxacillin DCX 1 µg
9194	Dipicolinic acid DP
9194/1	Dipicolinic acid DP
9154	Doripenem DOR 10 µg
9154/1	Doripenem DOR 10 µg
9059	Doxycycline DXT 30 µg
9059/1	Doxycycline DXT 30 µg

CODE	DESCRIPTION
9072	Econazole ECN 10 µg
9072/1	Econazole ECN 10 µg
9087	EDTA ED
9087/1	EDTA ED
9238/1	Eravacycline ERV 20 µg
9238	Eravacycline ERV 20 µg
9199	Ertapenem + Cloxacillin ET + CL
9199/1	Ertapenem + Cloxacillin ET + CL
9202	Ertapenem + Phenylboronic acid ET + BO
9202/1	Ertapenem + Phenylboronic acid ET + BO
9061	Ertapenem ETP 10 µg
9061/1	Ertapenem ETP 10 µg
9024	Erythromycin E 15 µg
9024/1	Erythromycin E 15 µg
9180/1	Erythromycin E 2 µg
9180	Erythromycin E 2 µg
9069	Fluconazole FLU 100 µg
9069/1	Fluconazole FLU 100 µg
9166	Fluconazole FLU 25 µg
9166/1	Fluconazole FLU 25 µg
9073	Flucytosine AFY 1 µg
9073/1	Flucytosine AFY 1 µg
9148	Flucytosine AFY 10 µg
9148/1	Flucytosine AFY 10 µg
9121	Fosfomicin FOS 100 µg
9121/1	Fosfomicin FOS 100 µg
9109	Fosfomicin FOS 200 µg
9109/1	Fosfomicin FOS 200 µg
9025	Fosfomicin FOS 50 µg
9025/1	Fosfomicin FOS 50 µg
9099	Furazolidon FR 50 µg
9099/1	Furazolidon FR 50 µg
9049	Fusidic acid FC 10 µg
9049/1	Fusidic acid FC 10 µg
9111	Fusidic acid FC 30 µg
9111/1	Fusidic acid FC 30 µg
9169	Gatifloxacin GAT 5 µg
9169/1	Gatifloxacin GAT 5 µg
9026	Gentamicin CN 10 µg
9026/1	Gentamicin CN 10 µg
9124	Gentamicin CN 120 µg
9124/1	Gentamicin CN 120 µg
9125	Gentamicin CN 30 µg
9125/1	Gentamicin CN 30 µg
9074	Griseofulvin AGF 10 µg
9074/1	Griseofulvin AGF 10 µg
9086	Imipenem + Cloxacillin IMI + CL
9183	Imipenem + EDTA IMI + ED 760 (10+750) µg
9183/1	Imipenem + EDTA IMI + ED 760 (10+750) µg
9085	Imipenem + Phenylboronic acid IMI + BO
9085/1	Imipenem + Phenylboronic acid IMI + BO
9079	Imipenem IMI 10 µg
9079/1	Imipenem IMI 10 µg
9107	Itraconazole ITC 50 µg
9107/1	Itraconazole ITC 50 µg
9139	Itraconazole ITC 8 µg
9139/1	Itraconazole ITC 8 µg
9027	Kanamycin K 30 µg

CODE	DESCRIPTION
9027/1	Kanamycin K 30 µg
9075	Ketoconazole KCA 10 µg
9075/1	Ketoconazole KCA 10 µg
9140	Ketoconazole KCA 15 µg
9140/1	Ketoconazole KCA 15 µg
9102	Levofloxacin LEV 5 µg
9102/1	Levofloxacin LEV 5 µg
9267	Levonadifloxacin LND 10 µg
9267/1	Levonadifloxacin LND 10 µg
9116	Lincomycin MY 15 µg
9116/1	Lincomycin MY 15 µg
9028	Lincomycin MY 2 µg
9028/1	Lincomycin MY 2 µg
9155	Linezolid LNZ 10 µg
9155/1	Linezolid LNZ 10 µg
9136	Linezolid LNZ 30 µg
9136/1	Linezolid LNZ 30 µg
9113	Lomefloxacin LOM 10 µg
9113/1	Lomefloxacin LOM 10 µg
9156	Mecillinam MEC 10 µg
9156/1	Mecillinam MEC 10 µg
9175/1	Meropenem + Cloxacillin MR + CL
9178	Meropenem + EDTA MR + ED
9178/1	Meropenem + EDTA MR + ED
9176	Meropenem + Phenylboronic acid MR + BO
9176/1	Meropenem + Phenylboronic acid MR + BO
9068	Meropenem MRP 10 µg
9068/1	Meropenem MRP 10 µg
9175	Meropenem + Cloxacillin MR + CL
9029/1	Methicillin MET 5 µg
9029	Methicillin MET 5 µg
9076	Metronidazole MTZ 5 µg
9076/1	Metronidazole MTZ 5 µg
9119/1	Metronidazole MTZ 50 µg
9119	Metronidazole MTZ 50 µg
9062	Mezlocillin MEZ 75 µg
9062/1	Mezlocillin MEZ 75 µg
9077	Miconazole MCL 10 µg
9077/1	Miconazole MCL 10 µg
9030	Minocycline MN 30 µg
9030/1	Minocycline MN 30 µg
9103	Moxifloxacin MXF 5 µg
9103/1	Moxifloxacin MXF 5 µg
9157	Mupirocin MUP 200 µg
9157/1	Mupirocin MUP 200 µg
9189	Mupirocin MUP 5 µg
9174	Nafcillin NAF 1 µg
9174/1	Nafcillin NAF 1 µg
9001	Nalidixic acid NA 30 µg
9001/1	Nalidixic acid NA 30 µg
9032	Neomycin N 30 µg
9032/1	Neomycin N 30 µg
9170	Netilmicin NET 10 µg
9170/1	Netilmicin NET 10 µg
9033	Netilmicin NET 30 µg
9033/1	Netilmicin NET 30 µg
9158	Nitrofurantoin F 100 µg
9158/1	Nitrofurantoin F 100 µg

CODE	DESCRIPTION
9034	Nitrofurantoin F 300 µg
9034/1	Nitrofurantoin F 300 µg
9181	Nitrofurantoin F 50 µg
9181/1	Nitrofurantoin F 50 µg
9209/1	Nitroxolin NI 30 µg
9209	Nitroxolin NI 30 µg
9035	Norfloxacin NOR 10 µg
9035/1	Norfloxacin NOR 10 µg
9063	Novobiocin NO 30 µg
9063/1	Novobiocin NO 30 µg
9117/1	Novobiocin NO 5 µg
9117	Novobiocin NO 5 µg
9078	Nystatin NY 100 IU
9078/1	Nystatin NY 100 IU
9080	Ofloxacin OFX 5 µg
9080/1	Ofloxacin OFX 5 µg
9201	Oritavancin ORI 5 µg
9201/1	Oritavancin ORI 5 µg
9036	Oxacillin OX 1 µg
9036/1	Oxacillin OX 1 µg
9135	Oxacillin OX 5 µg
9135/1	Oxacillin OX 5 µg
9002	Oxolinic acid OA 2 µg
9002/1	Oxolinic acid OA 2 µg
9065	Oxytetracycline OT 30 µg
9065/1	Oxytetracycline OT 30 µg
9091	Pefloxacin PEF 5 µg
9091/1	Pefloxacin PEF 5 µg
9130/1	Penicillin G P 1 IU
9130	Penicillin G P 1 IU
9037	Penicillin G P 10 IU
9037/1	Penicillin G P 10 IU
9127	Penicillin G P 2 IU
9127/1	Penicillin G P 2 IU
9171	Phenoxymethylpenicillin PV 10 µg
9171/1	Phenoxymethylpenicillin PV 10 µg
9193	Phenylboronic acid BO
9193/1	Phenylboronic acid BO
9003	Pipemidic acid PI 20 µg
9003/1	Pipemidic acid PI 20 µg
9038	Piperacillin PRL 100 µg
9038/1	Piperacillin PRL 100 µg
9159	Piperacillin PRL 30 µg
9159/1	Piperacillin PRL 30 µg
9100/1	Piperacillin-tazobactam TZP 110 µg
9100	Piperacillin-tazobactam TZP 110 µg
9160	Piperacillin-tazobactam TZP 36 µg
9160/1	Piperacillin-tazobactam TZP 36 µg
9066	Polymyxin B PB 100 IU
9066/1	Polymyxin B PB 100 IU
9120	Polymyxin B PB 300 IU
9120/1	Polymyxin B PB 300 IU
9167	Posaconazole POS 5 µg
9167/1	Posaconazole POS 5 µg
9039	Rifampicin RD 30 µg
9039/1	Rifampicin RD 30 µg
9118	Rifampicin RD 5 µg
9118/1	Rifampicin RD 5 µg

CODE	DESCRIPTION
9192	Rokitamycin ROK 30 µg
9192/1	Rokitamycin ROK 30 µg
9060	Roxithromycin RXT 15 µg
9060/1	Roxithromycin RXT 15 µg
9046	Sisomycin SIS 30 µg
9046/1	Sisomycin SIS 30 µg
9131	Sodium Fusidate FC 30 µg
9067	Spectinomycin SPC 100 µg
9067/1	Spectinomycin SPC 100 µg
9088	Spiramycin SP 100 µg
9088/1	Spiramycin SP 100 µg
9040	Streptomycin S 10 µg
9040/1	Streptomycin S 10 µg
9162	Streptomycin S 300 µg
9162/1	Streptomycin S 300 µg
9129/1	Sulbactam SU 20 µg
9129	Sulbactam SU 20 µg
9150	Sulfadiazine SUZ 300 µg
9150/1	Sulfadiazine SUZ 300 µg
9041	Sulfafurazole SF 300 µg
9041/1	Sulfafurazole SF 300 µg
9187	Sulfamethoxazole SMX 100 µg
9187/1	Sulfamethoxazole SMX 100 µg
9084	Sulfamethoxazole SMX 50 µg
9084/1	Sulfamethoxazole SMX 50 µg
9132	Sulfaprim SXT 50 µg
9132/1	Sulfaprim SXT 50 µg
9126	Sulfonamide S3 300 µg
9126/1	Sulfonamide S3 300 µg
9243/1	Tedizolid TZD 2 µg
9243	Tedizolid TZD 2 µg
9245/1	Tedizolid TZD 20 µg
9245	Tedizolid TZD 20 µg
9050	Teicoplanin TEC 30 µg
9050/1	Teicoplanin TEC 30 µg
9172	Telithromycin TEL 15 µg
9172/1	Telithromycin TEL 15 µg
9186	Temocillin TMO 30 µg
9186/1	Temocillin TMO 30 µg
9043	Tetracycline TE 30 µg
9043/1	Tetracycline TE 30 µg
9094	Tiamulin T 30 µg
9094/1	Tiamulin T 30 µg
9070	Ticarcillin TC 75 µg
9070/1	Ticarcillin TC 75 µg
9096	Ticarcillin-clavulanic acid TTC 85 µg
9096/1	Ticarcillin-clavulanic acid TTC 85 µg
9147	Tigecyclin TGC 15 µg
9147/1	Tigecyclin TGC 15 µg
9044	Tobramycin TOB 10 µg
9044/1	Tobramycin TOB 10 µg
9163	Tobramycin TOB 30 µg
9163/1	Tobramycin TOB 30 µg
9042	Trimethoprim – Sulfamethoxazole SXT 25 µg
9042/1	Trimethoprim – Sulfamethoxazole SXT 25 µg
9083	Trimethoprim TM 2.5 µg
9083/1	Trimethoprim TM 2.5 µg
9110	Trimethoprim TM 5 µg

CODE	DESCRIPTION
9110/1	Trimethoprim TM 5 µg
9082	Tylosin TY 30 µg
9082/1	Tylosin TY 30 µg
9045	Vancomycin VA 30 µg
9045/1	Vancomycin VA 30 µg
9164	Vancomycin VA 5 µg
9164/1	Vancomycin VA 5 µg
9168	Voriconazole VO 1 µg
9168/1	Voriconazole VO 1 µg
99002	ESBL disc kit (acc. to EUCAST)
99003	KPC&MBL disc kit (acc. to EUCAST)
99004	ESBL disc kit (acc. to EUCAST)
99005	ESBL disc kit (acc. to CLSI)
99006	ESBL (Chromos. Ind. AmpC) disc kit (acc. to EUCAST)
99007	KPC&MBL&OXA-48 disc kit (acc. to EUCAST)
99008	ESBL+AmpC screen disc kit
99009	AmpC disc kit
Antibiotic disc in canister	
CODE	DESCRIPTION
9004/2	Amikacin AK 30 µg
9133/2	Amoxicillin AML 10 µg
9005/2	Amoxicillin AML 30 µg
9048/2	Amoxicillin-clavulanic acid AUG 30 µg
9137/2	Amphotericin B AMB 10 µg
9071/2	Amphotericin B AMB 20 µg
9006/2	Ampicillin AMP 10 µg
9115/2	Ampicillin AMP 2 µg
9031/2	Ampicillin-sulbactam AMS 20 µg
9105/2	Azithromycin AZM 15 µg
9007/2	Azlocillin AZL 75 µg
9008/2	Aztreonam ATM 30 µg
9051/2	Bacitracin BA 10 IU
9009/2	Carbenicillin CAR 100 µg
9010/2	Cefaclor 30 µg
9052/2	Cefadroxil CDX 30 µg
9014/2	Cefamandole MA 30 µg
9015/2	Cefazolin KZ 30 µg
9143/2	Cefepime + Clavulanic acid FEL 40 µg
9104/2	Cefepime FEP 30 µg
9266/2	Cefiderocol FDC 30 µg
9089/2	Cefixime CFM 5 µg
9016/2	Cefoperazone CFP 30 µg
9108/2	Cefoperazone CFP 75 µg
9182/2	Cefotaxime + Clavulanic acid CTL 40 (30+10) µg
9017/2	Cefotaxime CTX 30 µg
9152/2	Cefotaxime CTX 5 µg
9018/2	Cefoxitin FOX 30 µg
9064/2	Cefpodoxime PX 10 µg
9053/2	Cefsulodin CSD 30 µg
9198/2	Ceftaroline CPT 30 µg
9195/2	Ceftaroline CPT 5 µg
9145/2	Ceftazidime + Clavulanic acid CAL 40 (30+10) µg
9153/2	Ceftazidime CAZ 10 µg
9019/2	Ceftazidime CAZ 30 µg
9206/2	Ceftazime-avibactam CZA 14 µg
9101/2	Ceftibuten CTB 30 µg

CODE	DESCRIPTION
9054/2	Ceftizoxime CZX 30 µg
9242/2	Ceftobiprole BPR 5 µg
9246/2	Ceftolozane-tazobactam C/T 40 µg
9020/2	Ceftriaxone CRO 30 µg
9232/2	Cefuroxime CXM 1 µg
9021/2	Cefuroxime CXM 30 µg
9011/2	Cephalexin CL 30 µg
9013/2	Cephalothin KF 30 µg
9055/2	Cephradine CE 30 µg
9022/2	Chloramphenicol C 30 µg
9057/2	Cinoxacin CIN 100 µg
9056/2	Ciprofloxacin CIP 5 µg
9098/2	Clarithromycin CLR 15 µg
9146/2	Clindamycin CD 10 µg
9047/2	Clindamycin CD 2 µg
9097/2	Clotrimazole CLO 50 µg
9058/2	Cloxacillin CX 5 µg
9023/2	Colistin sulfate CS 10 µg
9141/2	Colistin Sulfate CS 30 IU
9090/2	Daptomycin DAP 30 µg
9154/2	Doripenem DOR 10 µg
9059/2	Doxycycline DXT 30 µg
9238/2	Eravacycline ERV 20 µg
9061/2	Ertapenem ETP 10 µg
9024/2	Erythromycin E 15 µg
9180/2	Erythromycin E 2 µg
9166/2	Fluconazole FLU 25 µg
9148/2	Flucytosine AFY 10 µg
9121/2	Fosfomycin FOS 100 µg
9109/2	Fosfomycin FOS 200 µg
9025/2	Fosfomycin FOS 50 µg
9049/2	Fusidic acid FC 10 µg
9026/2	Gentamicin CN 10 µg
9124/2	Gentamicin CN 120 µg
9125/2	Gentamicin CN 30 µg
9079/2	Imipenem IMI 10 µg
9107/2	Itraconazole ITC 50 µg
9139/2	Itraconazole ITC 8 µg
9027/2	Kanamycin K 30 µg
9075/2	Ketoconazole KCA 10 µg
9102/2	Levofloxacin LEV 5 µg
9116/2	Lincomycin MY 15 µg
9028/2	Lincomycin MY 2 µg
9155/2	Linezolid LNZ 10 µg
9156/2	Mecillinam MEC 10 µg
9176/2	Meropenem + Phenylboronic acid MR + BO
9068/2	Meropenem MRP 10 µg
9029/2	Methicillin MET 5 µg
9119/2	Metronidazole MTZ 50 µg
9077/2	Miconazole MCL 10 µg
9030/2	Minocycline MN 30 µg
9103/2	Moxifloxacin MXF 5 µg
9157/2	Mupirocin MUP 200 µg
9189/2	Mupirocin MUP 5 µg
9174/2	Nafcillin NAF 1 µg
9001/2	Nalidixic acid NA 30 µg
9032/2	Neomycin N 30 µg
9033/2	Netilmicin NET 30 µg

CODE	DESCRIPTION
9158/2	Nitrofurantoin F 100 µg
9034/2	Nitrofurantoin F 300 µg
9181/2	Nitrofurantoin F 50 µg
9209/2	Nitroxolin NI 30 µg
9035/2	Norfloxacin NOR 10 µg
9063/2	Novobiocin NO 30 µg
9117/2	Novobiocin NO 5 µg
9078/2	Nystatin NY 100 IU
9080/2	Ofloxacin OFX 5 µg
9201/2	Oritavancin ORI 5 µg
9036/2	Oxacillin OX 1 µg
9002/2	Oxolinic acid OA 2 µg
9065/2	Oxytetracycline OT 30 µg
9091/2	Pefloxacin PEF 5 µg
9130/2	Penicillin G P 1 IU
9037/2	Penicillin G P 10 IU
9193/2	Phenylboronic acid BO
9003/2	Pipemidic acid PI 20 µg
9038/2	Piperacillin PRL 100 µg
9159/2	Piperacillin PRL 30 µg
9100/2	Piperacillin-tazobactam TZP 110 µg
9160/2	Piperacillin-tazobactam TZP 36 µg
9066/2	Polymyxin B PB 100 IU
9120/2	Polymyxin B PB 300 IU
9039/2	Rifampicin RD 30 µg
9118/2	Rifampicin RD 5 µg
9060/2	Roxithromycin RXT 15 µg
9046/2	Sisomycin SIS 30 µg
9067/2	Spectinomycin SPC 100 µg
9040/2	Streptomycin S 10 µg
9041/2	Sulfafurazole SF 300 µg
9243/2	Tedizolid TZD 2 µg
9050/2	Teicoplanin TEC 30 µg
9043/2	Tetracycline TE 30 µg
9094/2	Tiamulin T 30 µg
9070/2	Ticarillin TC 75 µg
9096/2	Ticarillin-clavulanic acid TTC 85 µg
9147/2	Tigecyclin TGC 15 µg
9044/2	Tobramycin TOB 10 µg
9042/2	Trimethoprim – Sulfamethoxazole SXT 25 µg
9083/2	Trimethoprim TM 2.5 µg
9110/2	Trimethoprim TM 5 µg
9045/2	Vancomycin VA 30 µg
9164/2	Vancomycin VA 5 µg
9168/2	Voriconazole VO 1 µg

MIC Test Strip

CODE	DESCRIPTION
92018	Amikacin AK 0.016-256 mg/L
920180	Amikacin AK 0.016-256 mg/L
920181	Amikacin AK 0.016-256 mg/L
920210	Amoxicillin AmL 0.016-256 mg/L
92021	Amoxicillin AmL 0.016-256 mg/L
920211	Amoxicillin AmL 0.016-256 mg/L
921800	Amoxicillin* - clavulanic acid (2 mg/L) AMC 0.016-256* mg/L
921801	Amoxicillin* - clavulanic acid (2 mg/L) AMC 0.016-256* mg/L

CODE	DESCRIPTION
92180	Amoxicillin* - clavulanic acid (2 mg/L) AMC 0.016-256* mg/L 30 MICTest
92024	Amoxicillin* - clavulanic acid (2/1) AUG 0.016-256* mg/L
920240	Amoxicillin* - clavulanic acid (2/1) AUG 0.016-256* mg/L
920241	Amoxicillin* - clavulanic acid (2/1) AUG 0.016-256* mg/L
92153	Amphotericin B AMB 0.002-32 mg/L
921531	Amphotericin B AMB 0.002-32 mg/L
921530	Amphotericin B AMB 0.002-32 mg/L 100 MICTest
920030	Ampicillin AMP 0.016-256 mg/L
920031	Ampicillin AMP 0.016-256 mg/L
92003	Ampicillin AMP 0.016-256 mg/L
92027	Ampicillin* - sulbactam (2/1) AMS 0.016-256* mg/L
920270	Ampicillin* - sulbactam (2/1) AMS 0.016-256* mg/L
920271	Ampicillin* - sulbactam (2/1) AMS 0.016-256* mg/L
92181	Ampicillin* - sulbactam (4 mg/L) SAM 0.016-256* mg/L
921810	Ampicillin* - sulbactam (4 mg/L) SAM 0.016-256* mg/L
921811	Ampicillin* - sulbactam (4 mg/L) SAM 0.016-256* mg/L
92155	Anidulafungin AND 0.002-32 mg/L
921551	Anidulafungin AND 0.002-32 mg/L
921550	Anidulafungin AND 0.002-32 mg/L 100 Test
92030	Azithromycin AZM 0.016-256 mg/L
920300	Azithromycin AZM 0.016-256 mg/L
920301	Azithromycin AZM 0.016-256 mg/L
92033	Aztreonam ATM 0.016-256 mg/L
920330	Aztreonam ATM 0.016-256 mg/L
920331	Aztreonam ATM 0.016-256 mg/L
92173	Aztreonam ATM 0.064-1024 mg/L
921730	Aztreonam ATM 0.064-1024 mg/L
921731	Aztreonam ATM 0.064-1024 mg/L
92019	Bacitracin BA 0.016-256 mg/L
920190	Bacitracin BA 0.016-256 mg/L
920191	Bacitracin BA 0.016-256 mg/L
92154	Caspofungin CAS 0.002-32 mg/L
921541	Caspofungin CAS 0.002-32 mg/L
921540	Caspofungin CAS 0.002-32 mg/L
920360	Cefaclor CEC 0.016-256 mg/L
92036	Cefaclor CEC 0.016-256 mg/L
920361	Cefaclor CEC 0.016-256 mg/L
92174	Cefazolin KZ 0.016-256 mg/L
921740	Cefazolin KZ 0.016-256 mg/L
921741	Cefazolin KZ 0.016-256 mg/L
92127	Cefepime FEP 0.002-32 mg/L
921270	Cefepime FEP 0.002-32 mg/L
921271	Cefepime FEP 0.002-32 mg/L
92126	Cefepime FEP 0.016-256 mg/L
921260	Cefepime FEP 0.016-256 mg/L
921261	Cefepime FEP 0.016-256 mg/L
92161	Cefepime/Cefepime + Clavulanic acid (4 mg/L) FEP/FEL 0.25-16 / 0.064-4 mg/L
921610	Cefepime/Cefepime + Clavulanic acid (4 mg/L) FEP/FEL 0.25-16 / 0.064-4 mg/L

CODE	DESCRIPTION
921611	Cefepime/Cefepime + Clavulanic acid (4 mg/L) FEP/FEL 0.25-16 / 0.064-4 mg/L
92067	Cefiderocol FDC 0,016-256 mg/L
920671	Cefiderocol FDC 0,016-256 mg/L
920670	Cefiderocol FDC 0,016-256 mg/L
92060	Cefixime CFM 0.016-256 mg/L
920601	Cefixime CFM 0.016-256 mg/L
920600	Cefixime CFM 0.016-256 mg/L
92023	Cefoperazone* - sulbactam (2/1) CPS 0.016-256* mg/L
920230	Cefoperazone* - sulbactam (2/1) CPS 0.016-256* mg/L
920231	Cefoperazone* - sulbactam (2/1) CPS 0.016-256* mg/L
92007	Cefotaxime CTX 0.002-32 mg/L
920070	Cefotaxime CTX 0.002-32 mg/L
920071	Cefotaxime CTX 0.002-32 mg/L
920061	Cefotaxime CTX 0.016-256 mg/L
92006	Cefotaxime CTX 0.016-256 mg/L
920060	Cefotaxime CTX 0.016-256 mg/L
92160	Cefotaxime/Cefotaxime + Clavulanic acid (4 mg/L) CTX/CTL 0.25-16/0.016-1 mg/L
921600	Cefotaxime/Cefotaxime + Clavulanic acid (4 mg/L) CTX/CTL 0.25-16/0.016-1 mg/L
921601	Cefotaxime/Cefotaxime + Clavulanic acid (4 mg/L) CTX/CTL 0.25-16/0.016-1 mg/L
920200	Cefotetan CTT 0.016-256 mg/L
920201	Cefotetan CTT 0.016-256 mg/L
92020	Cefotetan CTT 0.016-256 mg/L
92164	Cefotetan/Cefotetan + Cloxacillin CTT/CXT 0.5-32/0.5-32 mg/L
921641	Cefotetan/Cefotetan + Cloxacillin CTT/CXT 0.5-32/0.5-32 mg/L
921640	Cefotetan/Cefotetan + Cloxacillin CTT/CXT 0.5-32/0.5-32 mg/L
92066	Cefoxitin FOX 0.016-256 mg/L
920660	Cefoxitin FOX 0.016-256 mg/L
920661	Cefoxitin FOX 0.016-256 mg/L
92008	Cefpirome CR 0.016-256 mg/L
920080	Cefpirome CR 0.016-256 mg/L
920081	Cefpirome CR 0.016-256 mg/L
920050	Cefpodoxime PX 0.016-256 mg/L
92005	Cefpodoxime PX 0.016-256 mg/L
920051	Cefpodoxime PX 0.016-256 mg/L
920560	Ceftaroline CPT 0.002-32 mg/L
920561	Ceftaroline CPT 0.002-32 mg/L
92056	Ceftaroline CPT 0.002-32 mg/L
92049	Ceftaroline CPT 0.016-256 mg/L
920491	Ceftaroline CPT 0.016-256 mg/L
920490	Ceftaroline CPT 0.016-256 mg/L
92138	Ceftazidime CAZ 0.016-256 mg/L
921380	Ceftazidime CAZ 0.016-256 mg/L
921381	Ceftazidime CAZ 0.016-256 mg/L
92139	Ceftazidime*- avibactam CZA 0.016/4-256/4 mg/L
921390	Ceftazidime*- avibactam CZA 0.016/4-256/4 mg/L
921391	Ceftazidime*- avibactam CZA 0.016/4-256/4 mg/L
92159	Ceftazidime/Ceftazidime + Clavulanic acid (4 mg/L) CAZ/CAL 0.5-32/0.064-4 mg/L
921590	Ceftazidime/Ceftazidime + Clavulanic acid (4 mg/L) CAZ/CAL 0.5-32/0.064-4 mg/L

CODE	DESCRIPTION
921591	Ceftazidime/Ceftazidime + Clavulanic acid (4 mg/L) CAZ/CAL 0.5-32/0.064-4 mg/L
92058	Ceftibuten CTB 0.002-32 mg/L
920580	Ceftibuten CTB 0.002-32 mg/L
920581	Ceftibuten CTB 0.002-32 mg/L
920160	Ceftizoxime CZX 0.016-256 mg/L
920161	Ceftizoxime CZX 0.016-256 mg/L
92016	Ceftizoxime CZX 0.016-256 mg/L
92140	Ceftobiprole BPR 0.002-32 mg/L
921400	Ceftobiprole BPR 0.002-32 mg/L
921401	Ceftobiprole BPR 0.002-32 mg/L
92146	Ceftolozane-Tazobactam C/T 0.016/4-256/4 mg/L
921460	Ceftolozane-Tazobactam C/T 0.016/4-256/4 mg/L
921461	Ceftolozane-Tazobactam C/T 0.016/4-256/4 mg/L
920430	Ceftriaxone CRO 0.002-32 mg/L
92043	Ceftriaxone CRO 0.002-32 mg/L
920431	Ceftriaxone CRO 0.002-32 mg/L
92042	Ceftriaxone CRO 0.016-256 mg/L
920420	Ceftriaxone CRO 0.016-256 mg/L
920421	Ceftriaxone CRO 0.016-256 mg/L
921290	Cefuroxime CXM 0.016-256 mg/L
92129	Cefuroxime CXM 0.016-256 mg/L
921291	Cefuroxime CXM 0.016-256 mg/L
92039	Cephalothin KF 0.016-256 mg/L
920391	Cephalothin KF 0.016-256 mg/L
920390	Cephalothin KF 0.016-256 mg/L 0.016-256
92075	Chloramphenicol C 0.016-256 mg/L
920750	Chloramphenicol C 0.016-256 mg/L
920751	Chloramphenicol C 0.016-256 mg/L
92045	Ciprofloxacin CIP 0.002-32 mg/L
920450	Ciprofloxacin CIP 0.002-32 mg/L
920451	Ciprofloxacin CIP 0.002-32 mg/L
92048	Clarithromycin CLR 0.016-256 mg/L
920480	Clarithromycin CLR 0.016-256 mg/L
920481	Clarithromycin CLR 0.016-256 mg/L
92072	Clindamycin CD 0.016-256 mg/L
920720	Clindamycin CD 0.016-256 mg/L
920721	Clindamycin CD 0.016-256 mg/L
920440	Cloxacillin CX 0.016-256 mg/L
920441	Cloxacillin CX 0.016-256 mg/L
92044	Cloxacillin CX 0.016-256 mg/L
92141	Colistin CS 0.016-256 mg/L
921411	Colistin CS 0.016-256 mg/L
921410	Colistin CS 0.016-256 mg/L
921420	Colistin CS 0.064-1024 mg/L
921421	Colistin CS 0.064-1024 mg/L
92142	Colistin CS 0.064-1024 mg/L
92137	Dalbavancin DAL 0.002-32 mg/L
921370	Dalbavancin DAL 0.002-32 mg/L
921371	Dalbavancin DAL 0.002-32 mg/L
921451	Daptomycin DAP 0.016-256 mg/L
92145	Daptomycin DAP 0.016-256 mg/L
921450	Daptomycin DAP 0.016-256 mg/L
92080	Delafloxacin DLX 0.002-32 mg/L
920800	Delafloxacin DLX 0.002-32 mg/L
920801	Delafloxacin DLX 0.002-32 mg/L
92040	Doripenem DOR 0.002-32 mg/L
920401	Doripenem DOR 0.002-32 mg/L

CODE	DESCRIPTION
920400	Doripenem DOR 0.002-32 mg/L
92156	Doxycycline DXT 0.016-256 mg/L
921560	Doxycycline DXT 0.016-256 mg/L
921561	Doxycycline DXT 0.016-256 mg/L
920130	Enrofloxacin ENR 0.002-32 mg/L
92013	Enrofloxacin ENR 0.002-32 mg/L
920131	Enrofloxacin ENR 0.002-32 mg/L
92104	Eravacycline ERV 0.002-32 mg/L
921040	Eravacycline ERV 0.002-32 mg/L
921041	Eravacycline ERV 0.002-32 mg/L
921570	Ertapenem ETP 0.002-32 mg/L
92157	Ertapenem ETP 0.002-32 mg/L
921571	Ertapenem ETP 0.002-32 mg/L
92169	Ertapenem/Ertapenem + Cloxacillin ETP/ECX 0.125-8/ 0.032-2 mg/L
921690	Ertapenem/Ertapenem + Cloxacillin ETP/ECX 0.125-8/ 0.032-2 mg/L
921691	Ertapenem/Ertapenem + Cloxacillin ETP/ECX 0.125-8/ 0.032-2 mg/L
92168	Ertapenem/Ertapenem + Phenylboronic acid ETP/EBO 0.125-8/0.032-2 mg/L
921680	Ertapenem/Ertapenem + Phenylboronic acid ETP/EBO 0.125-8/0.032-2 mg/L
921681	Ertapenem/Ertapenem + Phenylboronic acid ETP/EBO 0.125-8/0.032-2 mg/L
92051	Erythromycin E 0.016-256 mg/L
920511	Erythromycin E 0.016-256 mg/L
920510	Erythromycin E 0.016-256 mg/L
92170	Ethambutol EB 0.016-256 mg/L
921701	Ethambutol EB 0.016-256 mg/L
921700	Ethambutol EB 0.016-256 mg/L
92172	Ethionamide ET 0.016-256 mg/L
921720	Ethionamide ET 0.016-256 mg/L
921721	Ethionamide ET 0.016-256 mg/L
92147	Fluconazole FLU 0.016-256 mg/L
921470	Fluconazole FLU 0.016-256 mg/L
921471	Fluconazole FLU 0.016-256 mg/L
92149	Flucytosine FC 0.002-32 mg/L
921490	Flucytosine FC 0.002-32 mg/L
921491	Flucytosine FC 0.002-32 mg/L
92078	Fosfomicin FOS 0.016-256 mg/L
920780	Fosfomicin FOS 0.016-256 mg/L
920781	Fosfomicin FOS 0.016-256 mg/L
92079	Fosfomicin FOS 0.064-1024 mg/L
920790	Fosfomicin FOS 0.064-1024 mg/L
920791	Fosfomicin FOS 0.064-1024 mg/L
920500	Fosmidomycin FOM 0.016-256 mg/L
920501	Fosmidomycin FOM 0.016-256 mg/L
92050	Fosmidomycin FOM 0.016-256 mg/L
92002	Fusidic acid FU 0.016-256 mg/L
920020	Fusidic acid FU 0.016-256 mg/L
920021	Fusidic acid FU 0.016-256 mg/L
920110	Gatifloxacin GAT 0.002-32 mg/L
920111	Gatifloxacin GAT 0.002-32 mg/L
92011	Gatifloxacin GAT 0.002-32 mg/L
92035	Gemifloxacin GEM 0.002-32 mg/L
920350	Gemifloxacin GEM 0.002-32 mg/L
920351	Gemifloxacin GEM 0.002-32 mg/L
92009	Gentamicin CN 0.016-256 mg/L

CODE	DESCRIPTION
920090	Gentamicin CN 0.016-256 mg/L
920091	Gentamicin CN 0.016-256 mg/L
920100	Gentamicin CN 0.064-1024 mg/L
920101	Gentamicin CN 0.064-1024 mg/L
92010	Gentamicin CN 0.064-1024 mg/L
92054	Imipenem IMI 0.002-32 mg/L
920541	Imipenem IMI 0.002-32 mg/L
920540	Imipenem IMI 0.002-32 mg/L
92068	Imipenem IMI 0.016-256 mg/L
920680	Imipenem IMI 0.016-256 mg/L
920681	Imipenem IMI 0.016-256 mg/L
92166	Imipenem/Imipenem + EDTA IMI/IMD 0.125-8/0.032-2 mg/L
921660	Imipenem/Imipenem + EDTA IMI/IMD 0.125-8/0.032-2 mg/L
921661	Imipenem/Imipenem + EDTA IMI/IMD 0.125-8/0.032-2 mg/L
92162	Imipenem/Imipenem + EDTA IMI/IMD 4-256/1-64 mg/L
921620	Imipenem/Imipenem + EDTA IMI/IMD 4-256/1-64 mg/L
921621	Imipenem/Imipenem + EDTA IMI/IMD 4-256/1-64 mg/L
92076	Imipenem-relebactam I/R 0.002/4-32/4
920760	Imipenem-relebactam I/R 0.002/4-32/4
920761	Imipenem-relebactam I/R 0.002/4-32/4
92184	Isavuconazole IVU 0.002-32 mg/L
921840	Isavuconazole IVU 0.002-32 mg/L
921841	Isavuconazole IVU 0.002-32 mg/L
92171	Isoniazide IZ 0.016-256 mg/L
921710	Isoniazide IZ 0.016-256 mg/L
921711	Isoniazide IZ 0.016-256 mg/L
92148	Itraconazole ITC 0.002-32 mg/L
921480	Itraconazole ITC 0.002-32 mg/L
921481	Itraconazole ITC 0.002-32 mg/L
92034	Kanamycin K 0.016-256 mg/L
920340	Kanamycin K 0.016-256 mg/L
920341	Kanamycin K 0.016-256 mg/L
921510	Ketoconazole KE 0.002-32 mg/L
921511	Ketoconazole KE 0.002-32 mg/L
92151	Ketoconazole KE 0.002-32 mg/L
92064	Lefamulin LMU 0,016-256 mg/L
920641	Lefamulin LMU 0,016-256 mg/L
920640	Lefamulin LMU 0,016-256 mg/L
920810	Levofloxacin LEV 0.002-32 mg/L
920811	Levofloxacin LEV 0.002-32 mg/L
92081	Levofloxacin LEV 0.002-32 mg/L
921350	Linezolid LNZ 0.016-256 mg/L
921351	Linezolid LNZ 0.016-256 mg/L
92135	Linezolid LNZ 0.016-256 mg/L
920170	Mecillinam MEC 0.016-256 mg/L
92017	Mecillinam MEC 0.016-256 mg/L
920171	Mecillinam MEC 0.016-256 mg/L
92084	Meropenem MRP 0.002-32 mg/L
920841	Meropenem MRP 0.002-32 mg/L
920840	Meropenem MRP 0.002-32 mg/L
92085	Meropenem MRP 0.016-256 mg/L
920850	Meropenem MRP 0.016-256 mg/L
920851	Meropenem MRP 0.016-256 mg/L

CODE	DESCRIPTION
92165	Meropenem/Meropenem + EDTA MRP/MRD 0.125-8/0.032-2 mg/L
921650	Meropenem/Meropenem + EDTA MRP/MRD 0.125-8/0.032-2 mg/L
921651	Meropenem/Meropenem + EDTA MRP/MRD 0.125-8/0.032-2 mg/L
92167	Meropenem/Meropenem + Phenylboronic acid MRP/MBO 0.125-8/0.032-2 mg/L
921670	Meropenem/Meropenem + Phenylboronic acid MRP/MBO 0.125-8/0.032-2 mg/L
921671	Meropenem/Meropenem + Phenylboronic acid MRP/MBO 0.125-8/0.032-2 mg/L
92074	Meropenem-vaborbactam (8 mg/L) M/V 0.016-256mg/L
920740	Meropenem-vaborbactam (8 mg/L) M/V 0.016-256mg/L
920741	Meropenem-vaborbactam (8 mg/L) M/V 0.016-256mg/L
92087	Metronidazole MTZ 0.016-256 mg/L
920870	Metronidazole MTZ 0.016-256 mg/L
920871	Metronidazole MTZ 0.016-256 mg/L
921820	Micafungin MYC 0.002-32 mg/L
921821	Micafungin MYC 0.002-32 mg/L
92182	Micafungin MYC 0.002-32 mg/L
92032	Minocycline MN 0.016-256 mg/L
920321	Minocycline MN 0.016-256 mg/L
920320	Minocycline MN 0.016-256 mg/L
92090	Moxifloxacin MXF 0.002-32 mg/L
920900	Moxifloxacin MXF 0.002-32 mg/L
920901	Moxifloxacin MXF 0.002-32 mg/L
920380	Mupirocin MUP 0.064-1024 mg/L
92038	Mupirocin MUP 0.064-1024 mg/L
920381	Mupirocin MUP 0.064-1024 mg/L
92132	Nalidixic acid NA 0.016-256 mg/L
921320	Nalidixic acid NA 0.016-256 mg/L
921321	Nalidixic acid NA 0.016-256 mg/L
92093	Netilmicin NET 0.016-256 mg/L
920930	Netilmicin NET 0.016-256 mg/L
920931	Netilmicin NET 0.016-256 mg/L
920220	Nitrofurantoin F 0.032-512 mg/L
92022	Nitrofurantoin F 0.032-512 mg/L
920221	Nitrofurantoin F 0.032-512 mg/L
920960	Norfloxacin NOR 0.016-256 mg/L
920961	Norfloxacin NOR 0.016-256 mg/L
92096	Norfloxacin NOR 0.016-256 mg/L
920990	Ofloxacin OFX 0.002-32 mg/L
92099	Ofloxacin OFX 0.002-32 mg/L
920991	Ofloxacin OFX 0.002-32 mg/L
92071	Omadacycline OMC 0.002-32 mg/L
920710	Omadacycline OMC 0.002-32 mg/L
920711	Omadacycline OMC 0.002-32 mg/L
92015	Oxacillin OX 0.016-256 mg/L
920150	Oxacillin OX 0.016-256 mg/L
920151	Oxacillin OX 0.016-256 mg/L
92041	Pefloxacin PEF 0.016-256 mg/L
920410	Pefloxacin PEF 0.016-256 mg/L
920411	Pefloxacin PEF 0.016-256 mg/L
92103	Penicillin G P 0.002-32 mg/L
921030	Penicillin G P 0.002-32 mg/L
921031	Penicillin G P 0.002-32 mg/L

CODE	DESCRIPTION
921020	Penicillin G P 0.016-256 mg/L
92102	Penicillin G P 0.016-256 mg/L
921021	Penicillin G P 0.016-256 mg/L
92105	Piperacillin PIP 0.016-256 mg/L
921050	Piperacillin PIP 0.016-256 mg/L
921051	Piperacillin PIP 0.016-256 mg/L
921080	Piperacillin* - tazobactam TZP 0.016-256* mg/L
921081	Piperacillin* - tazobactam TZP 0.016-256* mg/L
92108	Piperacillin* - tazobactam TZP 0.016-256* mg/L
92070	Plazomicin PLZ 0.016-256 mg/L
920700	Plazomicin PLZ 0.016-256 mg/L
920701	Plazomicin PLZ 0.016-256 mg/L
92004	Polymyxin B PB 0.064-1024 mg/L
920041	Polymyxin B PB 0.064-1024 mg/L
920040	Polymyxin B PB 0.064-1024 mg/L
92152	Posaconazole POS 0.002-32 mg/L
921520	Posaconazole POS 0.002-32 mg/L
921521	Posaconazole POS 0.002-32 mg/L
92026	Quinupristin-dalfopristin QDA 0.002-32 mg/L
920260	Quinupristin-dalfopristin QDA 0.002-32 mg/L
920261	Quinupristin-dalfopristin QDA 0.002-32 mg/L
920010	Rifampicin RD 0.002-32 mg/L
920011	Rifampicin RD 0.002-32 mg/L
92001	Rifampicin RD 0.002-32 mg/L
92025	Rifampicin RD 0.016-256 mg/L
920250	Rifampicin RD 0.016-256 mg/L
920251	Rifampicin RD 0.016-256 mg/L
92014	Spectinomycin SPC 0.064-1024 mg/L
920140	Spectinomycin SPC 0.064-1024 mg/L
920141	Spectinomycin SPC 0.064-1024 mg/L
920460	Spiramycin SP 0.002-32 mg/L
920461	Spiramycin SP 0.002-32 mg/L
92046	Spiramycin SP 0.002-32 mg/L
92112	Streptomycin S 0.016-256 mg/L
921120	Streptomycin S 0.016-256 mg/L
921121	Streptomycin S 0.016-256 mg/L
92111	Streptomycin S 0.064-1024 mg/L
921110	Streptomycin S 0.064-1024 mg/L
921111	Streptomycin S 0.064-1024 mg/L
92028	Sulbactam SUL 0.016-256 mg/L
920280	Sulbactam SUL 0.016-256 mg/L
920281	Sulbactam SUL 0.016-256 mg/L
920310	Sulfamethoxazole SMX 0.064-1024 mg/L
920311	Sulfamethoxazole SMX 0.064-1024 mg/L
92031	Sulfamethoxazole SMX 0.064-1024 mg/L
921360	Tedizolid TZD 0.002-32 mg/L
921361	Tedizolid TZD 0.002-32 mg/L
92136	Tedizolid TZD 0.002-32 mg/L
920120	Teicoplanin TEC 0.016-256 mg/L
920121	Teicoplanin TEC 0.016-256 mg/L
92012	Teicoplanin TEC 0.016-256 mg/L
920520	Telavancin TLV 0.002-32 mg/L
92052	Telavancin TLV 0.002-32 mg/L
920521	Telavancin TLV 0.002-32 mg/L
92053	Telavancin TLV 0.016-256 mg/L
920530	Telavancin TLV 0.016-256 mg/L
920531	Telavancin TLV 0.016-256 mg/L
92029	Temocillin TMO 0.064-1024 mg/L

CODE	DESCRIPTION
920290	Temocillin TMO 0.064-1024 mg/L
920291	Temocillin TMO 0.064-1024 mg/L
92114	Tetracycline TE 0.016-256 mg/L
921140	Tetracycline TE 0.016-256 mg/L
921141	Tetracycline TE 0.016-256 mg/L
92200	Tiamulin TIA 0.002-32 mg/L
922000	Tiamulin TIA 0.002-32 mg/L
922001	Tiamulin TIA 0.002-32 mg/L
92183	Ticarcillin TC 0.016-256 mg/L
921830	Ticarcillin TC 0.016-256 mg/L
921831	Ticarcillin TC 0.016-256 mg/L
92117	Ticarcillin* - clavulanic acid TTC 0.016-256* mg/L
921170	Ticarcillin* - clavulanic acid TTC 0.016-256* mg/L
921171	Ticarcillin* - clavulanic acid TTC 0.016-256* mg/L
92144	Tigecycline TGC 0.016-256 mg/L
921440	Tigecycline TGC 0.016-256 mg/L
921441	Tigecycline TGC 0.016-256 mg/L
92201	Tilmicosin TIL 0.002-32 mg/L
922010	Tilmicosin TIL 0.002-32 mg/L
922011	Tilmicosin TIL 0.002-32 mg/L
92121	Tobramycin TOB 0.016-256 mg/L
921210	Tobramycin TOB 0.016-256 mg/L
921211	Tobramycin TOB 0.016-256 mg/L
921200	Tobramycin TOB 0.064-1024 mg/L
921201	Tobramycin TOB 0.064-1024 mg/L
92120	Tobramycin TOB 0.064-1024 mg/L
92037	Trimethoprim TM 0.002-32 mg/L
920370	Trimethoprim TM 0.002-32 mg/L
920371	Trimethoprim TM 0.002-32 mg/L
92123	Trimethoprim* - sulfamethoxazole (1/19) SXT 0.002-32* mg/L
921230	Trimethoprim*-sulfamethoxazole (1/19) SXT 0.002-32* mg/L
921231	Trimethoprim*-sulfamethoxazole (1/19) SXT 0.002-32* mg/L
920570	Vancomycin VA 0.016-256 mg/L
92057	Vancomycin VA 0.016-256 mg/L
920571	Vancomycin VA 0.016-256 mg/L
92163	Vancomycin//Teicoplanin VA/TEC 0.5-32/0.5-32 mg/L
921630	Vancomycin//Teicoplanin VA/TEC 0.5-32/0.5-32 mg/L
921631	Vancomycin//Teicoplanin VA/TEC 0.5-32/0.5-32 mg/L
921500	Voriconazole VO 0.002-32 mg/L
921501	Voriconazole VO 0.002-32 mg/L
92150	Voriconazole VO 0.002-32 mg/L
RID plates	
93001	Easy Rid h-IgG
93002	Easy Rid h-IgA
93003	Easy Rid h-IgM
93004	Easy Rid h-C3c
93005	Easy Rid h-C4
93006	Easy Rid h-Transferrin
93007	Easy Rid h-Albumin
93008	Easy Rid h-Apolipoprotein A1
93009	Easy Rid h-Apolipoprotein B
93010	Easy Rid h-Alfa 1 Acid Glicoprotein
93011	Easy Rid h-Fibrinogen

CODE	DESCRIPTION
93012	Easy Rid h-Antitrombin III
93013	Easy Rid h-Ig Light Chain K
93014	Easy Rid h-Ig Light Chain Lambda
93015	Easy Rid h-Alfa 1 Antitrypsin
93016	Easy Rid h-Ceruloplasmin
93018	Easy Rid h-Haptoglobin
93104	Multiplate h-IgG/IgA/IgM
93106	Multiplate h-C3c/C4
93110	Multiplate h-Apo A1/Apo B
93115	Multiplate h-Kappa Chain/Lambda Chain
93201	Bence Jones Test
940010	Rid Control Serum

Multodiscs

CODE	DESCRIPTION
95270	Multodisc Acinetobacter
95200	Multodisc Anaerobes
95220	Multodisc Enterobacteria 1
95240	Multodisc Enterobacteria 2
95230	Multodisc Enterobacteria Urine
95210	Multodisc Enterococci
95250	Multodisc Pseudomonas
95260	Multodisc Staph
95290	Multodisc Strepto
95280	Multodisc Yeasts

Bacterial suspension - rapid Kit

CODE	DESCRIPTION
96001	Salmonella typhi H Macro
96002	Salmonella typhi O Macro
96003	Salmonella paratyphi AH Macro
96004	Salmonella paratyphi AO Macro
96005	Salmonella paratyphi BH Macro
96006	Salmonella paratyphi BO Macro
96007	Brucella Totale Macro
96008	Brucella abortus Macro
96009	Salmonella typhi A Totale Macro
96010	Salmonella paratyphi A Totale Macro
96011	Proteus OX2 Macro
96012	Proteus OXK Macro
96013	Proteus OX19 Macro
96015	Febrile Multitest Kit
96016	Strep-Check Kit
96017	Staph Latex Kit
96018	Salmonella paratyphi B Totale Macro
96019	Salmonella paratyphi CH Macro
96020	Salmonella paratyphi CO Macro
96021	Salmonella paratyphi B Totale Macro

CODE	DESCRIPTION
96022	Brucella melitensis Macro
96023	Brucella suis Macro
96031	Salmonella typhi H Slide
96032	Salmonella typhi O Slide
96033	Salmonella typhi Totale Slide
96034	Salmonella paratyphi AH Slide
96035	Salmonella paratyphi AO Slide
96036	Salmonella paratyphi A Totale Slide
96037	Salmonella paratyphi BH Slide
96038	Salmonella paratyphi BO Slide
96039	Salmonella paratyphi B Totale Slide
96040	Salmonella paratyphi CH Slide
96041	Salmonella paratyphi CO Slide
96042	Salmonella paratyphi C Totale Slide
96043	Brucella Totale Slide
96044	Brucella abortus Slide
96045	Brucella melitensis Slide
96046	Brucella Bengal Rose Slide
96047	Proteus OX2 Slide
96048	Proteus OXK Slide
96049	Proteus OX19 Slide
96093	Negative Control
96096	Positive Control for Salmonella
96097	Positive Control for Proteus
96098	Positive Control for Brucella
96142	Legionella Latex Kit
96143	Campylobacter Latex Kit
96148	Shigella Antiserum
96150	E.Coli O157 Latex Kit
96151	Salmonella Latex Kit
96153	Strepto B Latex Kit
96154	Strepto A Latex Kit
96316	Clostridium difficile GDH Card
96317	Clostridium difficile Toxin A+B Card
96318	Giardia Card
96319	Listeria Monocytogenes Card
96320	Salmonella Ag Card
96415/20	Fecal Occult Blood Card
96418	Strepto A Card
96441	Gonorrhea Ag Card
96442	Gardnerella Vaginalis Card
96443	Trichomonas Vaginalis Card
97800	One Step Rotavirus Card
97801	RSV Stick One Step
97802	One Step Rota-Adenovirus Combo Panel
97803	Helicobacter pylori Antigen Card
97807	One Step Adenovirus Test



Liofilchem® MTS™



SUMMARY AND EXPLANATION OF THE TEST

The Liofilchem® MTS™ (MIC Test Strip) are gradient tests used to determine the minimum inhibitory concentration (MIC) of select organisms to indicate appropriate patient treatment and for identifying resistance patterns. The MIC is the minimum inhibitory concentration of an antimicrobial drug that will inhibit the growth of microbes under standardized *in vitro* conditions. Broth and agar dilution MIC procedures based on two-fold serial dilutions of antibiotics are the reference methodologies; expected reproducibility of which is within ± 1 two-fold dilution.

PRINCIPLE OF THE METHOD

MTS™ are made of special high quality paper impregnated with a predefined concentration gradient of antibiotic, across 15 two-fold dilutions like those of a conventional MIC method. When the MTS™ is applied onto an inoculated agar surface, the preformed exponential gradient of antimicrobial agent diffuses into the agar for over an hour. After incubation, a symmetrical inhibition ellipse centered along the strip is formed. The MIC is read directly from the scale in terms of $\mu\text{g/mL}$ at the point where the edge of the inhibition ellipse intersects the strip.

For detection of resistance mechanisms such as extended-spectrum beta-lactamase (ESBL) and carbapenemase, double-sided gradient MTS™ carrier the appropriate diagnostic reagents. Resistant bacteria are identified by comparing the inhibition on both sides of the strip.

REAGENTS

MTS™ is supplied in 3 different packaging options (no additional reagents are included):

- The 10-test pack contains 10 strips individually packed in desiccant envelopes.
- The 30-test pack contains 30 strips individually packed in desiccant envelopes.
- The 100-test pack contains 100 strips in a canister with a desiccant built into the lid.

This instruction sheet is available at www.liofilchem.com/MTS

DIRECTIONS FOR USE

Storage

Unopened foil packages and canisters: On receipt, store MTS™ at -20°C to $+8^{\circ}\text{C}$ until the given expiry date. Some MTS™ (e.g. carbapenems) should be stored frozen at -20°C . Check the drug label for the specific storage temperature.

Opened canisters: MTS™ in canister can be used for up to 2 months from first opening (record the date on which the canister was open) and must be stored at the label storage temperature. Before using the remaining strips, check the expiry date indicated on the packaging. Do not store near sources of heat and do not expose to excessive temperature variations.

Protect MTS™ from moisture, heat and direct exposure to strong light at all times.

Handling

Before using the MTS™ from an unopened package, visually inspect to ensure the package is intact. Do not use the strips if the package has been damaged. When removed from the refrigerator/freezer, allow the package or storage container to reach room temperature for about 30 minutes. Moisture condensing on the outer surface must evaporate completely before opening the package. Use forceps or a similar device to pick up a strip.

When using MTS™ from a canister, replace the lid immediately after use and store as outlined under STORAGE.

Precautions

The MTS™ is not classified as being hazardous according to current regulations. The MTS™ is a disposable product. The MTS™ is only for diagnostic *in vitro* use and is intended for professional use. They must be used in the laboratory by properly trained operators using approved aseptic and safety methods for pathogenic agents.

Materials Required but Not Provided:

- Agar plate medium (validated by the media manufacturer for use with antimicrobial susceptibility testing, 90 or 150 mm plates)
- Suspension medium
- McFarland turbidity standard
- Sterile loops, swabs (not too tightly spun), test tubes, pipettes and scissors
- Forceps
- Incubator ($35 \pm 2^{\circ}\text{C}$)
- Quality control organisms (CultiControl™)
- Additional technical information from www.liofilchem.com

NOTE: The medium to be used as well as the inoculum suspension will depend on the organism under investigation, see the MTS™ Application Guide for specific recommendations.

Inoculum Preparation

Suspend well-isolated colonies from an overnight agar plate into the suspension medium to achieve the recommended McFarland standard. If the inoculum concentration is correct, a confluent lawn of growth will be obtained after incubation. If insufficient growth occurs, the testing should be repeated.

McFarland turbidity standards do not guarantee the correct number of viable cells in the suspension. In order to verify that your procedure gives the correct inoculum density in terms of CFU/mL performing regular colony counts is recommended. An acceptable inoculum should give approximately $1-2 \times 10^8$ CFU/mL.

Inoculation

Dip a sterile swab in the broth culture or in a diluted form thereof and squeeze it on the wall of the test tube to eliminate excess liquid. Streak the swab over the entire sterile agar surface. Repeat this procedure by streaking 2 more times, rotating the plate approximately 60 degrees each time to ensure an even distribution of inoculum. Allow excess moisture to be absorbed so that the surface is completely dry before applying MTS™.

Use well-defined, high quality media for AST that supports good growth. The brand chosen should have good batch-to-batch reproducibility to ensure that accurate and reliable MIC values are obtained.

The agar medium should have a depth of 4.0 ± 0.5 mm, a pH of 7.3 ± 0.1 and all other quality specifications should be fulfilled. Refer to the media manufacturer's instructions for more information.

Application

Apply the strip to the agar surface with the scale facing upwards and code of the strip to the outside of the plate, pressing it with a sterile forceps on the surface of the agar and ensure that whole length of the antibiotic gradient is in complete contact with the agar surface. Once applied, do not move the strip.

Incubation

Incubate the agar plates in an inverted position at the appropriate temperature, atmosphere and time. Refer to the MTS™ Application Guide for specific incubation instructions.

MTS™ testing conditions for most common organisms are shown in the following guide. For further information on specific applications, please consult MTS™ documents available at www.liofilchem.com/MTS

Organism group	Agar media	Inoculum		Incubation		
		Suspension	Turbidity	Temperature	Atmosphere ⁶	Time ⁸
Aerobes	Mueller Hinton ^{2, 3, 4, 5}	0.85% NaCl	0.5 McFarland (1 if mucoid)	$35 \pm 2^\circ\text{C}$	ambient	16-20 hours ⁹
ORSA/ORSE	Mueller Hinton + 2% NaCl (MTS™ oxacillin only)	0.85% NaCl	0.5 McFarland	$35 \pm 2^\circ\text{C}$	ambient	24 hours ORSA 48 hours ORSE
Anaerobes	Brucella Blood	Brucella broth or Mueller Hinton broth	1 McFarland	$35 \pm 2^\circ\text{C}$	80-85 N ₂ / 5-10% CO ₂ / 10% H ₂ ⁷	24-48-72 hours depending on the species
<i>Haemophilus influenzae</i>	HTM (CLSI) MH-F (EUCAST)	Mueller Hinton broth or HTM broth	0.5 McFarland (1 if mucoid)	$35 \pm 2^\circ\text{C}$	5% CO ₂	20-24 hours
<i>Streptococcus pneumoniae</i> and <i>Streptococci</i> ¹	Mueller Hinton + 5% blood (CLSI) MH-F (EUCAST)	Mueller Hinton broth	0.5 McFarland (1 if mucoid)	$35 \pm 2^\circ\text{C}$	5% CO ₂	20-24 hours
<i>Neisseria gonorrhoeae</i>	GC-agar base + defined supplements	Mueller Hinton broth	0.5 McFarland	$36 \pm 1^\circ\text{C}$	5% CO ₂	20-24 hours

¹ Includes beta-haemolytic Streptococci groups A, B, C and G and Viridans group *S. mutant*, *S. mitis*, *S. sanguis* and *S. bovis*.

² For trimethoprim and trimethoprim/sulfamethoxazole, ensure that the brand and batch of agar has a low thymine/thymidine content to minimise antagonism of the activity of trimethoprim and sulphonamides.

³ The inherent calcium content in Mueller Hinton agar may vary between brands and batch to batch. Perform quality control of agar plates on a batch to batch basis to qualify it for use, particularly for testing of daptomycin.

⁴ The inherent manganese content in Mueller Hinton agar may vary between brands and batch to batch. Perform quality control of agar plates on a batch to batch basis to qualify it for use, particularly for testing of tigecycline.

⁵ The performances of macrolides and aminoglycosides MTS™ with aerobic microorganisms have been validated and are guaranteed with the **Liofilchem** and **BBL/BD** Mueller Hinton II Agar only.

⁶ The activity of macrolides, lincosamides, streptogramins, aminoglycosides, quinolones, penicillins and tetracyclines can be affected by the pH decrease consequent to the incubation in 5% CO₂ for fastidious organisms. Please be aware that differences in results can be obtained between systems that are incubated in ambient and in CO₂-enriched air.

⁷ Ensure that an efficient anaerobic system is used to achieve rapid anaerobiosis to avoid false resistant results with metronidazole.

⁸ Ensure the agar plate is incubated for the recommended period before reading, especially for delayed expression of resistance and slow growing and fastidious organisms.

⁹ MTS™ vancomycin results are interpreted at 24 hours of incubation for Staphylococci and Enterococci.

Reading the MIC

After the required incubation period, and only when an even lawn of growth is distinctly visible, read the MIC value where the relevant inhibition ellipse intersects the strip. Do not read the plate if the culture appears mixed or if the lawn of growth is too light or too heavy.

NOTES:

- Antimicrobial drugs can be either “-static” (e.g. bacteriostatic, fungistatic) or “-cidal” in their interactions with target organisms and this needs to be considered for determining correctly the MIC endpoint. For bactericidal drugs, e.g. beta-lactams, read the MIC at the point of complete inhibition of all growth. Haze and macrocolonies or microcolonies within 3 mm from the strip should be read as growth. For bacteriostatic drugs, e.g. trimethoprim-sulfamethoxazole, in case of trailing endpoints, read at 80% inhibition, i.e. the first point of significant inhibition as judged by the naked eye. Consult MTS30 (cidal-static technical sheet) for more information.
- Growth along the entire gradient i.e. no inhibition ellipse indicates that the value is greater than or equal to (\geq) the highest value on the scale. An inhibition ellipse that intersects below the lower end of the scale is read as less than ($<$) the lowest value. Intersection between two scale segments should be rounded up to the higher value. An MIC of 0.125 $\mu\text{g/mL}$ is considered the same as 0.12 $\mu\text{g/mL}$ for reporting purposes. See the appropriate MTS™ technical sheets for example specific drug-organism photographs. Also consult the MTS™ Photographic Guide.
- Excessively wet plates prior to inoculation, insufficient drying before applying strips and/or unevenly streaked surfaces may give non confluent growth or jagged ellipse edges. Repeat the test if MIC endpoints are difficult to read. In the case of uneven MIC intersections, read the higher value. Repeat the test if the discrepancy is >1 dilution.
- Occasionally, certain antimicrobial agent/microorganism combinations may give unusual results. In these cases, judgment of the MIC endpoint may be difficult for the inexperienced personnel. However, individuals can be trained through regular use of quality control strains, MTS™ reading guides and comparison with experienced personnel to correctly assess MIC endpoints.

Result Interpretation

To categorize the result, typically as susceptible, intermediate or resistant, refer to current MIC breakpoints published by the CLSI, EUCAST and/or your national reference group. An overview of CLSI and EUCAST interpretative criteria is provided in **Table 1** (online). Since MTS™ generates MIC values which fall between two-fold dilutions for interpretation, an MTS™ MIC value which falls between standard two-fold dilutions must be rounded up to the next standard upper two fold value before categorization. For example a *S. aureus* vancomycin MIC of 1.5 $\mu\text{g/mL}$ is reported as 2 $\mu\text{g/mL}$.

For resistance detection tests, which are phenotypic confirmation methods not intended for standard MIC determination, read the MTS™ result according to the specific instructions in the product technical sheet.

NOTES:

- As with all AST data, MTS™ results are *in vitro* values only and may provide an indication of the organism's potential *in vivo* susceptibility. The use of results to guide therapy selection must be the sole decision and responsibility of the attending physician. Their judgement should be based on the medical history and knowledge of the patient, pharmacokinetics/pharmacodynamics of the antimicrobial agent, and clinical experience in treating infections caused by the particular microbial pathogen. The drug, dose and dosing regimen must also be considered.
- For details of specific interpretive limitations and/or limitations on the clinical use of an antimicrobial agent in various therapeutic situations, please refer to the tables and footnotes of MIC interpretive standards in the latest CLSI and EUCAST documents.

Eliminating Used Material

After use, MTS™ and the material that comes into contact with the sample must be decontaminated and disposed of in accordance with current laboratory techniques for the decontamination and disposal of potentially infected material.

QUALITY CONTROL

To check the performance of the MTS™ result, test the quality control strain(s) as shown in **Table 1** (online). Patient isolate results are considered satisfactory if the quality control result(s) fall within the expected range(s). Patient isolate results should not be reported if the quality control results are outside of this stated QC range. MIC results for a QC strain that fall a half dilution below the lower QC limit should be rounded up to the next upper two-fold value which would establish QC compliance. MIC results that are a half dilution above the upper limit would be rounded up to the next upper two fold value which would result in non-QC compliance.

LIMITATIONS

Refer to the drug-specific MTS™ Technical Sheet.

EXPECTED VALUES

Expected results for susceptibility tests will vary based on location and institution. Organism resistance patterns will be directly related to the population of organisms at each site.

PERFORMANCE CHARACTERISTICS








Refer to the drug-specific MTS™ Technical Sheet.

REFERENCES

1. Clinical and Laboratory Standards Institute. Performance Standards for Antimicrobial Susceptibility Testing; latest edition. CLSI supplement M100.
2. Clinical and Laboratory Standards Institute. Methods for Dilution Antimicrobial Susceptibility Tests for Bacteria That Grow Aerobically; latest edition. CLSI standard M07.
3. Clinical and Laboratory Standards Institute. Methods for Dilution Antimicrobial Susceptibility Testing of Anaerobic Bacteria; Approved Standard, latest edition. CLSI document M11.
4. Clinical and Laboratory Standards Institute. Performance Standards for Antifungal Susceptibility Testing of Yeasts, latest edition. CLSI supplement M60.
5. Clinical and Laboratory Standards Institute. Reference Method for Broth Dilution Antifungal Susceptibility Testing of Yeasts; latest edition. CLSI standard M27.
6. Clinical and Laboratory Standards Institute. Performance Standards for Antifungal Susceptibility Testing of Filamentous Fungi; latest edition. CLSI supplement M61.
7. Clinical and Laboratory Standards Institute. Reference Method for Broth Dilution Antifungal Susceptibility Testing of Filamentous Fungi; latest edition. CLSI standard M38.
8. The European Committee on Antimicrobial Susceptibility Testing. Breakpoint Tables for Interpretation of MICs and Zone Diameters; latest version.
9. The European Committee on Antimicrobial Susceptibility Testing. Antifungal Agents. Breakpoint Tables for Interpretation of MICs; latest version.

EUCAST documents available at www.eucast.org

GLOSSARY OF TERMS

 Do not reuse	LOT Batch code	 Manufacturer	IVD <i>In vitro</i> diagnostic medical device	 Upper limit of temperature
 Use by	REF Catalog number	 Contains sufficient for <n> tests	 Temperature limitation	 Consult instructions for use

REVISION HISTORY

Revision	Date	Change Summary
00	03/2018	Not applicable (Initial release)
01	01/2020	Amended: Storage, Inoculum Preparation, Inoculation, Reading the MIC Added: Testing Guide (Table)
02	04/2022	Amended: Reagent, Storage and Handling (new Canister packaging), Testing Guide (Table) Added: Revision History

Note: Minor typographical, grammar, and formatting changes are not included in the revision history.

For more information on specific applications, drugs and drug-organism combinations, visit:

liofilchem.com/MTS

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**MIC Test Strip
European Patent**



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In USA, available for products noted as "FDA Cleared" in the MTS™ Catalog.

Quantitative assay for determining the Minimum Inhibitory Concentration (M.I.C.)

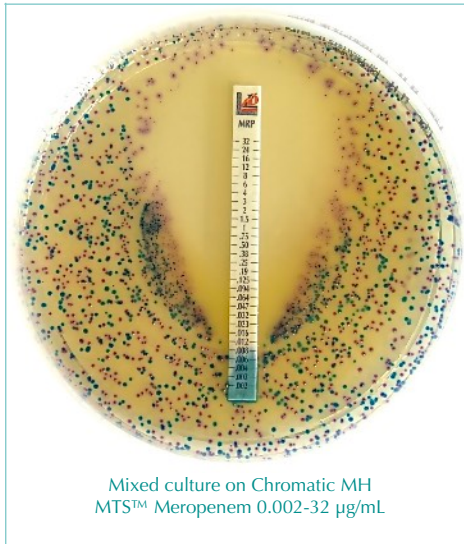
MTS™ is a quantitative assay for determining the Minimum Inhibitory Concentration (M.I.C.) of antimicrobial agents against microorganisms and for detecting the resistance mechanisms.

MTS™ are porous strips with special features that are impregnated with a predefined concentration gradient of antibiotic, across 15 two-fold dilutions of a conventional M.I.C. method.

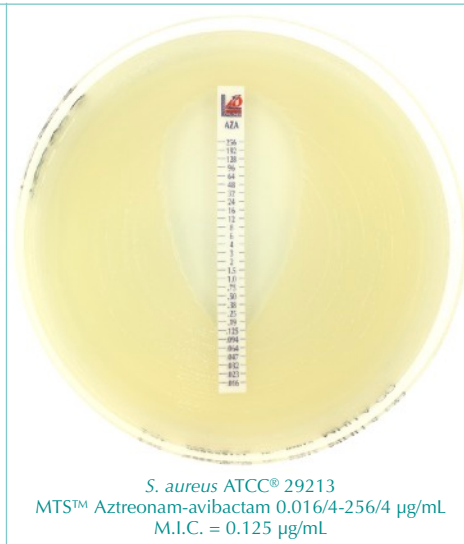
On one side of the strip is indicated a M.I.C. scale in µg/mL and a code that identify the antimicrobial agent.

For ESBL, MBL, GRD, AmpC and KPC detection, the double-sided gradient carries the appropriate diagnostic reagents.

MTS™ are available in a large variety of configurations. Each configuration is available in packages of 10, 30 and 100 tests.



Mixed culture on Chromatic MH
MTS™ Meropenem 0.002-32 µg/mL



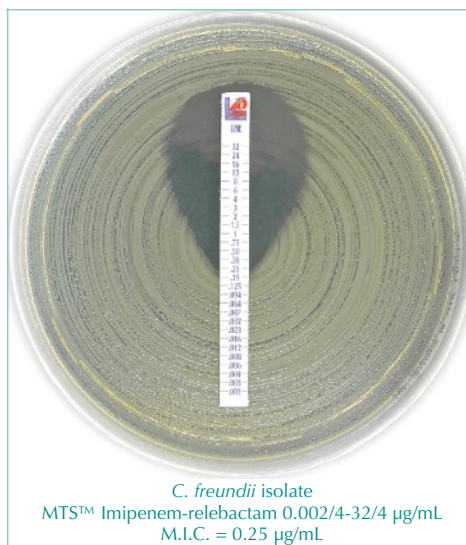
S. aureus ATCC® 29213
MTS™ Aztreonam-avibactam 0.016/4-256/4 µg/mL
M.I.C. = 0.125 µg/mL

method principle

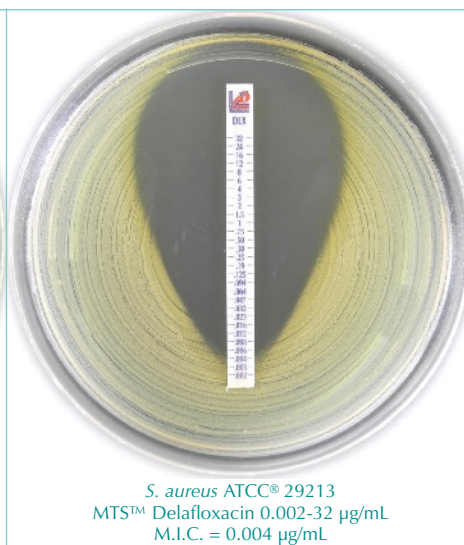
When the MTS™ is applied onto an inoculated agar surface, the preformed exponential gradient of antimicrobial agent is transferred to the agar matrix.

After 18 hours incubation or longer, a symmetrical inhibition ellipse centered along the strip is formed. The MIC is read directly from the scale in terms of µg/mL at the point where the edge of the inhibition ellipse intersects the MTS™.

Other growth/inhibition patterns may also be seen for resistance detection methods.



C. freundii isolate
MTS™ Imipenem-relebactam 0.002/4-32/4 µg/mL
M.I.C. = 0.25 µg/mL



S. aureus ATCC® 29213
MTS™ Delafloxacin 0.002-32 µg/mL
M.I.C. = 0.004 µg/mL

Bibliography

- CLSI M100-Ed32, 2022. Performance Standards for Antimicrobial Susceptibility Testing.
- CLSI M07-Ed11, 2018. Methods for Dilution Antimicrobial Susceptibility Tests for Bacteria That Grow Aerobically.
- CLSI M11-Ed9, 2018. Methods for Antimicrobial Susceptibility Testing of Anaerobic Bacteria.
- CLSI M27-Ed4, 2017. Reference Method for Broth Dilution Antifungal Susceptibility Testing of Yeasts.
- CLSI M27M44S-Ed3, 2022. Performance Standards for Antifungal Susceptibility Testing of Yeasts.
- CLSI VET01S-Ed5, 2020. Performance Standards for Antimicrobial Disk and Dilution Susceptibility Tests for Bacteria Isolated From Animals.
- EUCAST. Breakpoint Tables for Interpretation of MICs and Zone Diameters. v. 13.0 (2023).

MTS™ for ANTIMICROBIAL susceptibility testing

Description		µg/mL	Code	CE IVD	US FDA ¹	Packaging	Ref.
MTS™	AMIKACIN	0.016 - 256	AK	✓	RUO	10/pack 30/pack 100/pack	920181 92018 920180
MTS™	AMOXICILLIN	0.016 - 256	AML	✓	RUO	10/pack 30/pack 100/pack	920211 92021 920210
MTS™	AMOXICILLIN*-CLAVULANIC ACID (2/1) <i>CLSI recommended</i>	0.016 - 256*	AUG	✓	RUO	10/pack 30/pack 100/pack	920241 92024 920240
MTS™	AMOXICILLIN-CLAVULANIC ACID <i>EUCAST recommended</i>	0.016/2 - 256/2	AMC	✓	RUO	10/pack 30/pack 100/pack	921801 92180 921800
MTS™	AMPICILLIN	0.016 - 256	AMP	✓	RUO	10/pack 30/pack 100/pack	920031 92003 920030
MTS™	AMPICILLIN*-SULBACTAM (2/1) <i>CLSI recommended</i>	0.016 - 256*	AMS	✓	✓	10/pack 30/pack 100/pack	920271 92027 920270
MTS™	AMPICILLIN-SULBACTAM <i>EUCAST recommended</i>	0.016/4 - 256/4	SAM	✓	RUO	10/pack 30/pack 100/pack	921811 92181 921810
MTS™	AZITHROMYCIN	0.016 - 256	AZM	✓	✓	10/pack 30/pack 100/pack	920301 92030 920300
MTS™	AZTREONAM	0.016 - 256	ATM	✓	RUO	10/pack 30/pack 100/pack	920331 92033 920330
MTS™	AZTREONAM	0.064 - 1024	ATM	✓	RUO	10/pack 30/pack 100/pack	921731 92173 921730
MTS™	AZTREONAM-AVIBACTAM	0.016/4 - 256/4	AZA	RUO	RUO	10/pack 30/pack 100/pack	920891 92089 920890
MTS™	BACITRACIN	0.016 - 256	BA	✓	RUO	10/pack 30/pack 100/pack	920191 92019 920190
MTS™	CEFACLOR	0.016 - 256	CEC	✓	RUO	10/pack 30/pack 100/pack	920361 92036 920360
MTS™	CEFAZOLIN	0.016 - 256	KZ	✓	RUO	10/pack 30/pack 100/pack	921741 92174 921740
MTS™	CEFEPIME	0.002 - 32	FEP	✓	RUO	10/pack 30/pack 100/pack	921271 92127 921270
MTS™	CEFEPIME	0.016 - 256	FEP	✓	RUO	10/pack 30/pack 100/pack	921261 92126 921260
MTS™	CEFIDEROCOL <i>for Pseudomonas aeruginosa</i>	0.016 - 256	FDC	✓	RUO	10/pack 30/pack 100/pack	920671 92067 920670
MTS™	CEFIXIME	0.016 - 256	CFM	✓	RUO	10/pack 30/pack 100/pack	920601 92060 920600
MTS™	CEFOPERAZONE*-SULBACTAM (2/1)	0.016 - 256*	CPS	✓	RUO	10/pack 30/pack 100/pack	920231 92023 920230
MTS™	CEFOTAXIME	0.002 - 32	CTX	✓	RUO	10/pack 30/pack 100/pack	920071 92007 920070
MTS™	CEFOTAXIME	0.016 - 256	CTX	✓	RUO	10/pack 30/pack 100/pack	920061 92006 920060
MTS™	CEFOTETAN	0.016 - 256	CTT	✓	RUO	10/pack 30/pack 100/pack	920201 92020 920200
MTS™	CEFOXITIN	0.016 - 256	FOX	✓	RUO	10/pack 30/pack 100/pack	920661 92066 920660
MTS™	CEFPIROME	0.016 - 256	CR	✓	RUO	10/pack 30/pack 100/pack	920081 92008 920080
MTS™	CEFPODOXIME	0.016 - 256	PX	✓	RUO	10/pack 30/pack 100/pack	920051 92005 920050
MTS™	CEFTAROLINE	0.002 - 32	CPT	✓	RUO	10/pack 30/pack 100/pack	920561 92056 920560
MTS™	CEFTAROLINE	0.016 - 256	CPT	✓	RUO	10/pack 30/pack 100/pack	920491 92049 920490
MTS™	CEFTAZIDIME	0.016 - 256	CAZ	✓	✓	10/pack 30/pack 100/pack	921381 92138 921380
MTS™	CEFTAZIDIME-AVIBACTAM	0.016/4 - 256/4	CZA	✓	✓	10/pack 30/pack 100/pack	921391 92139 921390
MTS™	CEFTIBUTEN	0.002 - 32	CTB	✓	RUO	10/pack 30/pack 100/pack	920581 92058 920580

MTS™ for ANTIMICROBIAL susceptibility testing

Description		µg/mL	Code	CE IVD	US FDA¹	Packaging	Ref.
MTS™	CEFTIZOXIME	0.016 - 256	CZX	✓	RUO	10/pack	920161
						30/pack	92016
						100/pack	920160
MTS™	CEFTIZOXIME	0.002 - 32	CZX	RUO	RUO	10/pack	920591
						30/pack	92059
						100/pack	920590
MTS™	CEFTOBIPROLE	0.002 - 32	BPR	✓	RUO	10/pack	921401
						30/pack	92140
						100/pack	921400
MTS™	CEFTOLOZANE-TAZOBACTAM	0.016/4 - 256/4	C/T	✓	✓	10/pack	921461
						30/pack	92146
						100/pack	921460
MTS™	CEFTRIAXONE	0.016 - 256	CRO	✓	RUO	10/pack	920421
						30/pack	92042
						100/pack	920420
MTS™	CEFTRIAXONE	0.002 - 32	CRO	✓	RUO	10/pack	920431
						30/pack	92043
						100/pack	920430
MTS™	CEFUROXIME	0.016 - 256	CXM	✓	RUO	10/pack	921291
						30/pack	92129
						100/pack	921290
MTS™	CEPHALOTHIN	0.016 - 256	KF	✓	RUO	10/pack	920391
						30/pack	92039
						100/pack	920390
MTS™	CHLORAMPHENICOL	0.016 - 256	C	✓	RUO	10/pack	920751
						30/pack	92075
						100/pack	920750
MTS™	CIPROFLOXACIN	0.002 - 32	CIP	✓	✓	10/pack	920451
						30/pack	92045
						100/pack	920450
MTS™	CLARITHROMYCIN	0.016 - 256	CLR	✓	RUO	10/pack	920481
						30/pack	92048
						100/pack	920480
MTS™	CLINDAMYCIN	0.016 - 256	CD	✓	✓	10/pack	920721
						30/pack	92072
						100/pack	920720
MTS™	CLOXACILLIN	0.016 - 256	CX	✓	RUO	10/pack	920441
						30/pack	92044
						100/pack	920440
MTS™	COLISTIN	0.016 - 256	CS	RUO	RUO	10/pack	921411
						30/pack	92141
						100/pack	921410
MTS™	COLISTIN	0.064 - 1024	CS	RUO	RUO	10/pack	921421
						30/pack	92142
						100/pack	921420
MTS™	DALBAVANCIN	0.002 - 32	DAL	✓	✓	10/pack	921371
						30/pack	92137
						100/pack	921370
MTS™	DAPTOMYCIN Includes Ca ²⁺	0.016 - 256	DAP	✓	RUO	10/pack	921451
						30/pack	92145
						100/pack	921450
MTS™	DELAFLORACIN	0.002 - 32	DLX	✓	✓	10/pack	920801
						30/pack	92080
						100/pack	920800
MTS™	DORIPENEM	0.002 - 32	DOR	✓	RUO	10/pack	920401
						30/pack	92040
						100/pack	920400
MTS™	DOXYCYCLINE	0.016 - 256	DXT	✓	✓	10/pack	921561
						30/pack	92156
						100/pack	921560
MTS™	ENROFLOXACIN	0.002 - 32	ENR	vet	vet	10/pack	920131
						30/pack	92013
						100/pack	920130
MTS™	ERAVACYCLINE	0.002 - 32	ERV	✓	✓	10/pack	921041
						30/pack	92104
						100/pack	921040
MTS™	ERTAPENEM	0.002 - 32	ETP	✓	RUO	10/pack	921571
						30/pack	92157
						100/pack	921570
MTS™	ERYTHROMYCIN	0.016 - 256	E	✓	✓	10/pack	920511
						30/pack	92051
						100/pack	920510
MTS™	FLORFENICOL	0.016 - 256	FFC	vet	vet	10/pack	920611
						30/pack	92061
						100/pack	920610
MTS™	FOSFOMYCIN Includes Glucose-6-Phosphate	0.016 - 256	FOS	✓	RUO	10/pack	920781
						30/pack	92078
						100/pack	920780
MTS™	FOSFOMYCIN Includes Glucose-6-Phosphate	0.064 - 1024	FOS	✓	RUO	10/pack	920791
						30/pack	92079
						100/pack	920790
MTS™	FOSMIDOMYCIN	0.016 - 256	FOM	✓	RUO	10/pack	920501
						30/pack	92050
						100/pack	920500
MTS™	FUSIDIC ACID	0.016 - 256	FU	✓	RUO	10/pack	920021
						30/pack	92002
						100/pack	920020
MTS™	GATIFLOXACIN	0.002 - 32	GAT	✓	RUO	10/pack	920111
						30/pack	92011
						100/pack	920110

MTS™ for ANTIMICROBIAL susceptibility testing

Description		µg/mL	Code	CE IVD	US FDA¹	Packaging	Ref.
MTS™	GEMIFLOXACIN	0.002 - 32	GEM	✓	RUO	10/pack	920351
						30/pack	92035
						100/pack	920350
MTS™	GENTAMICIN	0.016 - 256	CN	✓	✓	10/pack	920091
						30/pack	92009
						100/pack	920090
MTS™	GENTAMICIN	0.064 - 1024	CN	✓	RUO	10/pack	920101
						30/pack	92010
						100/pack	920100
MTS™	IMIPENEM	0.002 - 32	IMI	✓	RUO	10/pack	920541
						30/pack	92054
						100/pack	920540
MTS™	IMIPENEM	0.016 - 256	IMI	✓	✓	10/pack	920681
						30/pack	92068
						100/pack	920680
MTS™	IMIPENEM-RELEBACTAM	0.002/4 - 32/4	I/R	✓	✓	10/pack	920761
						30/pack	92076
						100/pack	920760
MTS™	KANAMYCIN	0.016 - 256	K	✓	RUO	10/pack	920341
						30/pack	92034
						100/pack	920340
MTS™	LEFAMULIN	0.016 - 256	LMU	✓	✓	10/pack	920641
						30/pack	92064
						100/pack	920640
MTS™	LEVOFLOXACIN	0.002 - 32	LEV	✓	✓	10/pack	920811
						30/pack	92081
						100/pack	920810
MTS™	LINEZOLID	0.016 - 256	LNZ	✓	✓	10/pack	921351
						30/pack	92135
						100/pack	921350
MTS™	MARBOFLOXACIN	0.002 - 32	MAR	vet	vet	10/pack	920621
						30/pack	92062
						100/pack	920620
MTS™	MECILLINAM	0.016 - 256	MEC	✓	RUO	10/pack	920171
						30/pack	92017
						100/pack	920170
MTS™	MEROPENEM	0.002 - 32	MRP	✓	✓	10/pack	920841
						30/pack	92084
						100/pack	920840
MTS™	MEROPENEM	0.016 - 256	MRP	✓	RUO	10/pack	920851
						30/pack	92085
						100/pack	920850
MTS™	MEROPENEM-VABORBACTAM	0.016/8 - 256/8	MV	✓	✓	10/pack	920741
						30/pack	92074
						100/pack	920740
MTS™	METRONIDAZOLE	0.016 - 256	MTZ	✓	RUO	10/pack	920871
						30/pack	92087
						100/pack	920870
MTS™	MOXIFLOXACIN	0.002 - 32	MXF	✓	RUO	10/pack	920901
						30/pack	92090
						100/pack	920900
MTS™	MUPIROCIN	0.064 - 1024	MUP	✓	RUO	10/pack	920381
						30/pack	92038
						100/pack	920380
MTS™	MINOCYCLINE	0.016 - 256	MN	✓	RUO	10/pack	920321
						30/pack	92032
						100/pack	920320
MTS™	NALIDIXIC ACID	0.016 - 256	NA	✓	RUO	10/pack	921321
						30/pack	92132
						100/pack	921320
MTS™	NETILMICIN	0.016 - 256	NET	✓	RUO	10/pack	920931
						30/pack	92093
						100/pack	920930
MTS™	NORFLOXACIN	0.016 - 256	NOR	✓	RUO	10/pack	920961
						30/pack	92096
						100/pack	920960
MTS™	NITROFURANTOIN	0.032 - 512	F	✓	RUO	10/pack	920221
						30/pack	92022
						100/pack	920220
MTS™	OFLOXACIN	0.002 - 32	OFX	✓	RUO	10/pack	920991
						30/pack	92099
						100/pack	920990
MTS™	OMADACYCLINE	0.002 - 32	OMC	✓	✓	10/pack	920711
						30/pack	92071
						100/pack	920710
MTS™	OXACILLIN	0.016 - 256	OX	✓	RUO	10/pack	920151
						30/pack	92015
						100/pack	920150
MTS™	PAROMOMYCIN	0.064 - 1024	PAR	RUO	RUO	10/pack	920731
						30/pack	92073
						100/pack	920730
MTS™	PENICILLIN G	0.002 - 32	P	✓	✓	10/pack	921031
						30/pack	92103
						100/pack	921030
MTS™	PENICILLIN G	0.016 - 256	P	✓	RUO	10/pack	921021
						30/pack	92102
						100/pack	921020
MTS™	PIPERACILLIN	0.016 - 256	PIP	✓	RUO	10/pack	921051
						30/pack	92105
						100/pack	921050

MTS™ for ANTIMICROBIAL susceptibility testing

Description	µg/mL	Code	CE IVD	US FDA ¹	Packaging	Ref.
MTS™ PIPERACILLIN-TAZOBACTAM for Enterobacterales, <i>Pseudomonas</i> , <i>Acinetobacter</i>	0.016/4 - 256/4	TZP	✓	✓	10/pack	921081
					30/pack	92108
					100/pack	921080
MTS™ PIPERACILLIN-TAZOBACTAM for <i>Haemophilus</i> , Anaerobes	0.064/4 - 1024/4	TZP	RUO	RUO	10/pack	921131
					30/pack	92113
					100/pack	921130
MTS™ PLAZOMICIN	0.016 - 256	PLZ	✓	✓	10/pack	920701
					30/pack	92070
					100/pack	920700
MTS™ POLYMYXIN B	0.064 - 1024	PB	✓	RUO	10/pack	920041
					30/pack	92004
					100/pack	920040
MTS™ QUINUPRISTIN-DALFOPRISTIN	0.002 - 32	QDA	✓	RUO	10/pack	920261
					30/pack	92026
					100/pack	920260
MTS™ RIFAMPICIN	0.002 - 32	RD	✓	RUO	10/pack	920011
					30/pack	92001
					100/pack	920010
MTS™ RIFAMPICIN	0.016 - 256	RD	✓	RUO	10/pack	920251
					30/pack	92025
					100/pack	920250
MTS™ SPECTINOMYCIN	0.064 - 1024	SPC	✓	RUO	10/pack	920141
					30/pack	92014
					100/pack	920140
MTS™ SPIRAMYCIN	0.002 - 32	SP	✓	RUO	10/pack	920461
					30/pack	92046
					100/pack	920460
MTS™ STREPTOMYCIN	0.064 - 1024	S	✓	RUO	10/pack	921111
					30/pack	92111
					100/pack	921110
MTS™ SULBACTAM	0.016 - 256	SUL	✓	RUO	10/pack	920281
					30/pack	92028
					100/pack	920280
MTS™ SULFAMETHOXAZOLE	0.064 - 1024	SMX	✓	RUO	10/pack	920311
					30/pack	92031
					100/pack	920310
MTS™ TEDIZOLID	0.002 - 32	TZD	✓	✓	10/pack	921361
					30/pack	92136
					100/pack	921360
MTS™ TEICoplanin	0.016 - 256	TEC	✓	RUO	10/pack	920121
					30/pack	92012
					100/pack	920120
MTS™ TELAVANCIN	0.002 - 32	TLV	✓	RUO	10/pack	920521
					30/pack	92052
					100/pack	920520
MTS™ TELAVANCIN	0.016 - 256	TLV	✓	✓	10/pack	920531
					30/pack	92053
					100/pack	920530
MTS™ TEMOCILLIN	0.064 - 1024	TMO	✓	RUO	10/pack	920291
					30/pack	92029
					100/pack	920290
MTS™ TETRACYCLINE	0.016 - 256	TE	✓	✓	10/pack	921141
					30/pack	92114
					100/pack	921140
MTS™ TIAMULIN	0.002 - 32	TIA	vet	vet	10/pack	922001
					30/pack	92200
					100/pack	922000
MTS™ TICARCILLIN	0.016 - 256	TC	✓	RUO	10/pack	921831
					30/pack	92183
					100/pack	921830
MTS™ TICARCILLIN-CLAVULANIC ACID	0.016/2 - 256/2	TTC	✓	RUO	10/pack	921171
					30/pack	92117
					100/pack	921170
MTS™ TIGECYCLINE	0.016 - 256	TGC	✓	RUO	10/pack	921441
					30/pack	92144
					100/pack	921440
MTS™ TILMICOSIN	0.002 - 32	TIL	vet	vet	10/pack	922011
					30/pack	92201
					100/pack	922010
MTS™ TOBRAMYCIN	0.016 - 256	TOB	✓	RUO	10/pack	921211
					30/pack	92121
					100/pack	921210
MTS™ TOBRAMYCIN	0.064 - 1024	TOB	✓	RUO	10/pack	921201
					30/pack	92120
					100/pack	921200
MTS™ TRIMETHOPRIM	0.002 - 32	TM	✓	RUO	10/pack	920371
					30/pack	92037
					100/pack	920370
MTS™ TRIMETHOPRIM*-SULFAMETHOXAZOLE (1/19)	0.002 - 32*	SXT	✓	RUO	10/pack	921231
					30/pack	92123
					100/pack	921230
MTS™ VANCOMYCIN	0.016 - 256	VA	✓	✓	10/pack	920571
					30/pack	92057
					100/pack	920570

¹ United States FDA: check the package insert to determine the clearance for testing an agent against a particular isolate.

MTS™ for ANTIMYCOBACTERIAL susceptibility testing							
Description		µg/mL	Code	CE IVD	US FDA ¹	Packaging	Ref.
MTS™	Ethambutol	0.016 - 256	EB	✓	RUO	10/pack	921701
						30/pack	92170
						100/pack	921700
MTS™	Ethionamide	0.016 - 256	ET	✓	RUO	10/pack	921721
						30/pack	92172
						100/pack	921720
MTS™	Isoniazide	0.016 - 256	IZ	✓	RUO	10/pack	921711
						30/pack	92171
						100/pack	921710

MTS™ for ANTIFUNGAL susceptibility testing							
Description		µg/mL	Code	CE IVD	US FDA ¹	Packaging	Ref.
MTS™	Amphotericin B	0.002 - 32	AMB	✓	RUO	10/pack	921531
						30/pack	92153
						100/pack	921530
MTS™	Anidulafungin	0.002 - 32	AND	✓	RUO	10/pack	921551
						30/pack	92155
						100/pack	921550
MTS™	Caspofungin	0.002 - 32	CAS	✓	RUO	10/pack	921541
						30/pack	92154
						100/pack	921540
MTS™	Fluconazole	0.016 - 256	FLU	✓	RUO	10/pack	921471
						30/pack	92147
						100/pack	921470
MTS™	Flucytosine	0.002 - 32	FC	✓	RUO	10/pack	921491
						30/pack	92149
						100/pack	921490
MTS™	Isavuconazole	0.002 - 32	IVU	✓	RUO	10/pack	921841
						30/pack	92184
						100/pack	921840
MTS™	Itraconazole	0.002 - 32	ITC	✓	RUO	10/pack	921481
						30/pack	92148
						100/pack	921480
MTS™	Ketoconazole	0.002 - 32	KE	✓	RUO	10/pack	921511
						30/pack	92151
						100/pack	921510
MTS™	Micafungin	0.002 - 32	MYC	✓	RUO	10/pack	921821
						30/pack	92182
						100/pack	921820
MTS™	Posaconazole	0.002 - 32	POS	✓	RUO	10/pack	921521
						30/pack	92152
						100/pack	921520
MTS™	Rezafungin	0.002 - 32	RZF	RUO	RUO	10/pack	920911
						30/pack	92091
						100/pack	920910
MTS™	Voriconazole	0.002 - 32	VO	✓	RUO	10/pack	921501
						30/pack	92150
						100/pack	921500

MTS™ for Antimicrobial Resistance Testing							
Description		µg/mL	Code	CE IVD	US FDA ¹	Packaging	Ref.
MTS™	CEFEPIME/CEFEPIME+CLAVULANIC ACID (4 µg/mL) for confirmation of Extended Spectrum Beta-Lactamase (ESBL)	0.25-16 / 0.064-4	FEP/FEL	✓	RUO	10/pack	921611
						30/pack	92161
						100/pack	921610
MTS™	CEFOTAXIME/CEFOTAXIME+CLAVULANIC ACID (4 µg/mL) for confirmation of Extended Spectrum Beta-Lactamase (ESBL)	0.25-16 / 0.016-1	CTX/CTL	✓	RUO	10/pack	921601
						30/pack	92160
						100/pack	921600
MTS™	CEFTAZIDIME/CEFTAZIDIME+CLAVULANIC ACID (4 µg/mL) for confirmation of Extended Spectrum Beta-Lactamase (ESBL)	0.5-32 / 0.064-4	CAZ/CAL	✓	RUO	10/pack	921591
						30/pack	92159
						100/pack	921590
MTS™	IMIPENEM / IMIPENEM + EDTA for detection of Metallo Beta-Lactamase (MBL)	4-256 / 1-64	IMI/IMD	✓	RUO	10/pack	921621
						30/pack	92162
						100/pack	921620
MTS™	IMIPENEM / IMIPENEM + EDTA for detection of Metallo Beta-Lactamase (MBL)	0.125-8 / 0.032-2	IMI/IMD	✓	RUO	10/pack	921661
						30/pack	92166
						100/pack	921660
MTS™	MEROPENEM / MEROPENEM + EDTA for detection of Metallo Beta-Lactamase (MBL)	0.125-8 / 0.032-2	MRP/MRD	✓	RUO	10/pack	921651
						30/pack	92165
						100/pack	921650
MTS™	MEROPENEM / MEROPENEM + PHENYLBORONIC ACID for KPC detection	0.125-8 / 0.032-2	MRP/MBO	✓	RUO	10/pack	921671
						30/pack	92167
						100/pack	921670
MTS™	ERTAPENEM / ERTAPENEM + PHENYLBORONIC ACID for KPC detection	0.125-8 / 0.032-2	ETP/EBO	✓	RUO	10/pack	921681
						30/pack	92168
						100/pack	921680
MTS™	CEFOTETAN / CEFOTETAN+CLOXACILLIN for AmpC detection	0.5-32 / 0.5-32	CTT/CXT	✓	RUO	10/pack	921641
						30/pack	92164
						100/pack	921640
MTS™	ERTAPENEM / ERTAPENEM + CLOXACILLIN for AmpC detection	0.125-8 / 0.032-2	ETP/ECX	✓	RUO	10/pack	921691
						30/pack	92169
						100/pack	921690
MTS™	VANCOMYCIN / TEICoplanin for detection of Glycopeptide Resistance (GRD)	0.5-32 / 0.5-32	VA/TEC	✓	RUO	10/pack	921631
						30/pack	92163
						100/pack	921630

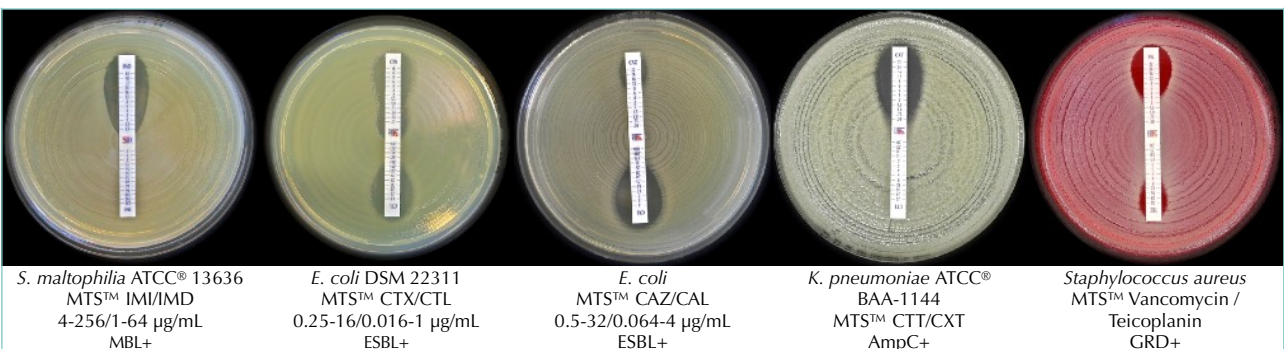
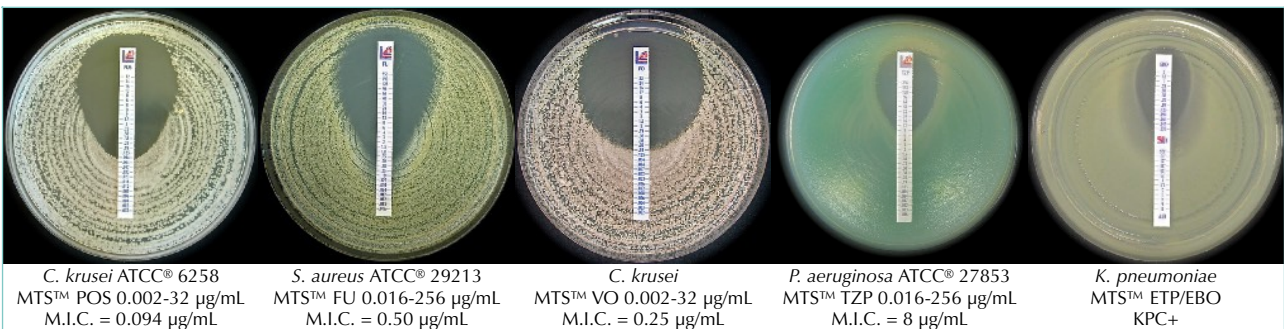
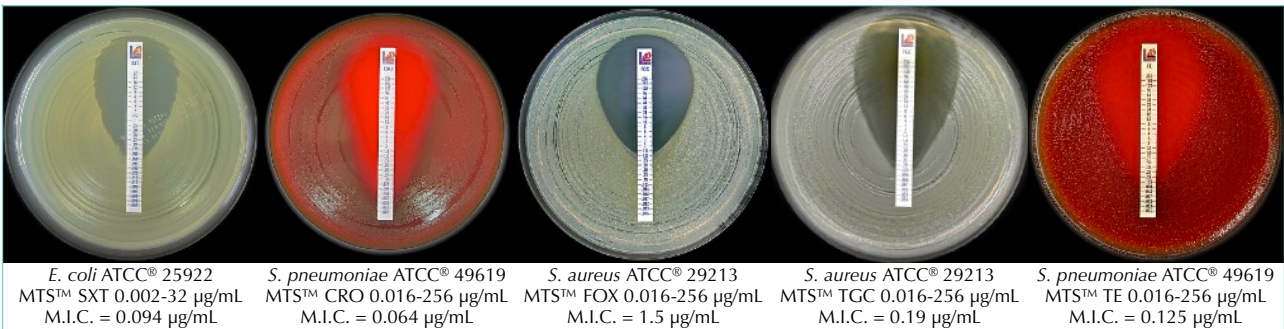
¹ **United States FDA**: check the package insert to determine the clearance for testing an agent against a particular isolate.

Ready to use culture media

Description	CE IVD	US FDA	Format	Packaging	Ref.
Mueller Hinton II Agar for antimicrobial susceptibility testing of non-fastidious organisms.	✓	RUO	90 mm 140 mm	20/pack 10/pack	10031 10231
Mueller Hinton II Agar + Sheep Blood 5% for antimicrobial susceptibility testing of fastidious organisms.	✓	RUO	90 mm 140 mm	20/pack 10/pack	10131 11231
Mueller Hinton Fastidious Agar (Horse blood 5% + 20 mg/L β-NAD) EUCAST recommended: for antimicrobial susceptibility testing of <i>Streptococcus</i> spp., <i>Haemophilus</i> spp., and some other fastidious organisms.	✓	RUO	90 mm 140 mm	20/pack 10/pack	10132 11132
Mueller Hinton II Agar + 2% NaCl for antimicrobial susceptibility testing of staphylococci with Oxacillin.	✓	RUO	90 mm	20/pack	11206
Chromatic MH Chromogenic medium for the preliminary identification and susceptibility testing of bacteria directly from clinical and environmental specimens.	✓	RUO	90 mm 140 mm	20/pack 10/pack	11618 10246
Brucella Blood Agar with Hemin and Vitamin K1 for antimicrobial susceptibility testing of anaerobic bacteria.	✓	RUO	90 mm	20/pack	10245
Fastidious Anaerobe Agar w/ horse blood Medium for isolation and susceptibility testing of anaerobes.	✓	RUO	90 mm	20/pack	10062
Schaedler K Agar (Sheep Blood 5%) for antimicrobial susceptibility testing of anaerobic bacteria.	✓	RUO	90 mm	20/pack	11065
Haemophilus Test Agar for <i>Haemophilus</i> spp. susceptibility testing.	✓	RUO	90 mm	20/pack	10080
Middlebrook 7H11 Agar for antimicrobial susceptibility testing of mycobacteria.	✓	RUO	90 mm	20/pack	10416
RPMI Agar (2% glucose + MOPS) for antifungal susceptibility testing.	✓	RUO	90 mm 140 mm	20/pack 10/pack	11509 10233

MTS Synergy Application System (International Patent)

Description	Packaging	Ref.
MTS Synergy Applicator Platform	1 unit	96860
MTS Synergy Delivery Tool	10 disposable applicators	96870





MTS™

MIC Test Strip for antimicrobial susceptibility testing

Quantitative assay for determining the
Minimum Inhibitory Concentration (MIC)

Contents	Go to	Page
Italiano	click here	1
English	click here	2
Français	click here	3
Deutsch	click here	4
Español	click here	5
Português	click here	6
Norsk	click here	7
Slovenčina	click here	8
Česky	click here	9
Dansk	click here	10
Ελληνικά	click here	11
Svenska	click here	12
Bibliography	click here	13

Quantitative assay for determining the Minimum Inhibitory Concentration (MIC).

DESCRIPTION

MTS™ is a quantitative assay for determining the Minimum Inhibitory Concentration (MIC) of antimicrobial agents against microorganisms and for detecting the resistance mechanisms. **MTS™** are paper strips with special features* that are impregnated with a predefined concentration gradient of antibiotic, across 15 two-fold dilutions of a conventional MIC method.

On one side of the strip is indicated a MIC scale in µg/mL and a code that identify the antimicrobial agent.

For ESBL (Extended Spectrum Beta Lactamase) and MBL (Metallo Beta Lactamase) detection, the double-sided gradient carries the appropriate diagnostic reagents.

MTS™ are available in a large variety of configurations. Each configuration is available in packages of 10, 30 and 100 tests.

CONTENTS OF THE PACKAGES

The 10-test box contains 10 strips individually packed in desiccant envelopes and an instruction sheet.

The 30-test box contains 30 strips individually packed in desiccant envelopes and an instruction sheet.

The 100-test box contains 10 desiccant envelopes, each containing 10 strips, and an instruction sheet. The 100-test pack also contains a storage tube.

METHOD PRINCIPLE

When the **MTS™** is applied onto an inoculated agar surface, the preformed exponential gradient of antimicrobial agent is transferred to the agar matrix.

After 18 hours incubation or longer, a symmetrical inhibition ellipse centered along the strip is formed. The MIC is read directly from the scale in terms of µg/mL at the point where the edge of the inhibition ellipse intersects the strip **MTS™**.

Other growth/inhibition patterns may also be seen for resistance detection methods.

COMPOSITION

The strips are made of high-quality paper and each strip is impregnated with a predefined concentration gradient across 15 two-fold dilutions of antibiotic agent.

GATHERING AND KEEPING SAMPLES

The colonies that are to be subjected to the evaluation of Minimum Inhibition Concentration (MIC) are taken up by culture media that have been previously swabbed with the sample under examination. In the case of mixed colonies the bacterial strains must be purified before inoculation.

TEST PROCEDURE

1. Allow unopened envelop to come to room temperature before opening it, for minimising condensation on the strip.
2. Swab 4 to 5 well isolated and morphologically similar colonies with a culture medium and suspend them in 5 mL of a suitable suspension medium. Fastidious microorganisms should be suspended in broth and used within 15 minutes.
3. Compare the turbidity to the appropriate McFarland standard.
4. Dip a sterile swab in the broth culture or in a diluted form thereof and squeeze it on the wall of the test tube to eliminate excess liquid.
5. Drag it along the surface of the medium contained on the plate so as to produce even growth; allow excess moisture to be absorbed and ensure that the surface is completely dry before applying strips.
6. Apply the strip to the agar surface with the MIC scale facing upwards and code of the strip to the outside of the plate, pressing it with a sterile forceps on the surface of the agar and ensure that whole length of the antibiotic gradient is in complete contact with the agar surface. Once applied, do not move the strip.
7. Incubate plates in an inverted position under conditions appropriate for the microorganism.
8. Put the not used strips onto the tube contained in the package.

EVALUATING THE RESULTS

At the end of incubation read the MIC value where the edge of the inhibition ellipse intersects the strip (intersection between two scale segments should be round up to the higher value). MIC break points for defining susceptibility categories as provided by CLSI or EUCAST could be used for interpreting MIC values.

Always round up **MTS™** half dilution values to the next upper two-fold value before categorisation. An overview of CLSI and EUCAST interpretative criteria is provided in Table no.1.

CLINICAL INTERPRETATION

The test **MTS™** carried out *in vitro* cannot exactly reproduce *in vivo* conditions. Nevertheless, it shows the effect of the concentration of the antibiotic, which varies in the culture medium in relation to the growth of the microbial population. The final choice of antibiotic to administer to the patient is the responsibility of the clinician who possesses all the information on the patient.

QUALITY CONTROL

Each batch of **MTS™** is subjected to precise and thorough checks in compliance with CLSI standards using the bacterial strains indicated in the table no.1.

PRECAUTIONS

The **MTS™** cannot be classified as being hazardous according to current legislation. **MTS™** are disposable products. **MTS™** are only for diagnostic *in vitro* use and are intended for professional use. They must be used in the laboratory by properly trained operators using approved aseptic and safety methods for pathogenic agents.

STORAGE

The unopened package of **MTS™** should be stored at -20°C until the given expiry date.

Leftover **MTS™** from an opened package must be stored at 2-8°C in the airtight tube, containing desiccant, provided in the pack for no more than 7 days.

Do not store near sources of heat and do not expose to excessive temperature variations.

ELIMINATING USED MATERIAL

After use, **MTS™** and the material that comes into contact with the sample must be decontaminated and disposed of in accordance with current laboratory techniques for the decontamination and disposal of potentially infected material.



MIC Test Strip Technical Sheet Cidal-Static

List of bactericidal and bacteriostatic antimicrobial agents

General guideline to interpret the MIC Test Strip endpoints:

Complete inhibition for -cidal agents.

80-90% inhibition for -static agents.

Antimicrobial agents may show both cidal and static actions, depending on the concentration of the agent, count of microorganism and type of organism affected.

Antibiotic Class	Antimicrobial Subclass	Code	Agent	Action
Penicillins	Penicillin	P	Penicillin G	bactericidal
	Aminopenicillin	AML	Amoxicillin	bactericidal
		AMP	Ampicillin	bactericidal
	Ureidopenicillin	PIP	Piperacillin	bactericidal
	Methoxyphenicillin	TMO	Temocillin	bactericidal
	Isoxazolyl penicillin	OX	Oxacillin	bactericidal
	Amidinopenicillin	MEC	Mecillinam	bactericidal
β -lactam/ β -lactamase inhibitor combinations		AUG	Amoxicillin/Clavulanic acid	bactericidal
		AMS	Ampicillin/Sulbactam	bactericidal
		TZP	Piperacillin/Tazobactam	bactericidal
		TTC	Ticarcillin/Clavulanic acid	bactericidal
		CPS	Cefoperazone/Sulbactam	bactericidal
β -lactamase inhibitor	Penicillanic acid sulfone	ATM	Sulbactam	bactericidal
Cephems (parenteral)	Cephalosporin I	KF	Cephalothin	bacteriostatic
	Cephalosporin II	CXM	Cefuroxime	bactericidal
	Cephalosporin III (extended spectrum cephalosporins)	CTX	Cefotaxime	bactericidal
		CZX	Ceftizoxime	bactericidal
		CAZ	Ceftazidime	bactericidal
	Cephalosporin IV (extended spectrum cephalosporins)	CRO	Ceftriaxone	bactericidal
		FEP	Cefepime	bactericidal
	Cephalosporin V	CR	Cefpirome	bactericidal
		BPR	Ceftobiprole	bactericidal
	Cephams (oral)	Cephamycin	CTT	Cefotetan
FOX			Cefoxitin	bactericidal
CEC			Cefaclor	bactericidal
Cephems (oral)	Cephalosporin	CFM	Cefixime	bacteriostatic
		PX	Cefpodoxime	bactericidal
		ATM	Aztreonam	bactericidal
Monobactam				
Penems	Carbapenems	ETP	Ertapenem	bactericidal
		IMI	Imipenem	bactericidal
		MRP	Meropenem	bactericidal
		DOR	Doripenem	bactericidal

Antibiotic Class	Antimicrobial Subclass	Code	Agent	Action
Aminocyclitols		SPC	Spectinomycin	bactericidal
Aminoglycosides		AK	Amikacin	bactericidal
		CN	Gentamicin	bactericidal
		K	Kanamycin	bactericidal
		NET	Netilmicin	bactericidal
		S	Streptomycin	bactericidal
		TOB	Tobramycin	bactericidal
Ansamycins	Rifamycin B	RD	Rifampicin	bactericidal
Quinolones	Quinolone	NA	Nalidixic acid	bactericidal
	Fluoroquinolone	CIP	Ciprofloxacin	bactericidal
		GAT	Gatifloxacin	bactericidal
		GEM	Gemifloxacin	bactericidal
		LEV	Levofloxacin	bactericidal
		MXF	Moxifloxacin	bactericidal
		NOR	Norfloxacin	bactericidal
		OFX	Ofloxacin	bactericidal
		ENR	Enrofloxacin	bactericidal
Folate pathway inhibitors	Diaminopyrimidine	TM	Trimethoprim	bacteriostatic
	Sulphonamide	SXT	Trimethoprim/ Sulfamethoxazole	bacteriostatic
		SMX	Sulfamethoxazole	bacteriostatic
Phosphonic acids		FOS	Fosfomicin	bacteriostatic
Lincosamides		CD	Clindamycin	bacteriostatic
Cyclic peptides	Lipopolypeptide	BA	Bacitracin	bactericidal
		DAP	Daptomycin	bactericidal
		CS	Colistin (polymyxin E)	bactericidal
		PB	Polymyxin B	bactericidal
Macrolides	Azalide	AZM	Azithromycin	bacteriostatic
	Macrolide	CLR	Clarithromycin	bacteriostatic
		E	Erythromycin	bacteriostatic
Nitrofurans		F	Nitrofurantoin	bactericidal
Nitroimidazoles		LZ	Metronidazole	bactericidal
Oxazolidinones		LNZ	Linezolid	bacteriostatic
		TZD	Tedizolid	bacteriostatic
Glycopeptides	Glycopeptide	VA	Vancomycin	bactericidal
	Lipoglycopeptide	DAL	Dalbavancin	bactericidal
		TEC	Teicoplanin	bactericidal
Phenicols		C	Chloramphenicol	bacteriostatic
Streptogramins		QDA	Quinupristin/Dalfopristin	bacteriostatic
Tetracyclines		DX	Doxycycline	bacteriostatic
		MN	Minocycline	bacteriostatic
		TE	Tetracycline	bacteriostatic
Glycylcyclines		TGC	Tigecycline	bacteriostatic

Antibiotic Class	Antimicrobial Subclass	Code	Agent	Action
Fusidanes		FU	Fusidic acid	bacteriostatic
Pseudomonic acids		MUP	Mupirocin	bacteriostatic

Antifungal Class	Antifungal Subclass	Code	Agent	Action
Polyenes		AMB	Amphotericin B	fungicidal
Azoles	Imidazole Triazole	KE	Ketocoazole	fungistatic
		FLU	Fluconazole	fungistatic
		ITC	Itraconazole	fungistatic
		VO	Voriconazole	fungistatic
		POS	Posaconazole	fungistatic
Echinocandins		CAS	Caspofungin	fungistatic
		AND	Anidulafungin	fungistatic
		MYC	Micafungin	fungistatic
Pyrimidines	Fluorinated pyrimidine	FC	Flucytosine	fungistatic

Antimycobacterial		Code	Agent	Action
		EB	Ethambutol	bactericidal
		ET	Ethionamide	bactericidal
		IZ	Isoniazide	bactericidal

MIC Test Strip, Patent No. 1395483

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MTS30
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- The present MTS™ Interpretative Criteria and Quality Control table might be out of date. Check on-line for the latest update: https://www.liofilchem.com/images/brochure/mic_test_strip_patent/tabella_interpretazione.pdf
- The present MTS™ Interpretative Criteria and Quality Control table does not replace the official documents by CLSI, EUCAST and FDA.
- The present MTS™ Interpretative Criteria and Quality Control table has been produced in part under ECDC service contracts and made available by EUCAST at no cost to the user and can be accessed on the EUCAST website www.eucast.org. EUCAST recommendations are frequently updated and the latest versions are available at www.eucast.org.

Clinical

Antibiotic	CODE	CLSI INTERPRETATIVE CRITERIA ¹				EUCAST INTERPRETATIVE CRITERIA ²			QUALITY CONTROL		MIC µg/mL	
		S≤	SDD MIC µg/mL	I	R≥	S≤	R>	MIC µg/mL				
AMIKACIN 0.016 - 256 µg/mL	AK	<i>Enterobacterales</i>	4		8	16	<i>Enterobacterales</i> (systemic infections)	(8)	(8)	<i>S. aureus</i>	ATCC® 29213	1-4
		<i>P. aeruginosa</i>	16		32	64	<i>Enterobacterales</i> (infections originating from the urinary tract)	8	8	<i>E. faecalis</i>	ATCC® 29212	64-256
		<i>Acinetobacter</i> spp.	16		32	64	<i>Pseudomonas</i> spp.	16	16	<i>E. coli</i>	ATCC® 25922	0.5-4
		Other Non-Enterobacterales	16		32	64	<i>Acinetobacter</i> spp.	8	8	<i>P. aeruginosa</i>	ATCC® 27853	1-4
		FDA ⁴					<i>S. aureus</i>	(16)	(16)			
		<i>Enterobacterales</i>	16		32	64	Coagulase-negative staphylococci	(16)	(16)			
		<i>S. aureus</i>	16		32	64	PK/PD (Non-species related) breakpoints	1	1			
AMOXICILLIN 0.016 - 256 µg/mL	AML	<i>S. pneumoniae</i> (nonmeningitis)	2		4	8	<i>Enterobacterales</i> (iv)	8	8	<i>K. pneumoniae</i>	ATCC® 700603	> 128
							<i>Enterobacterales</i> (oral, infections originating from the urinary tract)	0.001	8	<i>E. coli</i>	ATCC® 25922	2-8
							<i>Enterobacterales</i> (oral, uncomplicated UTI only)	8	8	<i>S. aureus</i>	ATCC® 29213	0.5-2
							<i>Enterobacterales</i> (oral, other indications)	8	8	<i>S. pneumoniae</i>	ATCC® 49619	0.03-0.12
							<i>Enterococcus</i> spp.	4	8	<i>H. influenzae</i>	ATCC® 49766	0.125-0.5
							<i>S. pneumoniae</i> (iv, meningitis)	0.5	0.5			
							<i>S. pneumoniae</i> (oral)	0.5	1			
							Viridans group streptococci	0.5	2			
							<i>H. influenzae</i> (iv)	2	2			
							<i>H. influenzae</i> (oral)	0.001	2			
							<i>N. meningitidis</i>	0.12	1			
							<i>Prevotella</i> spp.	0.25	0.25			
							<i>F. necrophorum</i>	0.5	0.5			
							<i>C. perfringens</i>	0.25	0.25			
							<i>C. acnes</i>	0.25	0.25			
							<i>H. pylori</i>	0.12	0.12			
							<i>P. multocida</i>	1	1			
					<i>C. diphtheriae</i> and <i>C. ulcerans</i>	1	1					
					<i>K. kingae</i>	0.125	0.125					
					PK/PD (Non-species related) breakpoints	2	8					
AMOXICILLIN*-CLAVULANIC ACID (2/1) 0.016 - 256* µg/mL CLSI recommended	AUG	<i>Enterobacterales</i>	8		16	32	Not available			<i>S. aureus</i>	ATCC® 29213	0.12-0.5
		<i>Haemophilus</i> spp.	2		4	8			<i>E. faecalis</i>	ATCC® 29212	0.25-1	
		<i>S. pneumoniae</i> (nonmeningitis)	2		4	8			<i>E. coli</i>	ATCC® 25922	2-8	
		Anaerobes	4		8	16			<i>E. coli</i>	ATCC® 35218	4-16	
		FDA ⁴							<i>K. pneumoniae</i>	ATCC® 700603	4-16	
		<i>H. influenzae</i>	4		-	8			<i>H. influenzae</i>	ATCC® 49247	2-16	
									<i>S. pneumoniae</i>	ATCC® 49619	0.03-0.12	
									<i>B. fragilis</i>	ATCC® 25285	0.25-1	
									<i>B. thetaiotaomicron</i>	ATCC® 29741	0.25-1	

Antibiotic	CODE	CLSI INTERPRETATIVE CRITERIA ¹				EUCAST INTERPRETATIVE CRITERIA ²			QUALITY CONTROL		
		S≤	SDD MIC µg/mL	I	R≥	S≤	I	R≥	MIC µg/mL	MIC µg/mL	MIC µg/mL
AMOXICILLIN-CLAVULANIC ACID 0.016/2 - 256/2 µg/mL EUCAST recommended	AMC	Not available				Enterobacterales (iv)	8	8	<i>E. coli</i>	ATCC® 25922	2-8
						Enterobacterales (oral, infections originating from the urinary tract)	0.001	8	<i>S. aureus</i>	ATCC® 29213	0.125-0.5
						Enterobacterales (oral, uncomplicated UTI only)	32	32	<i>H. influenzae</i>	ATCC® 49766	0.125-0.5
						Enterobacterales (oral, other indications)	8	8	<i>E. coli</i>	ATCC® 35218	4-32
						Enterococcus spp.	4	8	<i>S. pneumoniae</i>	ATCC® 49619	0.03-0.12
						<i>S. pneumoniae</i> (oral)	0.5	1	<i>B. fragilis</i>	ATCC® 25285	0.06-0.25
						<i>H. influenzae</i> (iv)	2	2			
						<i>H. influenzae</i> (oral)	0.001	2			
						<i>M. catarrhalis</i>	1	1			
						<i>Bacteroides</i> spp.	2	2			
						<i>F. necrophorum</i>	0.5	0.5			
						<i>C. perfringens</i>	0.25	0.25			
						<i>P. multocida</i>	1	1			
						<i>B. pseudomallei</i>	0.001	8			
						PK/PD (Non-species related) breakpoints	2	8			
AMPICILLIN 0.016 - 256 µg/mL	AMP	<i>Enterobacterales</i>	8	16	32	<i>Enterobacterales</i>	8	8	<i>S. aureus</i>	ATCC® 29213	0.5-2
		<i>Enterococcus</i> spp.	8	-	16	<i>Enterococcus</i> spp.	4	8	<i>E. faecalis</i>	ATCC® 29212	0.5-2
		<i>Haemophilus</i> spp.	1	2	4	<i>S. pneumoniae</i> (other than meningitis)	0.5	1	<i>E. coli</i>	ATCC® 25922	2-8
		<i>Streptococcus</i> spp. β-Hemolytic Group	0.25	-	-	<i>S. pneumoniae</i> (meningitis)	0.5	0.5	<i>E. coli</i>	ATCC® 35218	> 32
		<i>Streptococcus</i> spp. Viridans Group	0.25	0.5-4	8	Viridans group streptococci	0.5	2	<i>K. pneumoniae</i>	ATCC® 700603	> 128
		<i>N. meningitidis</i>	0.12	0.25-1	2	<i>H. influenzae</i>	1	1	<i>H. influenzae</i>	ATCC® 49247	2-8
		Anaerobes	0.5	1	2	<i>N. meningitidis</i>	0.12	1	<i>S. pneumoniae</i>	ATCC® 49619	0.06-0.25
						<i>Prevotella</i> spp.	0.5	0.5	<i>H. influenzae</i>	ATCC® 49766	0.06-0.25
						<i>F. necrophorum</i>	0.5	0.5			
						<i>C. perfringens</i>	0.25	0.25			
						<i>C. acnes</i>	0.25	0.25			
						<i>L. monocytogenes</i> (all indications)	1	1			
						<i>P. multocida</i>	1	1			
						<i>Aerococcus sanguinicola</i> and <i>urinae</i>	0.25	0.25			
						<i>K. kingae</i>	0.06	0.06			
						PK/PD (Non-species related) breakpoints	2	8			
AMPICILLIN*-SULBACTAM (2/1) 0.016 - 256* µg/mL CLSI recommended	AMS	<i>Enterobacterales</i>	8	16	32	Not available			<i>E. coli</i>	ATCC® 25922	2-8
		<i>Acinetobacter</i> spp.	8	16	32				<i>E. coli</i>	ATCC® 35218	8-32
		<i>Haemophilus</i> spp.	2	-	4				<i>K. pneumoniae</i>	ATCC® 700603	8-32
		Anaerobes	8	16	32				<i>H. influenzae</i>	ATCC® 49247	2-8
									<i>B. fragilis</i>	ATCC® 25285	0.5-2
									<i>B. thetaiotaomicron</i>	ATCC® 29741	0.5-2
									<i>E. lenta</i>	ATCC® 43055	0.5-2
AMPICILLIN-SULBACTAM 0.016/4 - 256/4 µg/mL EUCAST recommended	SAM	Not available				<i>Enterobacterales</i>	8	8	<i>E. coli</i>	ATCC® 25922	1-4
						<i>Enterococcus</i> spp.	4	8	<i>H. influenzae</i>	ATCC® 49766	0.06-0.25
						<i>H. influenzae</i>	1	1	<i>E. coli</i>	ATCC® 35218	16-128
						<i>M. catarrhalis</i>	1	1	<i>B. fragilis</i>	ATCC® 25285	0.125-0.5
						<i>Bacteroides</i> spp.	2	2			
						<i>F. necrophorum</i>	0.5	0.5			
						<i>C. perfringens</i>	0.25	0.25			
						PK/PD (Non-species related) breakpoints	2	8			

Antibiotic	CODE	CLSI INTERPRETATIVE CRITERIA ¹	S≤	SDD MIC µg/mL	I	R≥	EUCAST			QUALITY CONTROL		
							INTERPRETATIVE CRITERIA ²			S≤	R>	MIC µg/mL
AZITHROMYCIN 0.016 - 256 µg/mL	AZM	<i>S. enterica</i> ser. Typhi	16	-	-	32	<i>Staphylococcus</i> spp.	2	2	<i>S. aureus</i>	ATCC® 29213	0.5-2
		<i>Shigella</i> spp.	8	-	16	32	Streptococcus groups A, B, C and G	0.25	0.25	<i>H. influenzae</i> (-CO ₂)	ATCC® 49247	1-4
		All staphylococci	2	-	4	8	<i>S. pneumoniae</i>	0.25	0.25	<i>H. influenzae</i> (+CO ₂)	ATCC® 49247	4-16
		<i>H. influenzae</i>	4	-	-	-	<i>M. catarrhalis</i>	0.25	0.25	<i>S. pneumoniae</i> (-CO ₂)	ATCC® 49619	0.06-0.25
		<i>N. gonorrhoeae</i>	1	-	-	-	<i>K. kingae</i>	0.25	0.25	<i>S. pneumoniae</i> (+CO ₂)	ATCC® 49619	0.5-2
		<i>S. pneumoniae</i>	0.5	-	1	2	<i>Vibrio</i> spp.	4	4	<i>N. gonorrhoeae</i>	ATCC® 49226	0.25-1
		<i>Streptococcus</i> spp. β-Hemolytic Group	0.5	-	1	2						
		<i>Streptococcus</i> spp. Viridans Group	0.5	-	1	2						
		<i>N. meningitidis</i>	2	-	-	-						
AZTREONAM 0.016 - 256 µg/mL 0.064 - 1024 µg/mL	ATM	<i>Enterobacterales</i>	4	-	8	16	<i>Enterobacterales</i>	1	4	<i>E. coli</i>	ATCC® 25922	0.06-0.25
		<i>P. aeruginosa</i>	8	-	16	32	<i>Pseudomonas</i> spp.	0.001	16	<i>P. aeruginosa</i>	ATCC® 27853	2-8
		Other Non-Enterobacterales	8	-	16	32	<i>Aeromonas</i> spp.	1	4	<i>E. coli</i>	ATCC® 35218	0.03-0.12
		<i>Haemophilus</i> spp.	2	-	-	-	PK/PD (Non-species related) breakpoints	4	8	<i>K. pneumoniae</i>	ATCC® 700603	8-64
									<i>K. pneumoniae</i>	ATCC® BAA-2814	> 128	
									<i>H. influenzae</i>	ATCC® 49247	0.12-0.5	
CEFACLOR 0.016 - 256 µg/mL	CEC	<i>Enterobacterales</i>	8	-	16	32	<i>S. pneumoniae</i>	0.001	0.5	<i>S. aureus</i>	ATCC® 29213	1-4
		<i>Haemophilus</i> spp.	8	-	16	32	<i>H. influenzae</i>	0.5	0.5	<i>E. coli</i>	ATCC® 25922	1-4
		<i>S. pneumoniae</i>	1	-	2	4				<i>H. influenzae</i>	ATCC® 49766	1-4
									<i>S. pneumoniae</i>	ATCC® 49619	1-4	
CEFAZOLIN 0.016 - 256 µg/mL	KZ	<i>Enterobacterales</i> (systemic infections)	2	-	4	8	<i>Enterobacterales</i> (<i>E. coli</i> , and <i>Klebsiella</i> spp., except <i>K. aerogenes</i>)	0.001	4	<i>S. aureus</i>	ATCC® 29213	0.25-1
		<i>Enterobacterales</i> (uncomplicated UTIs due to <i>E. coli</i> , <i>K. pneumoniae</i> , and <i>P. mirabilis</i>) FDA ⁴	16	-	-	32	Viridans group streptococci	0.5	0.5	<i>E. coli</i>	ATCC® 25922	1-4
		<i>Enterobacteriaceae</i>	1	-	2	4	PK/PD (Non-species related) breakpoints	1	2			
CEFEPIME 0.016 - 256 µg/mL 0.002 - 32 µg/mL	FEP	<i>Enterobacterales</i>	2	4-8	-	16	<i>Enterobacterales</i>	1	4	<i>S. aureus</i>	ATCC® 29213	1-4
		<i>P. aeruginosa</i>	8	-	16	32	<i>Pseudomonas</i> spp.	0.001	8	<i>E. coli</i>	ATCC® 25922	0.016-0.12
		<i>Acinetobacter</i> spp.	8	-	16	32	<i>S. pneumoniae</i>	1	2	<i>P. aeruginosa</i>	ATCC® 27853	0.5-4
		Other non-Enterobacterales	8	-	16	32	Viridans group streptococci	0.5	0.5	<i>E. coli</i>	ATCC® 35218	0.008-0.06
		<i>Haemophilus</i> spp.	2	-	-	-	<i>H. influenzae</i>	0.25	0.25	<i>K. pneumoniae</i>	ATCC® 700603	0.5-2
		<i>N. gonorrhoeae</i>	0.5	-	-	-	<i>M. catarrhalis</i>	4	4	<i>K. pneumoniae</i>	ATCC® BAA-2814	> 32
		<i>S. pneumoniae</i> (meningitis)	0.5	-	1	2	<i>Aeromonas</i> spp.	1	4	<i>E. coli</i>	NCTC 13353	≥ 64
		<i>S. pneumoniae</i> (nonmeningitis)	1	-	2	4	PK/PD (Non-species related) breakpoints	4	8	<i>A. baumannii</i>	NCTC 13304	16-128
		<i>Streptococcus</i> spp. β-Hemolytic Group	0.5	-	-	-				<i>H. influenzae</i>	ATCC® 49247	0.5-2
		<i>Streptococcus</i> spp. Viridans Group	1	-	2	4				<i>S. pneumoniae</i>	ATCC® 49619	0.03-0.25
		<i>Enterobacteriaceae</i>	2	4-8	16					<i>N. gonorrhoeae</i>	ATCC® 49226	0.016-0.06
		<i>P. aeruginosa</i>	8	-	16					<i>H. influenzae</i>	ATCC® 49766	0.03-0.125
		CEFIDEROCOL 0.016 - 256 µg/mL	FDC	<i>P. aeruginosa</i>	4	-	8	16	<i>P. aeruginosa</i>	2	2	<i>P. aeruginosa</i>
FDA ⁴	-			-	-	-						
<i>P. aeruginosa</i>	1			-	2	4						
<i>A. baumannii</i> complex	1			-	2	4						
CEFIXIME 0.016 - 256 µg/mL	CFM	<i>Enterobacterales</i>	1	-	2	4	<i>Enterobacterales</i>	1	1	<i>S. aureus</i>	ATCC® 29213	8-32
		<i>Haemophilus</i> spp.	1	-	-	-	<i>H. influenzae</i>	0.125	0.125	<i>E. coli</i>	ATCC® 25922	0.25-1
		<i>N. gonorrhoeae</i>	0.25	-	-	-	<i>M. catarrhalis</i>	0.5	0.5	<i>H. influenzae</i>	ATCC® 49247	0.12-1
							<i>N. gonorrhoeae</i>	0.125	0.125	<i>N. gonorrhoeae</i>	ATCC® 49226	0.004-0.03
								<i>H. influenzae</i>	ATCC® 49766	0.016-0.06		

Antibiotic	CODE	CLSI INTERPRETATIVE CRITERIA ¹	S≤	SDD MIC µg/mL	I	R≥	EUCAST		QUALITY CONTROL		MIC µg/mL		
							INTERPRETATIVE CRITERIA ²		S≤	R>			
CEFOTAXIME 0.016 - 256 µg/mL 0.002 - 32 µg/mL	CTX	<i>Enterobacterales</i>	1		2	4	<i>Enterobacterales</i> (other than meningitis)	1	2	<i>S. aureus</i>	ATCC® 29213	1-4	
		<i>Acinetobacter</i> spp.	8		16-32	64		<i>E. coli</i>	ATCC® 25922	0.03-0.12			
		Other Non- <i>Enterobacterales</i>	8		16-32	64		<i>Enterobacterales</i> (meningitis)	ATCC® 27853	8-32			
		<i>Haemophilus</i> spp.	2		-	-		<i>S. pneumoniae</i> (other than meningitis)	ATCC® 49247	0.12-0.5			
		<i>N. gonorrhoeae</i>	0.5		-	-		<i>S. pneumoniae</i> (meningitis)	ATCC® 49619	0.03-0.12			
		<i>S. pneumoniae</i> (meningitis)	0.5		1	2		Viridans group streptococci	ATCC® 49226	0.016-0.06			
		<i>S. pneumoniae</i> (nonmeningitis)	1		2	4		<i>H. influenzae</i> (other than meningitis)	ATCC® 49766	0.004-0.016			
		<i>Streptococcus</i> spp. β-Hemolytic Group	0.5		-	-		<i>H. influenzae</i> (meningitis)					
		<i>Streptococcus</i> spp. Viridans Group	1		2	4		<i>M. catarrhalis</i>					
		<i>N. meningitidis</i>	0.12		-	-		<i>N. gonorrhoeae</i>					
		Anaerobes	16		32	64		<i>N. meningitidis</i> (all indications)					
		FDA ⁴						<i>P. multocida</i>					
		<i>Acinetobacter</i> spp.	1		2	4		<i>C. diphtheriae</i> and <i>C. ulcerans</i>					
		Other Non- <i>Enterobacterales</i>	1		2	4		<i>K. kingae</i>					
		<i>H. influenzae</i> , <i>H. parainfluenzae</i>	1		-	-		<i>Vibrio</i> spp. (except <i>V. fluvialis</i>)					
Anaerobes	1		2	4	PK/PD (Non-species related)	1	2	breakpoints					
CEFOTETAN 0.016 - 256 µg/mL	CTT	<i>Enterobacterales</i>	16		32	64	Not available			<i>S. aureus</i>	ATCC® 29213	4-16	
		<i>N. gonorrhoeae</i>	2		4	8				<i>E. coli</i>	ATCC® 25922	0.06-0.25	
		Anaerobes	16		32	64				<i>N. gonorrhoeae</i>	ATCC® 49226	0.5-2	
		FDA ⁴								<i>B. fragilis</i>	ATCC® 25285	1-8	
		<i>H. influenzae</i>	4		8	16				<i>B. thetaiotaomicron</i>	ATCC® 29741	16-128	
		<i>Enterobacterales</i>	4		8	16				<i>E. lenta</i>	ATCC® 43055	16-64	
CEFOXITIN 0.016 - 256 µg/mL	FOX	<i>Enterobacterales</i>	8		16	32	Not available			<i>S. aureus</i>	ATCC® 29213	1-4	
		<i>Staphylococcus</i> spp.	4		-	8				<i>E. coli</i>	ATCC® 25922	2-8	
		<i>N. gonorrhoeae</i>	2		4	8				<i>N. gonorrhoeae</i>	ATCC® 49226	0.5-2	
		Anaerobes	16		32	64				<i>B. fragilis</i>	ATCC® 25285	2-8	
		FDA ⁴								<i>B. thetaiotaomicron</i>	ATCC® 29741	8-64	
		<i>Enterobacterales</i>	4		8	16				<i>E. lenta</i>	ATCC® 43055	2-16	
CEFPIROME 0.016 - 256 µg/mL	CR	Not available					Not available			<i>H. influenzae</i>	ATCC® 49247	0.25-1	
CEFPODOXIME 0.016 - 256 µg/mL	PX	<i>Enterobacterales</i>	2		4	8	<i>Enterobacterales</i>	1	1	<i>S. aureus</i>	ATCC® 29213	1-8	
		<i>Haemophilus</i> spp.	2		-	-		<i>S. pneumoniae</i>	0.25	0.25	<i>E. coli</i>	ATCC® 25922	0.25-1
		<i>N. gonorrhoeae</i>	0.5		-	-		<i>H. influenzae</i>	0.25	0.25	<i>E. coli</i>	ATCC® 35218	0.12-0.5
		<i>S. pneumoniae</i>	0.5		1	2					<i>K. pneumoniae</i>	ATCC® 700603	4-32
											<i>E. coli</i>	NCTC 13353	32-128
								<i>H. influenzae</i>	ATCC® 49247	0.25-1			
								<i>S. pneumoniae</i>	ATCC® 49619	0.03-0.12			
								<i>N. gonorrhoeae</i>	ATCC® 49226	0.03-0.12			
								<i>H. influenzae</i>	ATCC® 49766	0.03-0.125			
CEFTAROLINE 0.016 - 256 µg/mL 0.002 - 32 µg/mL	CPT	<i>Enterobacterales</i>	0.5		1	2	<i>Enterobacterales</i>	0.5	0.5	<i>S. aureus</i>	ATCC® 29213	0.12-0.5	
		<i>S. aureus</i> only including MRSA	1		2-4	8		<i>S. aureus</i> (indications other than pneumonia)	1	2	<i>E. faecalis</i>	ATCC® 29212	0.25-2
		<i>Haemophilus</i> spp.	0.5		-	-		<i>S. aureus</i> (pneumonia)	1	1	<i>E. coli</i>	ATCC® 25922	0.03-0.12
		<i>S. pneumoniae</i> (nonmeningitis)	0.5		-	-		<i>S. pneumoniae</i>	0.25	0.25	<i>K. pneumoniae</i>	ATCC® 700603	2-8
		<i>Streptococcus</i> spp. β-Hemolytic Group	0.5		-	-		<i>H. influenzae</i>	0.03	0.03	<i>H. influenzae</i>	ATCC® 49247	0.03-0.12
		FDA ⁴						<i>H. influenzae</i>	0.03	0.03	<i>S. pneumoniae</i>	ATCC® 49619	0.008-0.03
		<i>S. aureus</i> (including MRSA)	1		2	4		PK/PD (Non-species related)	0.5	0.5	<i>B. fragilis</i>	ATCC® 25285	2-16
								breakpoints			<i>B. thetaiotaomicron</i>	ATCC® 29741	8-64
								<i>C. difficile</i>	ATCC® 700057	0.5-4			
								<i>H. influenzae</i>	ATCC® 49766	0.004-0.016			

Antibiotic	CODE	CLSI INTERPRETATIVE CRITERIA ¹	S≤	SDD MIC µg/mL	I	R≥	EUCAST INTERPRETATIVE CRITERIA ²	S≤	R>	QUALITY CONTROL		
										MIC µg/mL	MIC µg/mL	
CEFTAZIDIME 0.016 - 256 µg/mL	CAZ	<i>Enterobacterales</i> <i>P. aeruginosa</i> <i>Acinetobacter</i> spp. <i>B. cepacia</i> <i>S. maltophilia</i> Other Non-Enterobacterales <i>Haemophilus</i> spp. FDA ⁴ <i>P. aeruginosa</i>	4 8 8 8 8 8 2	8	8	16 16 32 16 32 16 -	<i>Enterobacterales</i> <i>Pseudomonas</i> spp. <i>Aeromonas</i> spp. <i>Vibrio</i> spp. <i>B. pseudomallei</i> PK/PD (Non-species related) breakpoints	1 0.001 1 1 0.001 4	4 8 4 1 8 8	<i>S. aureus</i> <i>E. coli</i> <i>P. aeruginosa</i> <i>K. pneumoniae</i> <i>H. influenzae</i> <i>N. gonorrhoeae</i>	ATCC® 29213 ATCC® 25922 ATCC® 27853 ATCC® 700603 ATCC® 49247 ATCC® 49226	4-16 0.06-0.5 1-4 16-64 0.12-1 0.03-0.12
CEFTAZIDIME-AVIBACTAM 0.016/4 - 256/4 µg/mL	CZA	<i>Enterobacterales</i> <i>P. aeruginosa</i>	8 8	-	-	16 16	<i>Enterobacterales</i> <i>Pseudomonas</i> spp. PK/PD (Non-species related) breakpoints	8 8 8	8 8 8	<i>S. aureus</i> <i>E. coli</i> <i>P. aeruginosa</i> <i>E. coli</i> <i>K. pneumoniae</i> <i>E. coli</i> <i>K. pneumoniae</i> <i>K. pneumoniae</i> <i>H. influenzae</i> <i>H. influenzae</i> <i>S. pneumoniae</i>	ATCC® 29213 ATCC® 25922 ATCC® 27853 ATCC® 35218 ATCC® 700603 NCTC 13353 ATCC® BAA-1705 ATCC® BAA-2814 ATCC® 49247 ATCC® 49766 ATCC® 49619	4-16 0.06-0.5 0.5-4 0.03-0.12 0.25-2 0.12-0.5 0.25-2 1-4 0.06-0.5 0.016-0.06 0.25-2
CEFTIBUTEN 0.002 - 32 µg/mL	CTB	<i>Enterobacterales</i> <i>H. influenzae</i>	8 2	-	-	16 -	<i>Enterobacterales</i> (UTI only) <i>H. influenzae</i>	1 1	1 1	<i>E. coli</i> <i>E. coli</i> <i>K. pneumoniae</i> <i>K. pneumoniae</i> <i>K. pneumoniae</i> <i>H. influenzae</i> <i>H. influenzae</i>	ATCC® 25922 NCTC 13353 ATCC® 700603 ATCC® BAA-1705 ATCC® BAA-2814 ATCC® 49247 ATCC® 49766	0.12-1 16-64 0.25-1 4-32 8-32 0.25-1 0.016-0.06
CEFTIZOXIME 0.002 - 32 µg/mL 0.016 - 256 µg/mL	CZX	<i>Enterobacterales</i> Other Non- <i>Enterobacterales</i> <i>Haemophilus</i> spp. <i>N. gonorrhoeae</i> Anaerobes	1 8 2 0.5 32	2	4	16-32 - - - 64	Not available			<i>S. aureus</i> <i>E. coli</i> <i>P. aeruginosa</i> <i>H. influenzae</i> <i>S. pneumoniae</i> <i>N. gonorrhoeae</i> <i>E. lenta</i>	ATCC® 29213 ATCC® 25922 ATCC® 27853 ATCC® 49247 ATCC® 49619 ATCC® 49226 ATCC® 43055	2-8 0.03-0.12 16-64 0.06-0.5 0.12-0.5 0.008-0.03 8-32
CEFTOBIPROLE 0.002 - 32 µg/mL	BPR	Not available					<i>Enterobacterales</i> <i>S. aureus</i> <i>S. pneumoniae</i> PK/PD (Non-species related) breakpoints	0.25 2 0.5 4	0.25 2 0.5 4	<i>S. aureus</i> <i>E. faecalis</i> <i>E. coli</i> <i>P. aeruginosa</i> <i>H. influenzae</i> <i>H. influenzae</i> <i>S. pneumoniae</i>	ATCC® 29213 ATCC® 29212 ATCC® 25922 ATCC® 27853 ATCC® 49247 ATCC® 49766 ATCC® 49619	0.12-1 0.06-0.5 0.03-0.12 1-4 0.12-1 0.016-0.06 0.004-0.03
CEFTOLOZANE-TAZOBACTAM 0.016/4 - 256/4 µg/mL	C/T	<i>Enterobacterales</i> <i>P. aeruginosa</i> <i>Haemophilus</i> spp. <i>Streptococcus</i> spp. Viridans Group FDA ⁴ <i>B. fragilis</i>	2 4 0.5 8 8	4	8	16 8 - 16 32 16	<i>Enterobacterales</i> <i>P. aeruginosa</i> <i>H. influenzae</i> PK/PD (Non-species related) breakpoints	2 4 0.5 4	2 4 0.5 4	<i>S. aureus</i> <i>E. coli</i> <i>P. aeruginosa</i> <i>E. coli</i> <i>K. pneumoniae</i>	ATCC® 29213 ATCC® 25922 ATCC® 27853 ATCC® 35218 ATCC® 700603	16-64 0.12-0.5 0.25-1 0.06-0.25 0.5-2

Antibiotic	CODE	CLSI INTERPRETATIVE CRITERIA ¹	S≤	SDD MIC µg/mL	I	R≥	EUCAST INTERPRETATIVE CRITERIA ²	S≤	R>	QUALITY CONTROL		MIC µg/mL
CEFTRIAXONE 0.016 - 256 µg/mL 0.002 - 32 µg/mL	CRO	<i>Enterobacterales</i>	1		2	4	<i>Enterobacterales</i> (other than meningitis)	1	2	<i>S. aureus</i>	ATCC® 29213	1-8
		<i>Acinetobacter spp.</i>	8		16-32	64	<i>Enterobacterales</i> (meningitis)	1	1	<i>E. coli</i>	ATCC® 25922	0.03-0.12
		Other Non- <i>Enterobacterales</i>	8		16-32	64	<i>S. pneumoniae</i> (other than meningitis)	0.5	2	<i>P. aeruginosa</i>	ATCC® 27853	8-64
		<i>Haemophilus spp.</i>	2		-	-	<i>S. pneumoniae</i> (meningitis)	0.5	0.5	<i>H. influenzae</i>	ATCC® 49247	0.06-0.25
		<i>N. gonorrhoeae</i>	0.25		-	-	Viridans group streptococci	0.5	0.5	<i>S. pneumoniae</i>	ATCC® 49619	0.03-0.12
		<i>S. pneumoniae</i> (meningitis)	0.5		1	2	<i>H. influenzae</i> (other than meningitis)	0.125	0.125	<i>N. gonorrhoeae</i>	ATCC® 49226	0.004-0.016
		<i>S. pneumoniae</i> (nonmeningitis)	1		2	4	<i>H. influenzae</i> (meningitis)	0.125	0.125	<i>H. influenzae</i>	ATCC® 49766	0.002-0.008
		<i>Streptococcus spp. β-Hemolytic Group</i>	0.5		-	-	<i>M. catarrhalis</i>	1	2			
		<i>Streptococcus spp. Viridans Group</i>	1		2	4	<i>N. gonorrhoeae</i>	0.125	0.125			
		<i>N. meningitidis</i>	0.12		-	-	<i>N. meningitidis</i> (all indications including prophylaxis)	0.125	0.125			
		Anaerobes	16		32	64	<i>K. kingae</i>	0.06	0.06			
		EDA ⁴					PK/PD (Non-species related) breakpoints	1	2			
				Anaerobes	1		2	4				
CEFUROXIME 0.016 - 256 µg/mL	CXM	<i>Enterobacterales</i> (parenteral)	8		16	32	<i>Enterobacterales</i>	8	8	<i>S. aureus</i>	ATCC® 29213	0.5-2
		<i>Enterobacterales</i> (oral)	4		8-16	32	<i>S. pneumoniae</i> (iv)	0.5	1	<i>E. coli</i>	ATCC® 25922	2-8
		<i>Haemophilus spp</i>	4		8	16	<i>S. pneumoniae</i> (oral)	0.25	0.25	<i>H. influenzae</i>	ATCC® 49766	0.25-1
		<i>S. pneumoniae</i> (parenteral)	0.5		1	2	Viridans group streptococci (iv)	0.5	0.5	<i>S. pneumoniae</i>	ATCC® 49619	0.25-1
		<i>S. pneumoniae</i> (oral)	1		2	4	<i>H. influenzae</i> (iv)	1	2	<i>N. gonorrhoeae</i>	ATCC® 49226	0.25-1
		EDA ⁴					<i>H. influenzae</i> (oral)	0.001	1			
		<i>Enterobacterales</i> (injection)	8		-	16	<i>M. catarrhalis</i> (iv)	4	8			
							<i>M. catarrhalis</i> (oral)	0.001	4			
							<i>C. acnes</i>	0.06	0.06			
							<i>K. kingae</i> (iv)	0.5	0.5			
					PK/PD (Non-species related) breakpoints (iv)	4	8					
CEPHALOTHIN 0.016 - 256 µg/mL	KF	Not available				Not available				<i>S. aureus</i>	ATCC® 29213	0.12-0.5
										<i>E. coli</i>	ATCC® 25922	4-16
										<i>S. pneumoniae</i>	ATCC® 49619	0.5-2
CHLORAMPHENICOL 0.016 - 256 µg/mL	C	<i>Enterobacterales</i>	8		16	32	<i>Enterobacterales</i>	8(*)	8(*)	<i>S. aureus</i>	ATCC® 29213	2-16
		<i>B. cepacia</i>	8		16	32	<i>Staphylococcus spp.</i>	8	8	<i>E. faecalis</i>	ATCC® 29212	4-16
		<i>S. maltophilia</i>	8		16	32	Streptococcus groups A, B, C and G	8	8	<i>E. coli</i>	ATCC® 25922	2-8
		Other non <i>Enterobacterales</i>	8		16	32	<i>S. pneumoniae</i>	8	8	<i>H. influenzae</i>	ATCC® 49247	0.25-1
		All staphylococci	8		16	32	<i>H. influenzae</i>	2	2	<i>S. pneumoniae</i>	ATCC® 49619	2-8
		<i>Enterococcus spp.</i>	8		16	32	<i>M. catarrhalis</i>	2	2	<i>B. fragilis</i>	ATCC® 25285	4-16
		<i>Haemophilus spp.</i>	2		4	8	<i>N. meningitidis</i>	2	2	<i>B. thetaiotaomicron</i>	ATCC® 29741	8-32
		<i>S. pneumoniae</i>	4		-	8	<i>B. pseudomallei</i>	0.001	8	<i>E. lenta</i>	ATCC® 43055	4-16
		<i>Streptococcus spp. β-Hemolytic Group</i>	4		8	16				<i>H. influenzae</i>	ATCC® 49766	0.25-1
		<i>Streptococcus spp. Viridans Group</i>	4		8	16						
		<i>N. meningitidis</i>	2		4	8						
		Anaerobes	8		16	32						

Antibiotic	CODE	CLSI INTERPRETATIVE CRITERIA ¹				EUCAST INTERPRETATIVE CRITERIA ²				QUALITY CONTROL	
		S≤	SDD MIC µg/mL	I	R≥	S≤	SDD MIC µg/mL	R>	MIC µg/mL	MIC µg/mL	
CIPROFLOXACIN 0.002 - 32 µg/mL	CIP	<i>Enterobacterales</i> except	0.25	0.5	1	<i>Salmonella</i> spp.	0.06	0.06	<i>S. aureus</i>	ATCC® 29213	0.12-0.5
		<i>Salmonella</i> spp.				<i>Enterobacterales</i> (indications other than meningitis)	0.25	0.5	<i>E. faecalis</i>	ATCC® 29212	0.25-2
		<i>Salmonella</i> spp.	0.06	0.12-0.5	1	<i>Enterobacterales</i> (meningitis)	0.125	0.125	<i>E. coli</i>	ATCC® 25922	0.004-0.016
		<i>P. aeruginosa</i>	0.5	1	2	<i>Pseudomonas</i> spp.	0.001	0.5	<i>P. aeruginosa</i>	ATCC® 27853	0.12-1
		<i>Acinetobacter</i> spp.	1	2	4	<i>Acinetobacter</i> spp.	0.001	1	<i>H. influenzae</i>	ATCC® 49247	0.004-0.03
		Other non <i>Enterobacterales</i>	1	2	4	<i>S. aureus</i>	0.001	1	<i>N. gonorrhoeae</i>	ATCC® 49226	0.001-0.008
		All staphylococci	1	2	4	Coagulase negative staphylococci	0.001	1	<i>H. influenzae</i>	ATCC® 49766	0.004-0.016
		<i>Enterococcus</i> spp.	1	2	4	<i>Enterococcus</i> spp.	4	4			
		<i>Haemophilus</i> spp.	1	-	-	<i>S. pneumoniae</i>	0.12	2			
		<i>N. gonorrhoeae</i>	0.06	0.12-0.5	1	<i>H. influenzae</i> (indications other than meningitis)	0.06	0.06			
		<i>N. meningitidis</i>	0.03	0.06	0.12	<i>H. influenzae</i> (meningitis)	0.03	0.03			
		FDA ⁴				<i>M. catarrhalis</i>	0.125	0.125			
		<i>S. pneumoniae</i>	1	2	4	<i>N. gonorrhoeae</i>	0.03	0.06			
		<i>Streptococcus</i> spp. β-Hemolytic Group	1	2	4	<i>N. meningitidis</i> (all indications, including meningitis and prophylaxis)	0.016	0.016			
						<i>P. multocida</i>	0.06	0.06			
						<i>C. jejuni</i> and <i>coli</i>	0.001	0.5			
						<i>Corynebacterium</i> spp. (other than <i>C. diphtheriae</i> and <i>C. ulcerans</i>)	0.001	1			
				<i>C. diphtheriae</i> and <i>C. ulcerans</i>	2	2					
				<i>Aerococcus sanguinicola</i> and <i>urinae</i>	0.06	0.06					
				<i>K. kingae</i>	0.25	0.5					
				<i>Aeromonas</i> spp.	0.25	0.25					
				<i>Bacillus</i> spp. except <i>B. anthracis</i>	0.001	0.5					
				PK/PD (Non-species related) breakpoints	0.25	0.5					
CLARITHROMYCIN 0.016 - 256 µg/mL	CLR	All staphylococci	2	4	8	<i>Staphylococcus</i> spp.	1	1	<i>S. aureus</i>	ATCC® 29213	0.12-0.5
		<i>H. influenzae</i>	8	16	32	<i>Streptococcus</i> groups A, B, C and G	0.25	0.25	<i>H. influenzae</i> (-CO ₂)	ATCC® 49247	4-16
		<i>S. pneumoniae</i>	0.25	0.5	1	<i>S. pneumoniae</i>	0.25	0.25	<i>H. influenzae</i> (+CO ₂)	ATCC® 49247	8-32
		<i>Streptococcus</i> spp. β-Hemolytic Group	0.25	0.5	1	<i>M. catarrhalis</i>	0.25	0.25	<i>S. pneumoniae</i> (-CO ₂)	ATCC® 49619	0.032-0.125
		<i>Streptococcus</i> spp. Viridans Group	0.25	0.5	1	<i>H. pylori</i>	0.25	0.25	<i>S. pneumoniae</i> (+CO ₂)	ATCC® 49619	0.064-0.25
						<i>K. kingae</i>	0.5	0.5			
CLINDAMYCIN 0.016 - 256 µg/mL	CD	All staphylococci	0.5	1-2	4	<i>Staphylococcus</i> spp.	0.25	0.25	<i>S. aureus</i>	ATCC® 29213	0.06-0.25
		<i>S. pneumoniae</i>	0.25	0.5	1	<i>Streptococcus</i> groups A, B, C and G	0.5	0.5	<i>E. faecalis</i>	ATCC® 29212	4-16
		<i>Streptococcus</i> spp. β-Hemolytic Group	0.25	0.5	1	<i>S. pneumoniae</i>	0.5	0.5	<i>S. pneumoniae</i> (-CO ₂)	ATCC® 49619	0.032-0.125
		<i>Streptococcus</i> spp. Viridans Group	0.25	0.5	1	Viridans group streptococci	0.5	0.5	<i>S. pneumoniae</i> (+CO ₂)	ATCC® 49619	0.064-0.25
		Anaerobes	2	4	8	<i>Bacteroides</i> spp.	(4)	(4)	<i>B. fragilis</i>	ATCC® 25285	0.5-2
						<i>Prevotella</i> spp.	0.25	0.25	<i>B. fragilis</i> (FAA-HB)	ATCC® 25285	0.5-2
						<i>F. necrophorum</i>	0.25	0.25	<i>B. thetaiotaomicron</i>	ATCC® 29741	2-8
						<i>C. perfringens</i>	0.25	0.25	<i>E. lenta</i>	ATCC® 43055	0.06-0.25
						<i>C. acnes</i>	0.25	0.25			
						<i>Corynebacterium</i> spp. (other than <i>C. diphtheriae</i> and <i>C. ulcerans</i>)	0.5	0.5			
						<i>C. diphtheriae</i>	0.5	0.5			
				<i>Bacillus</i> spp. except <i>B. anthracis</i>	1	1					
COLISTIN 0.016 - 256 µg/mL 0.064 - 1024 µg/mL	CS	<i>Enterobacterales</i>	-	2	4	<i>Enterobacterales</i>	(2)	(2)	<i>E. coli</i>	ATCC® 25922	0.25-2
		<i>P. aeruginosa</i>	-	2	4	<i>Pseudomonas</i> spp.	(4)	(4)	<i>P. aeruginosa</i>	ATCC® 27853	0.5-4
		<i>Acinetobacter</i> spp.	-	2	4	<i>Acinetobacter</i> spp.	(2)	(2)	<i>E. coli</i>	NCTC 13846	2-8 (EUCAST)
								<i>E. coli</i>	NCTC 13846	1-4 (CLSI)	

Antibiotic	CODE	CLSI INTERPRETATIVE CRITERIA ¹				EUCAST INTERPRETATIVE CRITERIA ²			QUALITY CONTROL		MIC µg/mL
		S≤	SDD MIC µg/mL	I	R≥	S≤ MIC µg/mL	R>				
DALBAVANCIN 0.002 - 32 µg/mL	DAL	<i>S. aureus</i> only including MRSA	0.25	-	-	<i>Staphylococcus</i> spp. <i>S. anginosus</i> group PK/PD (Non-species related) breakpoints	0.125	0.125	<i>S. aureus</i> ATCC® 29213 <i>E. faecalis</i> ATCC® 29212 <i>S. pneumoniae</i> ATCC® 49619	0.03-0.12	
		<i>Enterococcus</i> spp.	0.25	-	-						0.03-0.12
		<i>Streptococcus</i> spp. β-Hemolytic Group	0.25	-	-						0.008-0.03
		<i>Streptococcus</i> spp. Viridans Group	0.25	-	-						
DAPTOMYCIN 0.016 - 256 µg/mL	DAP	All staphylococci	1	-	-	<i>Staphylococcus</i> spp. Streptococcus groups A, B, C and G	1	1	<i>S. aureus</i> ATCC® 29213 <i>E. faecalis</i> ATCC® 29212 <i>S. pneumoniae</i> ATCC® 49619	0.12-1	
		<i>E. faecium</i> only	-	4	8						1-4
		<i>Enterococcus</i> spp. other than <i>E. faecium</i> .	2	4	8						0.06-0.5
		<i>Streptococcus</i> spp. β-Hemolytic Group	1	-	-						
		<i>Streptococcus</i> spp. Viridans Group	1	-	-						
		FDA ⁴ <i>E. faecalis</i> (including vancomycin-resistant isolates)	2	4	8						
DELAFLORACIN 0.002 - 32 µg/mL	DLX	FDA ⁴ For ABSSSI: <i>S. aureus</i> (methicillin-resistant and methicillin-susceptible isolates)	0.25	0.5	1	<i>E. coli</i> <i>S. aureus</i> (community-acquired pneumonia) <i>S. aureus</i> (skin and skin structure infections) Streptococcus groups A, B, C and G <i>S. anginosus</i> group	0.125	0.125	<i>S. aureus</i> ATCC® 29213 <i>E. faecalis</i> ATCC® 29212 <i>E. coli</i> ATCC® 25922 <i>P. aeruginosa</i> ATCC® 27853 <i>H. influenzae</i> ATCC® 49247 <i>S. pneumoniae</i> ATCC® 49619	0.001-0.008	
		<i>S. haemolyticus</i>	0.25	0.5	1		0.016	0.016			0.016-0.12
		<i>S. lugdunensis</i>	0.03	-	-		0.25	0.25			0.008-0.03
		<i>S. pyogens</i>	0.06	-	-		0.03	0.03			0.12-0.5
		<i>S. agalactiae</i>	0.06	0.12	0.25		0.03	0.03			0.00025-0.001
		<i>S. anginus</i> Group	0.06	-	-		0.03	0.03			0.004-0.016
		<i>E. faecalis</i>	0.12	0.25	0.5						
		<i>E. coli</i> , <i>K. pneumoniae</i> , and <i>E. cloacae</i> only	0.25	0.5	1						
		<i>P. aeruginosa</i>	0.5	1	2						
		For CABP: <i>S. pneumoniae</i>	0.03	-	-						
		<i>S. aureus</i> (methicillin-susceptible isolates)	0.12	0.25	0.5						
		<i>H. influenzae</i>	0.004	-	-						
		<i>H. parainfluenzae</i>	0.06	-	-						
		<i>E. coli</i>	0.25	0.5	1						
		<i>K. pneumoniae</i>	0.25	0.5	1						
		<i>P. aeruginosa</i>	0.5	1	2						
DORIPENEM 0.002 - 32 µg/mL	DOR	<i>Enterobacteriales</i>	1	2	4	<i>Enterobacteriales</i> <i>Pseudomonas</i> spp. <i>Acinetobacter</i> spp. <i>S. pneumoniae</i> Viridans group streptococci <i>H. influenzae</i> <i>M. catarrhalis</i> PK/PD (Non-species related) breakpoints	1	2	<i>S. aureus</i> ATCC® 29213 <i>E. faecalis</i> ATCC® 29212 <i>E. coli</i> ATCC® 25922 <i>P. aeruginosa</i> ATCC® 27853 <i>H. influenzae</i> ATCC® 49766 <i>S. pneumoniae</i> ATCC® 49619 <i>B. fragilis</i> ATCC® 25285 <i>B. thetaiotaomicron</i> ATCC® 29741	0.016-0.06	
		<i>P. aeruginosa</i>	2	4	8		0.001	2			1-4
		<i>Acinetobacter</i> spp.	2	4	8		0.001	2			0.016-0.06
		<i>Staphylococcus</i> spp.	0.5	-	-		1	1			0.12-0.5
		<i>Haemophilus</i> spp.	1	-	-		1	1			0.06-0.25
		<i>S. pneumoniae</i>	1	-	-		1	1			0.03-0.12
		<i>Streptococcus</i> spp. β-Hemolytic Group	0.12	-	-		1	1			0.12-0.5
		<i>Streptococcus</i> spp. Viridans Group	1	-	-		1	2			0.12-1
		Anaerobes	2	4	8						
		FDA ⁴									
		Anaerobes	1	-	-						

Antibiotic	CODE	CLSI INTERPRETATIVE CRITERIA ¹	S≤	SDD MIC µg/mL	I	R≥	EUCAST			QUALITY CONTROL		
							INTERPRETATIVE CRITERIA ²			S≤	R>	MIC µg/mL
DOXYCYCLINE 0.016 - 256 µg/mL	DXT	<i>Enterobacterales</i>	4		8	16	<i>Staphylococcus</i> spp.	1	1	<i>S. aureus</i>	ATCC® 29213	0.12-0.5
		<i>Acinetobacter</i> spp.	4		8	16	Streptococcus groups A, B, C and G	1	1	<i>E. faecalis</i>	ATCC® 29212	2-8
		Other Non-Enterobacterales	4		8	16	<i>S. pneumoniae</i>	1	1	<i>E. coli</i>	ATCC® 25922	0.5-2
		All staphylococci	4		8	16	<i>H. influenzae</i>	1	1	<i>S. pneumoniae</i>	ATCC® 49619	0.016-0.12
		<i>Enterococcus</i> spp.	4		8	16	<i>M. catarrhalis</i>	1	1	<i>B. thetaiotaomicron</i>	ATCC® 29741	2-8
		<i>S. pneumoniae</i>	0.25		0.5	1	<i>P. multocida</i>	1	1	<i>E. lenta</i>	ATCC® 43055	2-16
							<i>C. diphtheriae</i> and <i>C. ulcerans</i>	0.5	0.5	<i>H. influenzae</i>	ATCC® 49766	0.25-1
							<i>K. kingae</i>	0.5	0.5			
							<i>Vibrio</i> spp.	0.5	0.5			
							<i>B. pseudomallei</i>	0.001	2			
ERAVACYCLINE 0.002 - 32 µg/mL	ERV	FDA ⁴					<i>E. coli</i>	0.5	0.5	<i>S. aureus</i>	ATCC® 29213	0.016-0.12
		<i>Enterobacteriaceae</i>	0.5		-	-	<i>S. aureus</i>	0.25	0.25	<i>E. faecalis</i>	ATCC® 29212	0.016-0.06
		<i>S. aureus</i>	0.06		-	-	<i>E. faecalis</i>	0.125	0.125	<i>E. coli</i>	ATCC® 25922	0.016-0.12
		<i>E. faecalis, E. faecium</i>	0.06		-	-	<i>E. faecium</i>	0.125	0.125	<i>P. aeruginosa</i>	ATCC® 27853	2-16
		<i>S. anginosus</i> Group	0.06		-	-	Viridans group streptococci	0.125	0.125	<i>H. influenzae</i>	ATCC® 49247	0.06-0.5
		Anaerobes	0.5		-	-				<i>S. pneumoniae</i>	ATCC® 49619	0.004-0.03
										<i>B. fragilis</i>	ATCC® 25285	0.016-0.12
								<i>B. thetaiotaomicron</i>	ATCC® 29741	0.06-0.25		
								<i>C. difficile</i>	ATCC® 700057	0.016-0.06		
ERTAPENEM 0.002 - 32 µg/mL	ETP	<i>Enterobacterales</i>	0.5		1	2	<i>Enterobacterales</i>	0.5	0.5	<i>S. aureus</i>	ATCC® 29213	0.06-0.25
		<i>Staphylococcus</i> spp.	2		4	8	<i>S. pneumoniae</i>	0.5	0.5	<i>E. faecalis</i>	ATCC® 29212	4-16
		<i>Haemophilus</i> spp.	0.5		-	-	Viridans group streptococci	0.5	0.5	<i>E. coli</i>	ATCC® 25922	0.004-0.016
		<i>S. pneumoniae</i>	1		2	4	<i>H. influenzae</i>	0.5	0.5	<i>P. aeruginosa</i>	ATCC® 27853	2-8
		Streptococcus spp. β-Hemolytic Group	1		-	-	<i>M. catarrhalis</i>	0.5	0.5	<i>H. influenzae</i>	ATCC® 49766	0.016-0.06
		Streptococcus spp. Viridans Group	1		-	-	<i>Bacteroides</i> spp.	(2)	(2)	<i>S. pneumoniae</i>	ATCC® 49619	0.03-0.25
		Anaerobes	4		8	16	<i>Prevotella</i> spp.	0.5	0.5	<i>B. fragilis</i>	ATCC® 25285	0.06-0.5
							<i>F. necrophorum</i>	0.06	0.06	<i>B. fragilis</i> (FAA-HB)	ATCC® 25285	0.06-0.25
							<i>C. perfringens</i>	0.5	0.5	<i>B. thetaiotaomicron</i>	ATCC® 29741	0.5-2
							<i>C. acnes</i>	0.25	0.25	<i>E. lenta</i>	ATCC® 43055	0.5-4
							PK/PD (Non-species related) breakpoints	0.5	0.5			
ERYTHROMYCIN 0.016 - 256 µg/mL	E	All staphylococci	0.5		1-4	8	<i>Staphylococcus</i> spp.	1	1	<i>S. aureus</i>	ATCC® 29213	0.25-1
		<i>Enterococcus</i> spp.	0.5		1-4	8	Streptococcus groups A, B, C and G	0.25	0.25	<i>E. faecalis</i>	ATCC® 29212	1-4
		<i>S. pneumoniae</i>	0.25		0.5	1	<i>S. pneumoniae</i>	0.25	0.25	<i>S. pneumoniae</i> (-CO ₂)	ATCC® 49619	0.032-0.125
		Streptococcus spp. β-Hemolytic Group	0.25		0.5	1	<i>M. catarrhalis</i>	0.25	0.25	<i>S. pneumoniae</i> (+CO ₂)	ATCC® 49619	0.064-0.25
		Streptococcus spp. Viridans Group	0.25		0.5	1	<i>L. monocytogenes</i> (indications other than meningitis)	1	1			
							<i>C. jejuni</i>	4	4			
							<i>C. coli</i>	8	8			
							<i>C. diphtheriae</i> and <i>C. ulcerans</i>	0.06	0.06			
					<i>K. kingae</i>	0.5	0.5					
					<i>Bacillus</i> spp. except <i>B. anthracis</i>	0.5	0.5					
FOSFOMYCIN 0.016 - 256 µg/mL 0.064 - 1024 µg/mL	FOS	<i>Enterobacterales</i>	64		128	256	<i>Enterobacterales</i> (iv)	32	32	<i>S. aureus</i>	ATCC® 29213	0.5-4
		<i>Enterococcus</i> spp.	64		128	256	<i>E. coli</i> (oral)	8	8	<i>E. faecalis</i>	ATCC® 29212	32-128
							<i>Staphylococcus</i> spp (iv)	32	32	<i>E. coli</i>	ATCC® 25922	0.5-2
							PK/PD (Non-species related) breakpoints (oral, uncomplicated UTI only)	8	8	<i>P. aeruginosa</i>	ATCC® 27853	2-8
FUSIDIC ACID 0.016 - 256 µg/mL	FU	Not available					<i>Staphylococcus</i> spp.	1	1	<i>S. aureus</i>	ATCC® 29213	0.06-0.25
										<i>S. pneumoniae</i>	ATCC® 49619	4-32

Antibiotic	CODE	CLSI INTERPRETATIVE CRITERIA ¹				EUCAST INTERPRETATIVE CRITERIA ²			QUALITY CONTROL		
		S≤	SDD MIC µg/mL	I	R≥	S≤	R>	MIC µg/mL	MIC µg/mL	MIC µg/mL	
GATIFLOXACIN 0.002 - 32 µg/mL	GAT	<i>Enterobacteriales</i> except	2	4	8	Not available			<i>S. aureus</i>	ATCC® 29213	0.03-0.12
		<i>Salmonella</i> spp.							<i>E. faecalis</i>	ATCC® 29212	0.12-1
		<i>P. aeruginosa</i>	2	4	8				<i>E. coli</i>	ATCC® 25922	0.008-0.03
		<i>Acinetobacter</i> spp.	2	4	8				<i>P. aeruginosa</i>	ATCC® 27853	0.5-2
		Other Non-Enterobacteriales	2	4	8				<i>H. influenzae</i>	ATCC® 49247	0.004-0.03
		All staphylococci	0.5	1	2				<i>S. pneumoniae</i>	ATCC® 49619	0.12-0.5
		<i>Enterococcus</i> spp.	2	4	8				<i>N. gonorrhoeae</i>	ATCC® 49226	0.002-0.016
		<i>Haemophilus</i> spp.	1	-	-						
		<i>N. gonorrhoeae</i>	0.125	0.25	0.5						
		<i>S. pneumoniae</i>	1	2	4						
		<i>Streptococcus</i> spp. β-Hemolytic Group	1	2	4						
		<i>Streptococcus</i> spp. Viridans Group	1	2	4						
		GEMIFLOXACIN 0.002 - 32 µg/mL	GEM	<i>Enterobacteriales</i>	0.25	0.5	1	Not available			<i>S. aureus</i>
<i>Haemophilus</i> spp.	0.12			-	-				<i>E. faecalis</i>	ATCC® 29212	0.016-0.12
<i>S. pneumoniae</i>	0.12			0.25	0.5				<i>E. coli</i>	ATCC® 25922	0.004-0.016
									<i>P. aeruginosa</i>	ATCC® 27853	0.25-1
GENTAMICIN 0.016 - 256 µg/mL 0.064 - 1024 µg/mL	CN	<i>Enterobacteriales</i>	2	4	8	<i>Enterobacteriales</i> (systemic infections)	(2)	(2)	<i>S. aureus</i>	ATCC® 29213	0.12-1
		<i>Acinetobacter</i> spp.	4	8	16	<i>Enterobacteriales</i> (infections originating from the urinary tract)	2	2	<i>E. faecalis</i>	ATCC® 29212	4-16
		Other Non-Enterobacteriales	4	8	16	<i>Pseudomonas</i> spp.	4	4	<i>E. coli</i>	ATCC® 25922	0.25-1
		All staphylococci	4	8	16	<i>Acinetobacter</i> spp.	4	4	<i>P. aeruginosa</i>	ATCC® 27853	0.5-2
		<i>Enterococcus</i> spp. (test for detection of HLAR)	500	-	500	<i>S. aureus</i>	(2)	(2)	<i>N. gonorrhoeae</i>	ATCC® 49226	4-16
		<u>FDA</u> ⁴				Coagulase-negative staphylococci	(2)	(2)	HLAR		
		<i>Enterobacteriales</i>	4	8	16	PK/PD (Non-species related) breakpoints	0.5	0.5	<i>E. faecalis</i>	ATCC® 29212	≤ 500
		<i>P. aeruginosa</i>	4	8	16	<i>Enterococcus</i> spp. (test for high-level gentamicin resistance)	128	128	<i>E. faecalis</i>	ATCC® 51299	> 500
		IMIPENEM 0.002 - 32 µg/mL 0.016 - 256 µg/mL	IMI	<i>Enterobacteriales</i>	1	2	4	<i>Enterobacteriales</i> (except <i>Morganellaceae</i>)	2	4	<i>S. aureus</i>
<i>P. aeruginosa</i>	2			4	8	<i>Morganellaceae</i>	0.001	4	<i>E. faecalis</i>	ATCC® 29212	0.5-2
<i>Acinetobacter</i> spp.	2			4	8	<i>Pseudomonas</i> spp.	0.001	4	<i>E. coli</i>	ATCC® 25922	0.06-0.5
Other Non-Enterobacteriales	4			8	16	<i>Acinetobacter</i> spp.	2	4	<i>P. aeruginosa</i>	ATCC® 27853	1-4
<i>Staphylococcus</i> spp.	4			8	16	<i>Enterococcus</i> spp.	0.001	4	<i>K. pneumoniae</i>	ATCC® 700603	0.06-0.5
<i>Haemophilus</i> spp.	4			-	-	<i>S. pneumoniae</i>	2	2	<i>K. pneumoniae</i>	ATCC® BAA-1705	4-16
<i>S. pneumoniae</i>	0.12			0.25-0.5	1	Viridans group streptococci	2	2	<i>K. pneumoniae</i>	ATCC® BAA-2814	16-64
Anaerobes	4			8	16	<i>H. influenzae</i>	2	2	<i>H. influenzae</i>	ATCC® 49766	0.25-1
						<i>M. catarrhalis</i>	2	2	<i>S. pneumoniae</i>	ATCC® 49619	0.03-0.12
						<i>Bacteroides</i> spp.	1	1	<i>B. fragilis</i>	ATCC® 25285	0.03-0.25
						<i>Prevotella</i> spp.	0.125	0.125	<i>B. fragilis</i> (FAA-HB)	ATCC® 25285	0.03-0.125
						<i>F. necrophorum</i>	0.125	0.125	<i>B. thetaiotaomicron</i>	ATCC® 29741	0.25-1
						<i>C. perfringens</i>	0.5	0.5	<i>E. lenta</i>	ATCC® 43055	0.25-2
						<i>C. acnes</i>	0.03	0.03			
						<i>B. pseudomallei</i>	2	2			
						<i>Bacillus</i> spp. except <i>B. anthracis</i>	0.5	0.5			
						PK/PD (Non-species related) breakpoints	2	4			

Antibiotic	CODE	CLSI INTERPRETATIVE CRITERIA ¹				EUCAST INTERPRETATIVE CRITERIA ²				QUALITY CONTROL						
		S≤	SDD MIC µg/mL	I	R≥	S≤	MIC µg/mL	R>		MIC µg/mL						
IMIPENEM-RELEBACTAM 0.002/4 - 32/4 µg/mL	I/R	<i>Enterobacterales</i> except <i>Morganellaceae</i>	1		2	4			<i>Enterobacterales</i> (except <i>Morganellaceae</i>)	2	2	<i>E. coli</i>	ATCC® 25922	0.06-0.5		
		<i>P. aeruginosa</i>	2		4	8				<i>P. aeruginosa</i>	2	2	<i>P. aeruginosa</i>	ATCC® 27853	0.25-1	
		Anaerobes FDA ⁴	4		8	16			Acinetobacter spp.	2	2	<i>S. aureus</i>	ATCC® 29213	0.008-0.03		
		<i>A. calcoaceticus-baumannii</i> complex	2		4	8			Viridans group streptococci	2	2	<i>E. faecalis</i>	ATCC® 29212	0.5-2		
		<i>H. influenzae</i>	4		-	-		PK/PD (Non-species related) breakpoints	2	2	<i>E. coli</i>	ATCC® 35218	0.06-0.25			
											<i>K. pneumoniae</i>	ATCC® 700603	0.06-0.5			
											<i>K. pneumoniae</i>	ATCC® BAA-1705	0.03-0.25			
											<i>K. pneumoniae</i>	ATCC® BAA-2814	0.06-0.5			
											<i>H. influenzae</i>	ATCC® 49766	0.25-1			
											<i>S. pneumoniae</i>	ATCC® 49619	0.016-0.12			
											<i>B. fragilis</i>	ATCC® 25285	0.03-0.125			
KANAMYCIN 0.016 - 256 µg/mL	K	<i>Enterobacterales</i>	16		32	64			Not available			<i>S. aureus</i>	ATCC® 29213	1-4		
		<i>Staphylococcus</i> spp.	16		32	64							<i>E. faecalis</i>	ATCC® 29212	16-64	
											<i>E. coli</i>	ATCC® 25922	1-4			
LEFAMULIN 0.016 - 256 µg/mL	LMU	<i>S. aureus</i> , including MRSA	0.25	-	-	-			<i>S. aureus</i>	0.25	0.25	<i>S. aureus</i>	ATCC® 29213	0.06-0.25		
		<i>Haemophilus</i> spp.	2	-	-	-			<i>S. pneumoniae</i>	0.5	0.5	<i>H. influenzae</i>	ATCC® 49247	0.5-2		
		<i>S. pneumoniae</i>	0.5	-	-	-			PK/PD (Non-species related) breakpoints	0.25	0.25	<i>S. pneumoniae</i>	ATCC® 49619	0.06-0.5		
LEVOFLOXACIN 0.002 - 32 µg/mL	LEV	<i>Enterobacterales</i> except <i>Salmonella</i> spp.	0.5		1	2			<i>Enterobacterales</i>	0.5	1	<i>S. aureus</i>	ATCC® 29213	0.06-0.5		
		<i>Salmonella</i> spp.	0.12	0.25-1	2	4			<i>Pseudomonas</i> spp.	0.001	2	<i>E. faecalis</i>	ATCC® 29212	0.25-2		
		<i>P. aeruginosa</i>	1	2	4	8			Acinetobacter spp.	0.5	1	<i>E. coli</i>	ATCC® 25922	0.008-0.06		
		Acinetobacter spp.	2	4	8	16			<i>S. aureus</i>	0.001	1	<i>P. aeruginosa</i>	ATCC® 27853	0.5-4		
		<i>B. cepacia</i>	2	4	8	16			Coagulase-negative staphylococci	0.001	1	<i>H. influenzae</i>	ATCC® 49247	0.008-0.03		
		<i>S. maltophilia</i>	2	4	8	16			<i>Enterococcus</i> spp.	4	4	<i>S. pneumoniae</i>	ATCC® 49619	0.5-2		
		Other Non-Enterobacterales	2	4	8	16			Streptococcus groups A, B, C and G	0.001	2	<i>H. influenzae</i>	ATCC® 49766	0.008-0.03		
		All staphylococci	1	2	4	8			<i>S. pneumoniae</i>	0.001	2	<i>S. pneumoniae</i>	ATCC® 49619	0.5-2		
		<i>Enterococcus</i> spp.	2	4	8	16			<i>H. influenzae</i>	0.06	0.06	<i>H. influenzae</i>	ATCC® 49766	0.008-0.03		
		<i>Haemophilus</i> spp.	2	-	-	-			<i>M. catarrhalis</i>	0.12	0.12	<i>S. pneumoniae</i>	ATCC® 49619	0.5-2		
		<i>S. pneumoniae</i>	2	4	8	16			<i>H. pylori</i>	1	1	<i>H. influenzae</i>	ATCC® 49766	0.008-0.03		
		Streptococcus spp. β-Hemolytic Group	2	4	8	16			<i>P. multocida</i>	0.06	0.06	<i>H. influenzae</i>	ATCC® 49766	0.008-0.03		
		Streptococcus spp. Viridans Group	2	4	8	16			Aerococcus <i>sanguinicola</i> and <i>urinae</i>	2	2	<i>S. pneumoniae</i>	ATCC® 49619	0.5-2		
		<i>N. meningitidis</i>	0.03	0.06	0.12	0.25			<i>K. kingae</i>	0.125	0.125	<i>H. influenzae</i>	ATCC® 49766	0.008-0.03		
		FDA ⁴							<i>Aeromonas</i> spp.	0.5	1	<i>S. pneumoniae</i>	ATCC® 49619	0.5-2		
		<i>S. aureus</i> (methicillin- susceptible)	2	4	8	16			<i>Vibrio</i> spp.	0.25	0.25	<i>S. pneumoniae</i>	ATCC® 49619	0.5-2		
									<i>Bacillus</i> spp. except <i>B. anthracis</i> PK/PD (Non-species related) breakpoints	0.001	1	<i>H. influenzae</i>	ATCC® 49766	0.008-0.03		
										0.5	1	<i>H. influenzae</i>	ATCC® 49766	0.008-0.03		
		LINEZOLID 0.016 - 256 µg/mL	LNZ	All staphylococci	4	-	8	16			<i>Staphylococcus</i> spp.	4	4	<i>S. aureus</i>	ATCC® 29213	1-4
				<i>Enterococcus</i> spp.	2	4	8	16			<i>Enterococcus</i> spp.	4	4	<i>E. faecalis</i>	ATCC® 29212	1-4
<i>S. pneumoniae</i>	2			-	-	-			Streptococcus groups A, B, C and G	2	2	<i>S. pneumoniae</i>	ATCC® 49619	0.25-2		
Streptococcus spp. β-Hemolytic Group	2			-	-	-			<i>S. pneumoniae</i>	2	2	<i>S. aureus</i>	ATCC® 25923	1-4		
Streptococcus spp. Viridans Group	2			-	-	-			<i>C. acnes</i>	2	2	<i>B. fragilis</i>	ATCC® 25285	2-8		
									<i>Corynebacterium</i> spp. (other than <i>C. diphtheriae</i> and <i>C. ulcerans</i>)	2	2	<i>B. thetaiotaomicron</i>	ATCC® 29741	2-8		
									<i>C. diphtheriae</i> and <i>C. ulcerans</i>	2	2	<i>E. lenta</i>	ATCC® 43055	0.5-2		
									<i>Bacillus</i> spp. except <i>B. anthracis</i> PK/PD (Non-species related) breakpoints	2	2					
								2	2							
								2	2							
MECILLINAM 0.016 - 256 µg/mL	MEC	<i>Enterobacterales</i>	8		16	32			<i>E. coli</i> , <i>Citrobacter</i> spp., <i>Klebsiella</i> spp., <i>Raoultella</i> spp., <i>Enterobacter</i> spp. and <i>P. mirabilis</i>	8	8	<i>E. coli</i>	ATCC® 25922	0.03-0.25		

Antibiotic	CODE	CLSI				EUCAST				QUALITY CONTROL		
		CLSI INTERPRETATIVE CRITERIA ¹	S≤	SDD MIC µg/mL	I	R≥	EUCAST INTERPRETATIVE CRITERIA ²	S≤	R>	MIC µg/mL		
MEROPEM 0.002 - 32 µg/mL 0.016 - 256 µg/mL	MRP	<i>Enterobacterales</i>	1		2	4	<i>Enterobacterales</i> (other than meningitis)	2	8	<i>S. aureus</i>	ATCC® 29213	0.03-0.12
		<i>P. aeruginosa</i>	2		4	8	<i>Enterobacterales</i> (meningitis)	2	2	<i>E. faecalis</i>	ATCC® 29212	2-8
		<i>Acinetobacter</i> spp.	2		4	8	<i>P. aeruginosa</i> (other than meningitis)	2	8	<i>E. coli</i>	ATCC® 25922	0.008-0.06
		<i>B. cepacia</i>	4		8	16	<i>Pseudomonas</i> other than <i>P. aeruginosa</i> (other than meningitis)	2	8	<i>P. aeruginosa</i>	ATCC® 27853	0.12-1
		Other Non-Enterobacterales	4		8	16	<i>P. aeruginosa</i> (meningitis)	2	2	<i>E. coli</i>	ATCC® 35218	0.008-0.06
		<i>Staphylococcus</i> spp.	4		8	16	<i>Acinetobacter</i> spp. (other than meningitis)	2	8	<i>E. coli</i>	NCTC 13353	0.016-0.06
		<i>Haemophilus</i> spp.	0.5		-	-	<i>Acinetobacter</i> spp. (meningitis)	2	2	<i>K. pneumoniae</i>	ATCC® BAA-1705	8-64
		<i>S. pneumoniae</i>	0.25		0.5	1	<i>Acinetobacter</i> spp. (meningitis)	2	8	<i>K. pneumoniae</i>	ATCC® BAA-2814	32-256
		<i>Streptococcus</i> spp. β-Hemolytic Group	0.5		-	-	<i>S. pneumoniae</i> (indications other than meningitis)	2	2	<i>A. baumannii</i>	NCTC 13304	32-128
		<i>Streptococcus</i> spp. Viridans Group	0.5		-	-	<i>S. pneumoniae</i> (meningitis)	2	2	<i>H. influenzae</i>	ATCC® 49766	0.03-0.12
		<i>N. meningitidis</i>	0.25		-	-	<i>S. pneumoniae</i> (indications other than meningitis)	2	2	<i>S. pneumoniae</i>	ATCC® 49619	0.03-0.25
		Anaerobes	4		8	16	<i>S. pneumoniae</i> (meningitis)	0.25	0.25	<i>B. fragilis</i>	ATCC® 25285	0.03-0.25
							Viridans group streptococci	2	2	<i>B. fragilis</i> (FAA-HB)	ATCC® 25285	0.03-0.25
							<i>H. influenzae</i> (indications other than meningitis)	2	2	<i>B. thetaiotaomicron</i>	ATCC® 29741	0.06-0.5
							<i>H. influenzae</i> (meningitis)	0.25	0.25	<i>E. lenta</i>	ATCC® 43055	0.125-1
							<i>M. catarrhalis</i>	2	2			
							<i>N. meningitidis</i> (all indications)	0.25	0.25			
							<i>Bacteroides</i> spp.	1	1			
							<i>Prevotella</i> spp.	0.25	0.25			
							<i>F. necrophorum</i>	0.03	0.03			
							<i>C. perfringens</i>	0.12	0.12			
							<i>C. acnes</i>	0.12	0.12			
							<i>L. monocytogenes</i> (all indications)	0.25	0.25			
							<i>C. diphtheriae</i> and <i>C. ulcerans</i>	0.25	0.25			
							<i>Aerococcus sanguinicola</i> and <i>urinae</i>	0.25	0.25			
							<i>K. kingae</i>	0.03	0.03			
							<i>Vibrio</i> spp.	0.5	0.5			
							<i>B. pseudomallei</i>	2	2			
							<i>A. xylooxidans</i>	1	4			
							<i>Bacillus</i> spp. except <i>B. anthracis</i>	0.25	0.25			
							PK/PD (Non-species related) breakpoints	2	8			
MEROPEM-VABORBACTAM 0.016/8 - 256/8 µg/mL	MV	<i>Enterobacterales</i>	4		8	16	<i>Enterobacterales</i> PK/PD (Non-species related) breakpoints	8	8	<i>S. aureus</i>	ATCC® 29213	0.03-0.12
								8	8	<i>E. coli</i>	ATCC® 25922	0.008-0.06
										<i>P. aeruginosa</i>	ATCC® 27853	0.12-1
										<i>E. coli</i>	ATCC® 35218	0.008-0.06
										<i>K. pneumoniae</i>	ATCC® 700603	0.016-0.06
										<i>K. pneumoniae</i>	ATCC® BAA-1705	0.008-0.06
										<i>K. pneumoniae</i>	ATCC® BAA-2814	0.12-0.5
METRONIDAZOLE 0.016 - 256 µg/mL	MTZ	Anaerobes	8		16	32	<i>Bacteroides</i> spp.	4	4	<i>B. fragilis</i>	ATCC® 25285	0.25-2
							<i>Prevotella</i> spp.	4	4	<i>B. fragilis</i> (FAA-HB)	ATCC® 25285	0.25-1
							<i>F. necrophorum</i>	0.5	0.5	<i>B. thetaiotaomicron</i>	ATCC® 29741	0.5-4
							<i>C. perfringens</i>	4	4	<i>E. lenta</i>	ATCC® 43055	0.125-0.5
							<i>C. difficile</i>	2	2			
							<i>H. pylori</i>	8	8			
MINOCYCLINE 0.016 - 256 µg/mL	MN	<i>Enterobacterales</i>	4		8	16	<i>Staphylococcus</i> spp.	0.5	0.5	<i>S. aureus</i>	ATCC® 29213	0.06-0.5
		<i>Acinetobacter</i> spp.	4		8	16	<i>Streptococcus</i> groups A, B, C and G	0.5	0.5	<i>E. faecalis</i>	ATCC® 29212	1-4
		<i>B. cepacia</i>	4		8	16	<i>S. pneumoniae</i>	0.5	0.5	<i>E. coli</i>	ATCC® 25922	0.25-1
		<i>S. maltophilia</i>	4		8	16	<i>H. influenzae</i>	1	1	<i>H. influenzae</i>	ATCC® 49766	0.125-0.5
		Other Non-Enterobacterales	4		8	16	<i>M. catarrhalis</i>	1	1			
		All staphylococci	4		8	16	<i>N. gonorrhoeae</i>	0.5	1			
		<i>Enterococcus</i> spp.	4		8	16	<i>N. meningitidis</i> (prophylaxis only)	1	1			
		<i>N. meningitidis</i>	2		-	-						

Antibiotic	CODE	CLSI INTERPRETATIVE CRITERIA ¹				EUCAST INTERPRETATIVE CRITERIA ²			QUALITY CONTROL		MIC µg/mL
		S≤	SDD MIC µg/mL	I	R≥	S≤	SDD MIC µg/mL	R>			
MOXIFLOXACIN 0.002 - 32 µg/mL	MXF	All staphylococci	0.5	1	2	Enterobacterales	0.25	0.25	<i>S. aureus</i>	ATCC® 29213	0.016-0.12
		<i>Haemophilus</i> spp.	1	-	-	<i>Staphylococcus</i> spp.	0.25	0.25	<i>E. faecalis</i>	ATCC® 29212	0.06-0.5
		<i>S. pneumoniae</i>	1	2	4	<i>Streptococcus</i> groups A, B, C and G	0.5	0.5	<i>E. coli</i>	ATCC® 25922	0.008-0.06
		Anaerobes	2	4	8	<i>S. pneumoniae</i>	0.5	0.5	<i>P. aeruginosa</i>	ATCC® 27853	1-8
		EDA ⁴				<i>H. influenzae</i>	0.125	0.125	<i>H. influenzae</i>	ATCC® 49247	0.008-0.03
		Enterobacterales	2	4	8	<i>M. catarrhalis</i>	0.25	0.25	<i>S. pneumoniae</i>	ATCC® 49619	0.06-0.25
		<i>E. faecalis</i>	1	2	4	<i>Corynebacterium</i> spp. (other than <i>C. diphtheriae</i> and <i>C. ulcerans</i>)	0.5	0.5	<i>N. gonorrhoeae</i>	ATCC® 49226	0.008-0.03
						PK/PD (Non-species related) breakpoints	0.25	0.25	<i>B. fragilis</i>	ATCC® 25285	0.12-0.5
									<i>B. thetaiotaomicron</i>	ATCC® 29741	1-8
									<i>E. lenta</i>	ATCC® 43055	0.12-0.5
							<i>H. influenzae</i>	ATCC® 49766	0.008-0.03		
MUPIROCI 0.064 - 1024 µg/mL	MUP	<i>S. aureus</i> (test for detection of HLMR)	256	-	256	<i>Staphylococcus</i> spp.	1	256	<i>S. aureus</i> (mupA negative)	ATCC® 29213	0.06-0.25
									<i>E. faecalis</i> (mupA negative)	ATCC® 29212	16-128
									<i>S. aureus</i> (mupA positive)	ATCC® BAA 1708	> 256
NALIDIXIC ACID 0.016 - 256 µg/mL	NA	Enterobacterales except <i>Salmonella</i> spp.	16	-	32	Not available			<i>E. coli</i>	ATCC® 25922	1-4
NETILMICIN 0.016 - 256 µg/mL	NET	Enterobacterales	8	16	32	Not available			<i>S. aureus</i>	ATCC® 29213	≤ 0.25
		<i>P. aeruginosa</i>	8	16	32				<i>E. faecalis</i>	ATCC® 29212	4-16
		<i>Acinetobacter</i> spp.	8	16	32				<i>E. coli</i>	ATCC® 25922	≤ 0.5-1
		Other Non-Enterobacterales	8	16	32				<i>P. aeruginosa</i>	ATCC® 27853	0.5-8
		<i>Staphylococcus</i> spp.	8	16	32						
NITROFURANTOIN 0.032 - 512 µg/mL	F	Enterobacterales	32	64	128	Enterobacterales	64	64	<i>S. aureus</i>	ATCC® 29213	8-32
		All staphylococci	32	64	128	<i>Staphylococcus</i> spp.	64	64	<i>E. faecalis</i>	ATCC® 29212	4-16
		Enterococcus spp.	32	64	128	Enterococcus spp.	64	64	<i>E. coli</i>	ATCC® 25922	4-16
						<i>Streptococcus</i> groups A, B, C and G	64	64	<i>S. pneumoniae</i>	ATCC® 49619	4-16
				<i>Aerococcus sanguinicola</i> and <i>urinae</i>	16	16					
NORFLOXACIN 0.016 - 256 µg/mL	NOR	For urinary tract isolates only:				Enterobacterales	0.5	0.5	<i>S. aureus</i>	ATCC® 29213	0.5-2
		Enterobacterales	4	8	16				<i>E. faecalis</i>	ATCC® 29212	2-8
		<i>P. aeruginosa</i>	4	8	16				<i>E. coli</i>	ATCC® 25922	0.03-0.12
		Other Non-Enterobacterales	4	8	16				<i>P. aeruginosa</i>	ATCC® 27853	1-4
		All staphylococci	4	8	16				<i>S. pneumoniae</i>	ATCC® 49619	2-8
		Enterococcus spp.	4	8	16						
OFLOXACIN 0.002 - 32 µg/mL	OFX	Enterobacterales except <i>Salmonella</i> spp.	2	4	8	Enterobacterales	0.25	0.5	<i>S. aureus</i>	ATCC® 29213	0.12-1
		<i>Salmonella</i> spp.				<i>S. aureus</i>	0.001	1	<i>E. faecalis</i>	ATCC® 29212	1-4
		<i>Salmonella</i> spp.	0.12	0.25-1	2	Coagulase negative staphylococci	0.001	1	<i>E. coli</i>	ATCC® 25922	0.016-0.12
		<i>P. aeruginosa</i>	2	4	8	<i>S. pneumoniae</i>	0.12	4	<i>P. aeruginosa</i>	ATCC® 27853	1-8
		Other Non-Enterobacterales	2	4	8	<i>H. influenzae</i>	0.06	0.06	<i>H. influenzae</i>	ATCC® 49247	0.016-0.06
		All staphylococci	1	2	4	<i>M. catarrhalis</i>	0.25	0.25	<i>S. pneumoniae</i>	ATCC® 49619	1-4
		<i>Haemophilus</i> spp.	2	-	-	<i>N. gonorrhoeae</i>	0.12	0.25	<i>N. gonorrhoeae</i>	ATCC® 49226	0.004-0.016
		<i>S. pneumoniae</i>	2	4	8	PK/PD (Non-species related) breakpoints	0.25	0.5	<i>H. influenzae</i>	ATCC® 49766	0.016-0.06
		<i>Streptococcus</i> spp. β-Hemolytic Group	2	4	8						
		<i>Streptococcus</i> spp. Viridans Group	2	4	8						
		EDA ⁴									
		<i>S. aureus</i> (methicillin susceptible)	2	4	8						
		<i>N. gonorrhoeae</i>	0.25	0.5-1	2						

Antibiotic	CODE	CLSI INTERPRETATIVE CRITERIA ¹				EUCAST INTERPRETATIVE CRITERIA ²			QUALITY CONTROL		
		S≤	SDD MIC µg/mL	I	R≥	S≤	MIC µg/mL	R>			MIC µg/mL
OMADACYCLINE 0.002 - 32 µg/mL	OMC	FDA ⁴ For ABSSSI Enterobacteriaceae 4 8 16 <i>S. aureus</i> including MRSA 0.5 1 2 <i>S. lugdunensis</i> 0.12 0.25 0.5 <i>E. faecalis</i> 0.25 0.5 1 <i>S. anginosus</i> group 0.12 0.25 0.5 <i>S. pyogenes</i> 0.12 0.25 0.5 For CABP Enterobacteriaceae 4 8 16 <i>S. aureus</i> including MRSA 0.25 0.5 1 <i>Haemophilus</i> spp. 2 4 8 <i>S. pneumoniae</i> 0.12 0.25 0.5				Not available			<i>E. coli</i> ATCC® 25922 0.25-2 <i>S. aureus</i> ATCC® 29213 0.12-1 <i>E. faecalis</i> ATCC® 29212 0.06-0.5 <i>H. influenzae</i> ATCC® 49247 0.5-2 <i>S. pneumoniae</i> ATCC® 49619 0.016-0.12 <i>B. fragilis</i> ATCC® 25285 0.12-1 <i>B. thetaiotaomicron</i> ATCC® 29741 0.25-1 <i>C. difficile</i> ATCC® 700057 0.06-0.25 <i>E. lenta</i> ATCC® 43055 0.06-0.5		
OXACILLIN 0.016 - 256 µg/mL	OX	<i>S. aureus, S. lugdunensis,</i> 2 - 4 <i>S. epidermidis</i> 0.5 - 1 <i>S. pseudintermedius</i> and <i>S. schleiferi</i> 0.5 - 1 <i>Staphylococcus</i> spp. except <i>S. aureus, S. lugdunensis, S. epidermidis, S. pseudintermedius, S. schleiferi</i> 0.5 1				<i>S. aureus</i> and <i>S. lugdunensis</i> 2 2 Coagulase-negative staphylococci (Methicillin/Oxacillin Resistant Staphylococci) 0.25 0.25			<i>S. aureus</i> ATCC® 29213 0.12-0.5 <i>E. faecalis</i> ATCC® 29212 8-32		
PENICILLIN G 0.002 - 32 µg/mL 0.016 - 256 µg/mL	P	All staphylococci 0.12 - 0.25 <i>Enterococcus</i> spp. 8 - 16 <i>N. gonorrhoeae</i> 0.06 0.12-1 2 <i>S. pneumoniae</i> parenteral (nonmeningitis) 2 4 8 <i>S. pneumoniae</i> parenteral (meningitis) 0.06 - 0.12 <i>S. pneumoniae</i> oral 0.06 0.12-1 2 <i>Streptococcus</i> spp. β-Hemolytic Group 0.12 - - <i>Streptococcus</i> spp. Viridans Group 0.12 0.25-2 4 <i>N. meningitidis</i> 0.06 0.12-0.25 0.5 Anaerobes 0.5 1 2				<i>S. aureus</i> 0.12 0.12 <i>S. lugdunensis</i> 0.12 0.12 <i>Streptococcus</i> groups A, B, C and G (other than meningitis) 0.25 0.25 <i>S. agalactiae</i> group B streptococci (meningitis) 0.12 0.12 <i>S. pneumoniae</i> (infections other than meningitis) 0.06 2 <i>S. pneumoniae</i> (meningitis) 0.06 0.06 Viridans group streptococci 0.25 2 <i>N. gonorrhoeae</i> 0.06 1 <i>N. meningitidis</i> (all indications) 0.25 0.25 <i>F. necrophorum</i> 0.5 0.5 <i>C. perfringens</i> 0.5 0.5 <i>C. acnes</i> 0.06 0.06 <i>Corynebacterium</i> spp. (other than <i>C. diphtheriae</i> and <i>C. ulcerans</i>) 0.12 0.12 <i>C. diphtheriae</i> and <i>C. ulcerans</i> 0.001 1 <i>Aerococcus sanguinicola</i> and <i>urinae</i> 0.12 0.12 <i>K. kingae</i> 0.03 0.03 <i>L. monocytogenes</i> (other than meningitis) 1 1 <i>P. multocida</i> 0.5 0.5 PK/PD (Non-species related) breakpoints 0.25 2			<i>S. aureus</i> ATCC® 29213 0.25-2 <i>E. faecalis</i> ATCC® 29212 1-4 <i>S. pneumoniae</i> ATCC® 49619 0.25-1 <i>N. gonorrhoeae</i> ATCC® 49226 0.25-1 <i>B. fragilis</i> ATCC® 25285 8-32 <i>B. thetaiotaomicron</i> ATCC® 29741 8-32		
PIPERACILLIN 0.016 - 256 µg/mL	PIP	Enterobacterales 8 16 - 32 <i>P. aeruginosa</i> 16 32 64 <i>Acinetobacter</i> spp. 16 32-64 128 Other Non-Enterobacterales 16 32-64 128 Anaerobes 32 64 128				Enterobacterales 8 8 <i>Pseudomonas</i> spp. 0.001 16 PK/PD (Non-species related) breakpoints 8 16			<i>S. aureus</i> ATCC® 29213 1-4 <i>E. faecalis</i> ATCC® 29212 1-4 <i>E. coli</i> ATCC® 25922 1-4 <i>P. aeruginosa</i> ATCC® 27853 1-8 <i>E. coli</i> ATCC® 35218 > 64 <i>B. fragilis</i> ATCC® 25285 4-16 <i>B. thetaiotaomicron</i> ATCC® 29741 8-64 <i>E. lenta</i> ATCC® 43055 8-32		

Antibiotic	CODE	CLSI INTERPRETATIVE CRITERIA ¹	S≤	SDD MIC µg/mL	I	R≥	EUCAST			QUALITY CONTROL				
							INTERPRETATIVE CRITERIA ²			S≤	R>	MIC µg/mL		
PIPERACILLIN-TAZOBACTAM 0.016/4 - 256/4 µg/mL	TZP	<i>Enterobacterales</i>	8	16	-	32	<i>Enterobacterales</i>	8	8	<i>E. coli</i>	ATCC® 25922	1-8		
		<i>P. aeruginosa</i>	16		32	64		<i>Pseudomonas</i> spp.	0.001	16	<i>P. aeruginosa</i>	ATCC® 27853	1-8	
		<i>Acinetobacter</i> spp. FDA ⁴	16		32-64	128				<i>E. coli</i>	ATCC® 35218	0.5-2		
		<i>Enterobacterales</i>	8		16	32				<i>K. pneumoniae</i>	ATCC® 700603	8-32		
		<i>P. aeruginosa</i>	16		32-64	128								
PIPERACILLIN-TAZOBACTAM 0.064/4 - 1024/4 µg/mL	TZP	<i>Haemophilus</i> spp.	1		-	2	<i>H. influenzae</i>	0.25	0.25	<i>H. influenzae</i>	ATCC® 49247	0.06-0.5		
		Anaerobes	16		32-64	128	<i>Bacteroides</i> spp.	2	2	<i>B. fragilis</i>	ATCC® 25285	0.12-0.5		
							<i>Prevotella</i> spp.	0.5	0.5	<i>B. fragilis</i> (FAA-HB)	ATCC® 25285	0.125-0.5		
							<i>F. necrophorum</i>	0.5	0.5	<i>B. thetaiotaomicron</i>	ATCC® 29741	4-16		
							<i>C. perfringens</i>	0.5	0.5	<i>E. lenta</i>	ATCC® 43055	4-16		
							<i>C. acnes</i>	0.25	0.25					
							PK/PD (Non-species related) breakpoints	8	16					
		PLAZOMICIN 0.016 - 256 µg/mL	PLZ	<i>Enterobacterales</i>	2		4	8	Not available			<i>S. aureus</i>	ATCC® 29213	0.25-2
				FDA ⁴						<i>E. coli</i>	ATCC® 25922	0.25-2		
				Enterobacteriaceae	2		4	8		<i>P. aeruginosa</i>	ATCC® 27853	1-4		
POLYMYXIN B 0.064 - 1024 µg/mL	PB	<i>Enterobacterales</i>	-		2	4	Not available			<i>E. coli</i>	ATCC® 25922	0.25-2		
		<i>P. aeruginosa</i>	-		2	4		<i>P. aeruginosa</i>	ATCC® 27853	0.5-2				
		<i>Acinetobacter</i> spp.	-		2	4								
QUINUPRISTIN-DALFOPRISTIN 0.002 - 32 µg/mL	QDA	<i>S. aureus</i>	1		2	4	<i>Staphylococcus</i> spp. <i>E. faecium</i>	1	1	<i>S. aureus</i>	ATCC® 29213	0.25-1		
		<i>Enterococcus</i> spp.	1		2	4		1	1	<i>E. faecalis</i>	ATCC® 29212	2-8		
		<i>S. pneumoniae</i>	1		2	4				<i>H. influenzae</i>	ATCC® 49247	2-8		
		<i>Streptococcus</i> spp. β-Hemolytic Group	1		2	4				<i>S. pneumoniae</i>	ATCC® 49619	0.25-1		
		<i>Streptococcus</i> spp. Viridans Group	1		2	4								
RIFAMPICIN 0.002 - 32 µg/mL 0.016 - 256 µg/mL	RD	All staphylococci	1		2	4	<i>S. aureus</i> Coagulase-negative staphylococci <i>Streptococcus</i> groups A, B, C and G <i>S. pneumoniae</i> <i>H. influenzae</i> <i>N. meningitidis</i> (prophylaxis only) <i>H. pylori</i> <i>Corynebacterium</i> spp. (other than <i>C. diphtheriae</i> and <i>C. ulcerans</i>) <i>C. diphtheriae</i> and <i>C. ulcerans</i> <i>Aerococcus sanguinicola</i> and <i>urinae</i> <i>K. kingae</i>	0.06	0.06	<i>S. aureus</i>	ATCC® 29213	0.004-0.016		
		<i>Enterococcus</i> spp.	1		2	4		0.06	0.06	<i>E. faecalis</i>	ATCC® 29212	0.5-4		
		<i>Haemophilus</i> spp.	1		2	4		0.06	0.06	<i>E. coli</i>	ATCC® 25922	4-16		
		<i>S. pneumoniae</i>	1		2	4		0.125	0.125	<i>P. aeruginosa</i>	ATCC® 27853	16-64		
		<i>N. meningitidis</i>	0.5		1	2		1	1	<i>H. influenzae</i>	ATCC® 49247	0.25-1		
								0.25	0.25	<i>S. pneumoniae</i>	ATCC® 49619	0.016-0.06		
								1	1	<i>H. influenzae</i>	ATCC® 49766	0.25-1		
								0.06	0.06					
								0.06	0.06					
								0.12	0.12					
								0.5	0.5					
		SOLITHROMYCIN 0.002 - 32 µg/mL	SOL	Not available						Not available			<i>S. aureus</i>	ATCC® 29213
							<i>E. faecalis</i>	ATCC® 29212	0.016-0.06					
							<i>H. influenzae</i>	ATCC® 49247	1-4					
							<i>S. pneumoniae</i>	ATCC® 49619	0.004-0.016					
							<i>N. gonorrhoeae</i>	ATCC® 49226	0.03-0.25					
SPECTINOMYCIN 0.064 - 1024 µg/mL	SPC	<i>N. gonorrhoeae</i>	32		64	128	<i>N. gonorrhoeae</i>	64	64	<i>N. gonorrhoeae</i>	ATCC® 49226	8-32		
STREPTOMYCIN 0.016 - 256 µg/mL 0.064 - 1024 µg/mL	S	<i>Enterococcus</i> spp. (test for detection of HLAR)	500		-	1000	<i>Enterococcus</i> spp. (test for high-level streptomycin resistance)	512	512	HLAR				
								<i>E. faecalis</i>	ATCC® 29212	< 500				
									<i>E. faecalis</i>	ATCC® 51299	≥ 1000			
SULBACTAM 0.016 - 256 µg/mL	SUL	Not available					Not available			<i>E. coli</i>	ATCC® 25922	16-64		
								<i>K. pneumoniae</i>	ATCC® 700603	32-128				
								<i>A. baumannii</i>	NCTC 13304	16-64				

Antibiotic	CODE	CLSI INTERPRETATIVE CRITERIA ¹				EUCAST INTERPRETATIVE CRITERIA ²				QUALITY CONTROL		
		S≤	SDD MIC µg/mL	I	R≥	S≤	SDD MIC µg/mL	R≥	MIC µg/mL	ATCC®	MIC µg/mL	
TEDIZOLID 0.002 - 32 µg/mL	TZD	<i>S. aureus</i> only including MRSA	0.5	1	2	<i>Staphylococcus</i> spp.	0.5	0.5	<i>S. aureus</i>	ATCC® 29213	0.12-1	
		<i>E. faecalis</i>	0.5	-	-	<i>Streptococcus</i> groups A, B, C and G	0.5	0.5	<i>E. faecalis</i>	ATCC® 29212	0.25-1	
		<i>S. pyogenes</i> and <i>S. agalactiae</i>	0.5	-	-	<i>S. anginosus</i> group	0.5	0.5	<i>S. aureus</i>	ATCC® 25923	0.12-0.5	
		<i>S. anginosus</i> Group	0.25	-	-				<i>S. pneumoniae</i>	ATCC® 49619	0.12-0.5	
TEICOPLANIN 0.016 - 256 µg/mL	TEC	All staphylococci	8	16	32	<i>S. aureus</i>	2	2	<i>S. aureus</i>	ATCC® 29213	0.25-1	
		<i>Enterococcus</i> spp.	8	16	32	Coagulase-negative staphylococci	4	4	<i>E. faecalis</i>	ATCC® 29212	0.25-1	
						<i>Enterococcus</i> spp.	2	2				
						<i>Streptococcus</i> groups A, B, C and G	2	2				
						<i>S. pneumoniae</i>	2	2				
						Viridans group streptococci	2	2				
TELAVANCIN 0.002 - 32 µg/mL 0.016 - 256 µg/mL	TLV	<i>S. aureus</i> only including MRSA	0.12	-	-	Methicillin-resistant <i>S. aureus</i>	0.125	0.125	<i>S. aureus</i>	ATCC® 29213	0.03-0.12	
		Vancomycin-susceptible <i>E. faecalis</i>	0.25	-	-				<i>E. faecalis</i>	ATCC® 29212	0.03-0.12	
		<i>Streptococcus</i> spp. β-Hemolytic Group	0.12	-	-				<i>S. pneumoniae</i>	ATCC® 49619	0.004-0.016	
		<i>Streptococcus</i> spp. Viridans Group	0.06	-	-							
TEMOCILLIN 0.064 - 1024 µg/mL	TMO	Not available				<i>Enterobacteriales</i> [<i>E. coli</i> , <i>Klebsiella</i> spp. (except <i>K. aerogenes</i>), <i>P. mirabilis</i> only] PK/PD (Non-species related) breakpoints	0.001	16	<i>E. coli</i>	ATCC® 25922	8-32	
												8
TETRACYCLINE 0.016 - 256 µg/mL	TE	<i>Enterobacteriales</i>	4	8	16	<i>Staphylococcus</i> spp.	1	1	<i>S. aureus</i>	ATCC® 29213	0.12-1	
		<i>Acinetobacter</i> spp.	4	8	16	<i>Streptococcus</i> groups A, B, C and G	1	1	<i>E. faecalis</i>	ATCC® 29212	8-32	
		Other Non-Enterobacteriales	4	8	16	<i>S. pneumoniae</i>	1	1	<i>E. coli</i>	ATCC® 25922	0.5-2	
		All staphylococci	4	8	16	<i>H. influenzae</i>	2	2	<i>P. aeruginosa</i>	ATCC® 27853	8-32	
		<i>Enterococcus</i> spp.	4	8	16	<i>M. catarrhalis</i>	2	2	<i>H. influenzae</i>	ATCC® 49247	4-32	
		<i>Haemophilus</i> spp.	2	4	8	<i>N. gonorrhoeae</i>	0.5	0.5	<i>S. pneumoniae</i>	ATCC® 49619	0.06-0.5	
		<i>N. gonorrhoeae</i>	0.25	0.5-1	2	<i>N. meningitidis</i> (screen only)	2	2	<i>N. gonorrhoeae</i>	ATCC® 49226	0.25-1	
		<i>S. pneumoniae</i>	1	2	4	<i>H. pylori</i>	1	1	<i>B. fragilis</i>	ATCC® 25285	0.125-0.5	
		<i>Streptococcus</i> spp. β-Hemolytic Group	2	4	8	<i>C. jejuni</i> and <i>coli</i>	2	2	<i>B. thetaiotaomicron</i>	ATCC® 29741	8-32	
		<i>Streptococcus</i> spp. Viridans Group	2	4	8	<i>Corynebacterium</i> spp. (other than <i>C. diphtheriae</i> and <i>C. ulcerans</i>)	2	2	<i>H. influenzae</i>	ATCC® 49766	0.25-1	
		Anaerobes	4	8	16	<i>C. diphtheriae</i> and <i>C. ulcerans</i>	1	1				
						<i>K. kingae</i>	0.5	0.5				
TICARCILLIN 0.016 - 256 µg/mL	TC	Not available				Not available				<i>S. aureus</i>	ATCC® 29213	2-8
									<i>E. faecalis</i>	ATCC® 29212	16-64	
									<i>E. coli</i>	ATCC® 25922	4-16	
									<i>P. aeruginosa</i>	ATCC® 27853	8-32	
									<i>E. coli</i>	ATCC® 35218	> 128	
									<i>K. pneumoniae</i>	ATCC® 700603	> 256	
TICARCILLIN-CLAVULANIC ACID 0.016/2 - 256/2 µg/mL	TTC	<i>Enterobacteriales</i>	16	32-64	128	<i>Enterobacteriales</i>	8	16	<i>S. aureus</i>	ATCC® 29213	0.5-2	
		<i>P. aeruginosa</i>	16	32-64	128	<i>Pseudomonas</i> spp.	0.001	16	<i>E. faecalis</i>	ATCC® 29212	16-64	
		<i>Acinetobacter</i> spp.	16	32-64	128	PK/PD (Non-species related) breakpoints	8	16	<i>E. coli</i>	ATCC® 25922	4-16	
		<i>B. cepacia</i>	16	32-64	128				<i>P. aeruginosa</i>	ATCC® 27853	8-32	
		<i>S. maltophilia</i>	16	32-64	128				<i>E. coli</i>	ATCC® 35218	8-32	
		Other Non-Enterobacteriales	16	32-64	128				<i>K. pneumoniae</i>	ATCC® 700603	32-128	
		Anaerobes	32	64	128				<i>B. fragilis</i>	ATCC® 25285	0.06-0.5	
									<i>B. thetaiotaomicron</i>	ATCC® 29741	0.5-2	
									<i>E. lenta</i>	ATCC® 43055	8-32	

Antibiotic	CODE	CLSI INTERPRETATIVE CRITERIA ¹	S≤	SDD MIC µg/mL	I	R≥	EUCAST			QUALITY CONTROL			
							INTERPRETATIVE CRITERIA ²			S≤	R>	MIC µg/mL	
TIGECYCLINE 0.016 - 256 µg/mL	TGC	FDA ⁴					<i>E. coli</i> , <i>C. koseri</i>	0.5	0.5	<i>S. aureus</i>	ATCC® 29213	0.03-0.25	
		<i>S. aureus</i> (including methicillin-resistant isolates)	0.5	-	-	<i>Staphylococcus</i> spp.	0.5	0.5	<i>E. faecalis</i>	ATCC® 29212	0.03-0.12		
		<i>Streptococcus</i> spp other than <i>S. pneumoniae</i>	0.25	-	-	<i>E. faecalis</i>	0.25	0.25	<i>E. coli</i>	ATCC® 25922	0.03-0.25		
		<i>S. pneumoniae</i>	0.06	-	-	<i>E. faecium</i>	0.25	0.25	<i>H. influenzae</i>	ATCC® 49247	0.06-0.5		
		<i>E. faecalis</i> (vancomycin-susceptible isolates)	0.25	-	-	<i>Streptococcus</i> groups A, B, C and G	0.125	0.125	<i>S. pneumoniae</i>	ATCC® 49619	0.016-0.12		
		<i>Enterobacterales</i>	2	4	8	PK/PD (Non-species related) breakpoints	0.5	0.5	<i>B. fragilis</i>	ATCC® 25285	0.06-0.5		
		<i>H. influenzae</i>	0.25	-	-				<i>B. thetaiotaomicron</i>	ATCC® 29741	0.25-1		
		Anaerobes	4	8	16				<i>C. difficile</i>	ATCC® 700057	0.03-0.12		
		TOBRAMYCIN 0.016 - 256 µg/mL 0.064 - 1024 µg/mL	TOB	<i>Enterobacterales</i>	2	4	8	<i>Enterobacterales</i> (systemic infections)	(2)	(2)	<i>S. aureus</i>	ATCC® 29213	0.12-1
				<i>P. aeruginosa</i>	1	2	4	<i>Enterobacterales</i> (infections originating from the urinary tract)	2	2	<i>E. faecalis</i>	ATCC® 29212	8-32
<i>Acinetobacter</i> spp.	4			8	16	<i>Pseudomonas</i> spp.	2	2	<i>E. coli</i>	ATCC® 25922	0.25-1		
Other Non-Enterobacterales	4			8	16	<i>Acinetobacter</i> spp.	4	4	<i>P. aeruginosa</i>	ATCC® 27853	0.25-1		
FDA ⁴						<i>S. aureus</i>	(2)	(2)					
<i>Enterobacterales</i>	4			8	16	Coagulase-negative staphylococci	(2)	(2)					
<i>P. aeruginosa</i>	4			8	16	PK/PD (Non-species related) breakpoints	0.5	0.5					
<i>S. aureus</i>	4			8	16								
TRIMETHOPRIM 0.002 - 32 µg/mL	TM	<i>Enterobacterales</i>	8	-	16	<i>Enterobacterales</i>	4	4	<i>S. aureus</i>	ATCC® 29213	1-4		
		All staphylococci	8	-	16	<i>Staphylococcus</i> spp.	4	4	<i>E. faecalis</i>	ATCC® 29212	0.12-0.5		
						<i>Enterococcus</i> spp.	0.03	1	<i>E. coli</i>	ATCC® 25922	0.5-2		
						<i>Streptococcus</i> groups A, B, C and G	2	2	<i>P. aeruginosa</i>	ATCC® 27853	> 64		
TRIMETHOPRIM*- SULFAMETHOXAZOLE (1/19) 0.002 - 32* µg/mL	SXT	<i>Enterobacterales</i>	2	-	4	<i>Enterobacterales</i>	2	4	<i>S. aureus</i>	ATCC® 29213	≤ 0.5		
		<i>Acinetobacter</i> spp.	2	-	4	<i>S. maltophilia</i>	0.001	4	<i>E. faecalis</i>	ATCC® 29212	≤ 0.5		
		<i>B. cepacia</i>	2	-	4	<i>Acinetobacter</i> spp.	2	4	<i>E. coli</i>	ATCC® 25922	≤ 0.5		
		<i>S. maltophilia</i>	2	-	4	<i>Staphylococcus</i> spp.	2	4	<i>P. aeruginosa</i>	ATCC® 27853	8-32		
		Other Non-Enterobacterales	2	-	4	<i>Enterococcus</i> spp.	0.03	1	<i>H. influenzae</i>	ATCC® 49247	0.03-0.25		
		All staphylococci	2	-	4	<i>Streptococcus</i> groups A, B, C and G	1	2	<i>S. pneumoniae</i>	ATCC® 49619	0.12-1		
		<i>Haemophilus</i> spp.	0.5	1-2	4	<i>S. pneumoniae</i>	1	2	<i>H. influenzae</i>	ATCC® 49766	0.016-0.06		
		<i>S. pneumoniae</i>	0.5	1-2	4	<i>H. influenzae</i>	0.5	1					
		<i>N. meningitidis</i>	0.12	0.25	0.5	<i>M. catarrhalis</i>	0.5	1					
						<i>L. monocytogenes</i> (all indications)	0.06	0.06					
						<i>P. multocida</i>	0.25	0.25					
						<i>C. diphtheriae</i> and <i>C. ulcerans</i>	0.5	0.5					
						<i>K. kingae</i>	0.25	0.25					
						<i>Aeromonas</i> spp.	2	4					
						<i>A. xylosoxidans</i>	0.12	0.12					
						<i>Vibrio</i> spp.	0.25	0.25					
				<i>B. pseudomallei</i>	0.001	4							
VANCOMYCIN 0.016 - 256 µg/mL	VA	<i>S. aureus</i> , including MRSA	2	4-8	16	<i>S. aureus</i>	2	2	<i>S. aureus</i>	ATCC® 29213	0.5-2		
		<i>Staphylococcus</i> spp. other than <i>S. aureus</i>	4	8-16	32	Coagulase-negative staphylococci	4	4	<i>E. faecalis</i>	ATCC® 29212	1-4		
		<i>Enterococcus</i> spp.	4	8-16	32	<i>Enterococcus</i> spp.	4	4	<i>S. pneumoniae</i>	ATCC® 49619	0.12-0.5		
		<i>S. pneumoniae</i>	1	-	-	<i>Streptococcus</i> groups A, B, C and G	2	2					
		<i>Streptococcus</i> spp. β-Hemolytic Group	1	-	-	<i>S. pneumoniae</i>	2	2					
		<i>Streptococcus</i> spp. Viridans Group	1	-	-	Viridans group streptococci	2	2					
						<i>C. perfringens</i>	2	2					
						<i>C. acnes</i>	2	2					
						<i>C. difficile</i>	2	2					
						<i>Corynebacterium</i> spp. (other than <i>C. diphtheriae</i> and <i>C. ulcerans</i>)	2	2					
						<i>Aerococcus sanguinicola</i> and <i>urinae</i>	1	1					
						<i>Bacillus</i> spp. except <i>B. anthracis</i>	2	2					

* See relevant notes in the EUCAST breakpoint tables

FAA-HB: Fastidious Anaerobe Agar with 5% defibrinated Horse Blood

Notes:

For combination agents, MIC values are expressed as the concentration of the first component of the combination.

For information on how to use breakpoints in brackets, see <https://www.eucast.org/eucastguidancedocuments/>.

References

1. CLSI. Performance Standards for Antimicrobial Susceptibility Testing: 33rd ed. CLSI supplement M100S. Wayne, PA: Clinical and Laboratory Standards Institute; 2023.
2. The European Committee on Antimicrobial Susceptibility Testing. Breakpoint tables for interpretation of MICs and zone diameters. Version 13.1, 2023. http://www.eucast.org/clinical_breakpoints/
3. The European Committee on Antimicrobial Susceptibility Testing. Routine and extended internal quality control for MIC determination and disk diffusion as recommended by EUCAST. Version 13.2, 2023. <http://www.eucast.org>.
4. U.S. Food & Drug Administration. FDA-Identified Interpretive Criteria and/or Exceptions to the Recognized Standard of CLSI M100. <https://www.fda.gov/STIC>.
 - Antibacterial Susceptibility Test Interpretive Criteria - Content current as of: 25 May 2023.

Antifungal	CODE	CLSI INTERPRETATIVE CRITERIA ^{5,6}			EUCAST INTERPRETATIVE CRITERIA ⁷			QUALITY CONTROL			
		S≤	I	R≥	S≤	R>	MIC µg/mL	MIC µg/mL	MIC µg/mL		
AMPHOTERICIN B 0.002 - 32 µg/mL	AMB	Not available			<i>C. albicans</i>	1	1	<i>C. parapsilosis</i>	ATCC® 22019	0.25-1	
					<i>C. dubliniensis</i>	1	1	<i>C. krusei</i>	ATCC® 6258	0.5-2	
					<i>C. glabrata</i>	1	1	<i>C. albicans</i>	ATCC® 90028	0.125-0.5	
					<i>C. krusei</i>	1	1				
					<i>C. parapsilosis</i>	1	1				
					<i>C. tropicalis</i>	1	1				
					<i>C. neoformans</i>	1	1				
					<i>A. fumigatus</i>	1	1				
					<i>A. niger</i>	1	1				
ANIDULAFUNGIN 0.002 - 32 µg/mL	AND	<i>C. albicans</i>	0.25	0.5	1	<i>C. albicans</i>	0.03	0.03	<i>C. parapsilosis</i>	ATCC® 22019	0.5-4
		<i>C. glabrata</i>	0.12	0.25	0.5	<i>C. glabrata</i>	0.06	0.06	<i>C. krusei</i>	ATCC® 6258	0.016-0.125
		<i>C. tropicalis</i>	0.25	0.5	1	<i>C. krusei</i>	0.06	0.06	<i>C. albicans</i>	ATCC® 90028	0.002-0.008
		<i>C. krusei</i>	0.25	0.5	1	<i>C. parapsilosis</i>	4	4			
		<i>C. parapsilosis</i>	2	4	8	<i>C. tropicalis</i>	0.06	0.06			
		<i>C. guilliermondii</i>	2	4	8						
CASPOFUNGIN 0.002 - 32 µg/mL	CAS	<i>C. albicans</i>	0.25	0.5	1	Not available			<i>C. parapsilosis</i>	ATCC® 22019	0.25-2
		<i>C. glabrata</i>	0.12	0.25	0.5				<i>C. krusei</i>	ATCC® 6258	0.25-1
		<i>C. tropicalis</i>	0.25	0.5	1				<i>C. albicans</i>	ATCC® 90028	0.064-0.25
		<i>C. krusei</i>	0.25	0.5	1						
		<i>C. parapsilosis</i>	2	4	8						
		<i>C. guilliermondii</i>	2	4	8						
FLUCONAZOLE 0.016 - 256 µg/mL	FLU	<i>C. albicans</i>	2		8	<i>C. albicans</i>	2	4	<i>C. parapsilosis</i>	ATCC® 22019	1-8
		<i>C. glabrata</i>	-	≤ 32	64	<i>C. dubliniensis</i>	2	4	<i>C. krusei</i>	ATCC® 6258	128-≥256
		<i>C. parapsilosis</i>	2		8	<i>C. glabrata</i>	0.001	16	<i>C. albicans</i>	ATCC® 90028	0.125-0.5
		<i>C. tropicalis</i>	2		8	<i>C. parapsilosis</i>	2	4			
		EDA ⁸				<i>C. tropicalis</i>	2	4			
		<i>C. albicans</i>	2	4	8	Non-species related breakpoints for <i>Candida</i>					
		<i>C. glabrata</i>	-	≤ 32	64						
		<i>C. parapsilosis</i>	2	4	8						
		<i>C. tropicalis</i>	2	4	8						
FLUCYTOSINE 0.002 - 32 µg/mL	FC	Not available			Not available			<i>C. parapsilosis</i>	ATCC® 22019	0.064-0.25	
								<i>C. krusei</i>	ATCC® 6258	≥32	
								<i>C. albicans</i>	ATCC® 90028	0.5-2	
ISAVUCONAZOLE 0.002 - 32 µg/mL	IVU	Not available			<i>A. flavus</i>	1	2	<i>C. parapsilosis</i>	ATCC® 22019	0.008-0.032	
					<i>A. fumigatus</i>	1	2	<i>C. krusei</i>	ATCC® 6258	0.125-1	
					<i>A. nidulans</i>	0.25	0.25	<i>C. albicans</i>	ATCC® 90028	0.008-0.032	
					<i>A. terreus</i>	1	1				
ITRACONAZOLE 0.002 - 32 µg/mL	ITC	EDA ⁸				<i>C. albicans</i>	0.06	0.06	<i>C. parapsilosis</i>	ATCC® 22019	0.064-0.25
		<i>C. albicans</i>	0.125	0.25-0.5	1	<i>C. dubliniensis</i>	0.06	0.06	<i>C. krusei</i>	ATCC® 6258	0.25-1
						<i>C. parapsilosis</i>	0.12	0.12	<i>C. albicans</i>	ATCC® 90028	0.064-0.25
						<i>C. tropicalis</i>	0.12	0.12			
						<i>A. flavus</i>	1	1			
						<i>A. fumigatus</i>	1	1			
						<i>A. nidulans</i>	1	1			
						<i>A. terreus</i>	1	1			
KETOCONAZOLE 0.002 - 32 µg/mL	KE	Not available			Not available			<i>C. parapsilosis</i>	ATCC® 22019	0.032-0.125	
								<i>C. krusei</i>	ATCC® 6258	0.25-1	
								<i>C. albicans</i>	ATCC® 90028	0.008-0.032	
MICAFUNGIN 0.002 - 32 µg/mL	MYC	<i>C. albicans</i>	0.25	0.5	1	<i>C. albicans</i>	0.016	0.016	<i>C. parapsilosis</i>	ATCC® 22019	0.25-2
		<i>C. glabrata</i>	0.06	0.12	0.25	<i>C. glabrata</i>	0.03	0.03	<i>C. krusei</i>	ATCC® 6258	0.032-0.125
		<i>C. tropicalis</i>	0.25	0.5	1	<i>C. parapsilosis</i>	0.002	2	<i>C. albicans</i>	ATCC® 90028	0.004-0.032
		<i>C. krusei</i>	0.25	0.5	1						
		<i>C. parapsilosis</i>	2	4	8						
		<i>C. guilliermondii</i>	2	4	8						

Antifungal	CODE	CLSI INTERPRETATIVE CRITERIA ^{5,6}				EUCAST INTERPRETATIVE CRITERIA ⁷			QUALITY CONTROL		MIC µg/mL
		S≤	I	SDD	R≥	S≤	R>	MIC µg/mL	MIC µg/mL		
POSACONAZOLE 0.002 - 32 µg/mL	POS	Not available				<i>C. albicans</i>	0.06	0.06	<i>C. parapsilosis</i>	ATCC® 22019	0.032-0.25
						<i>C. dubliniensis</i>	0.06	0.06	<i>C. krusei</i>	ATCC® 6258	0.125-0.5
						<i>C. parapsilosis</i>	0.06	0.06	<i>C. albicans</i>	ATCC® 90028	0.032-0.125
						<i>C. tropicalis</i>	0.06	0.06			
						<i>A. fumigatus</i>	0.12	0.25			
						<i>A. terreus</i>	0.12	0.25			
VORICONAZOLE 0.002 - 32 µg/mL	VO	<i>C. albicans</i>	0.12	0.25-0.5	1	<i>C. albicans</i>	0.06	0.25	<i>C. parapsilosis</i>	ATCC® 22019	0.016-0.064
		<i>C. krusei</i>	0.5	1	2	<i>C. dubliniensis</i>	0.06	0.25	<i>C. krusei</i>	ATCC® 6258	0.25-1
		<i>C. parapsilosis</i>	0.12	0.25-0.5	1	<i>C. parapsilosis</i>	0.12	0.25	<i>C. albicans</i>	ATCC® 90028	0.004-0.016
		<i>C. tropicalis</i>	0.12	0.25-0.5	1	<i>C. tropicalis</i>	0.12	0.25			
		<i>A. fumigatus</i>	0.5	1	2	<i>A. fumigatus</i>	1	1			
						<i>A. nidulans</i>	1	1			

ANTIMYCOBACTERIAL	CODE	INTERPRETATIVE CRITERIA	QUALITY CONTROL	MIC µg/mL
ETHAMBUTOL 0.016 - 256 µg/mL	EB	Not available	<i>M. tuberculosis</i>	0.064-0.25
ETHIONAMIDE 0.016 - 256 µg/mL	ET	Not available	<i>M. tuberculosis</i>	0.016-0.064
ISONIAZIDE 0.016 - 256 µg/mL	IZ	Not available	<i>M. tuberculosis</i>	0.016-0.064

References (Cont.)

- CLSI. Performance Standards for Antifungal Susceptibility Testing of Yeasts; 3rd ed. CLSI supplement M27M44S. Clinical and Laboratory Standards Institute; 2022.
- CLSI. Performance Standards for Antifungal Susceptibility Testing of Filamentous Fungi; 2nd ed. CLSI supplement M61. Wayne, PA: Clinical and Laboratory Standards Institute; 2020.
- The European Committee on Antimicrobial Susceptibility Testing. Antifungal Agents. Breakpoint tables for interpretation of MICs. Version 10.0, valid from 2020-02-04.
- U.S. Food & Drug Administration. FDA-Identified Interpretive Criteria and/or Exceptions to the Recognized Standard of CLSI M100. <https://www.fda.gov/STIC>.
 - Antifungal Susceptibility Test Interpretive Criteria - Content current as of: 18 Apr 2023.



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RESISTANCE DETECTION

ESBL: Extended Spectrum Beta Lactamase	CODE	INTERPRETATIVE CRITERIA	QUALITY CONTROL	MIC µg/mL
CEFEPIME / CEFEPIME + CLAVULANIC ACID (4 µg/mL) 0.25-16 / 0.064-4 µg/mL	FEP/FEL	FEP ≥ 0.25 µg/mL and FEP/FEL ≥ 8 µg/mL or deformation of ellipse or phantom zone	<i>P. aeruginosa</i> ATCC® 27853 <i>K. pneumoniae</i> ATCC® 700603	FEP 0.5-2 FEL 1-4 FEP 0.25-1 FEL 0.064-0.25
CEFOTAXIME / CEFOTAXIME + CLAVULANIC ACID (4 µg/mL) 0.25-16 / 0.016-1 µg/mL	CTX/CTL	CTX ≥ 0.5 µg/mL and CTX/CTL ≥ 8 µg/mL or deformation of ellipse or phantom zone	<i>E. coli</i> ATCC® 35218 <i>K. pneumoniae</i> ATCC® 700603	CTX ≤ 0.25 CTL 0.016-0.064 CTX 1-4 CTL 0.125-1
CEFTAZIDIME / CEFTAZIDIME + CLAVULANIC ACID (4 µg/mL) 0.5-32 / 0.064-4 µg/mL	CAZ/CAL	CAZ ≥ 1 µg/mL and CAZ/CAL ≥ 8 µg/mL or deformation of ellipse or phantom zone	<i>E. coli</i> ATCC® 35218 <i>K. pneumoniae</i> ATCC® 700603	CAZ ≤ 0.5 CAL ≤ 0.064 CAZ ≥ 8 CAL 0.125-0.5

MBL: Metallo Beta Lactamase	CODE	INTERPRETATIVE CRITERIA	QUALITY CONTROL	MIC µg/mL
IMIPENEM / IMIPENEM + EDTA 4-256 / 1-64 µg/mL 0.125-8 / 0.032-2 µg/mL	IMI/IMD	IMI/IMD ≥ 8 µg/mL or deformation of ellipse or phantom zone	<i>P. aeruginosa</i> ATCC® 27853 <i>S. maltophilia</i> ATCC® 13636	MBL negative MBL positive
MEROPENEM / MEROPENEM + EDTA 0.125-8 / 0.032-2 µg/mL	MRP/MRD	MRP/MRD ≥ 8 µg/mL or deformation of ellipse or phantom zone	<i>K. pneumoniae</i> ATCC® 700603 <i>K. pneumoniae</i> ATCC® BAA-2146	MBL negative MBL positive

GRD: Glycopeptide Resistance Detection	CODE	INTERPRETATIVE CRITERIA	QUALITY CONTROL	MIC µg/mL
VANCOMYCIN / TEICOPLANIN 0.5-32 / 0.5-32 µg/mL	VA/TEC	VA or TEC ≥ 8 µg/mL • GISA: GRD+ and MIC Test Strip VA M.I.C. ≥ 4 µg/mL • hGISA: GRD+ and MIC Test Strip VA M.I.C. < 4 µg/mL	<i>S. aureus</i> ATCC® 29213 <i>S. aureus</i> ATCC® 700698 <i>S. aureus</i> ATCC® 700699	VA 0.5-2 TEC 1-4 VA 1-8 TEC ≥ 32 VA 4-16 TEC ≥ 32

AmpC	CODE	INTERPRETATIVE CRITERIA	Tentative QUALITY CONTROL	MIC µg/mL
CEFOTETAN / CEFOTETAN+ CLOXACILLIN 0.5-32 / 0.5-32 µg/mL	CTT/CXT	CTT/CXT ≥ 8 µg/mL or deformation of ellipse or phantom zone	<i>K. pneumoniae</i> ATCC® 700603 <i>K. pneumoniae</i> ATCC® BAA-1144	CTT 0.5-2 CXT 0.5-2 CTT ≥ 32 CXT 0.5-1

KPC: Klebsiella Producing Carbapenemase	CODE	INTERPRETATIVE CRITERIA	QUALITY CONTROL	Result
ERTAPENEM / ERTAPENEM + PHENYLBORONIC ACID 0.125-8 / 0.032-2 µg/mL	ETP/EBO	ETP/EBO ≥ 8 µg/mL or deformation of ellipse or phantom zone	<i>K. pneumoniae</i> ATCC® BAA-1706	KPC negative
MEROPENEM / MEROPENEM + PHENYLBORONIC ACID 0.125-8 / 0.032-2 µg/mL	MRP/MBO	MRP/MBO ≥ 8 µg/mL or deformation of ellipse or phantom zone	<i>K. pneumoniae</i> ATCC® BAA-1705	KPC positive

Note: These tests are NOT intended for the determination of the MIC.

Veterinary

Antibiotic	CODE	INTERPRETATIVE CRITERIA ⁹	Swine			Cattle			Poultry			Horses			Dogs			Cats					
			S≤	I	R≥	S≤	I	R≥	S≤	I	R≥	S≤	I	R≥	S≤	I	R≥	S≤	I	R≥			
MIC µg/mL																							
AMIKACIN 0.016 - 256 µg/mL	AK	<i>E. coli</i>																					
		<i>E. coli</i> (foals)																					
		<i>E. coli</i> (adults)																					
		<i>P. aeruginosa</i>																					
AMOXICILLIN*- CLAVULANIC ACID (2/1) 0.016 - 256* µg/mL	AUG	<i>E. coli</i>																					
		UTI (dogs)																					
		<i>Staphylococcus</i> spp.																					
		UTI (dogs)																					
AMPICILLIN 0.016 - 256 µg/mL	AMP	<i>Streptococcus</i> spp.																					
		<i>P. multocida</i>																					
		<i>E. coli</i>				0.25	0.5	1															
		UTI (dogs)																					
		<i>S. pseudintermedius</i>																					
		<i>Staphylococcus</i> spp.																					
		<i>B. bronchiseptica</i>	0.5	1	2																		
		<i>M. haemolytica</i>				0.03	0.06-0.12	0.25															
CEFAZOLIN 0.016 - 256 µg/mL	KZ	<i>P. multocida</i>	0.5	1	2	0.03	0.06-0.12	0.25															
		<i>A. pleuropneumoniae</i>	0.5	1	2																		
		<i>H. somni</i>				0.03	0.06-0.12	0.25															
		<i>E. coli</i>																					
CEPHALOTHIN 0.016 - 256 µg/mL	KF	<i>E. coli, K. pneumoniae, P. mirabilis</i> - UTI (dogs)																					
		<i>S. aureus</i> and <i>S. pseudintermedius</i>																					
		<i>Streptococcus</i> spp. β-Hemolytic Group																					
		<i>P. multocida</i>																					
CEFPODOXIME 0.016 - 256 µg/mL	PX	<i>S. aureus</i> and <i>S. pseudintermedius</i>																					
		<i>Streptococcus</i> spp. β-Hemolytic Group																					
		<i>E. coli, P. mirabilis</i> -																					
		<i>S. aureus</i> and <i>S. pseudintermedius</i>																					
CEFPODOXIME 0.016 - 256 µg/mL	PX	<i>S. canis</i>																					
		<i>P. multocida</i>																					

Antibiotic	CODE	INTERPRETATIVE CRITERIA ⁹	Swine			Cattle			Poultry			Horses			Dogs			Cats				
			S≤	I	R≥	S≤	I	R≥	S≤	I	R≥	S≤	I	R≥	S≤	I	R≥	S≤	I	R≥		
MIC µg/mL																						
CLINDAMYCIN 0.016 - 256 µg/mL	CD	<i>Staphylococcus</i> spp.													0.5	1-2	4					
		<i>Streptococcus</i> spp. β-Hemolytic Group														0.5	1-2	4				
DOXYCYCLINE 0.016 - 256 µg/mL	DXT	<i>E. coli</i>										0.12	0.25	0.5								
		<i>S. pseudintermedius</i>													0.12	0.25	0.5					
		<i>S. aureus</i>													0.12	0.25	0.5					
		<i>S. equi</i>													0.12	0.25	0.5					
ENROFLOXACIN 0.002 - 32 µg/mL	ENR	Enterobacteriaceae													0.5	1-2	4	0.5	1-2	4		
		<i>E. coli</i>									0.25	0.5-1	2	0.12	0.25	0.5						
		<i>P. aeruginosa</i>												0.12	0.25	0.5			0.5	1-2	4	
		<i>Staphylococcus</i> spp.												0.12	0.25	0.5	0.5	1-2	4	0.5	1-2	4
		<i>S. aureus</i>												0.12	0.25	0.5						
		<i>Streptococcus</i> spp.														0.5	1-2	4	0.5	1-2	4	
		<i>S. equi</i>												0.12	0.25	0.5						
		<i>S. suis</i>	0.5	1	2																	
		<i>M. haemolytica</i>				0.25	0.5-1	2														
		<i>P. multocida</i>	0.25	0.5	1	0.25	0.5-1	2														
<i>A. pleuropneumoniae</i>	0.25	0.5	1																			
<i>H. somni</i>				0.25	0.5-1	2																
GENTAMICIN 0.016 - 256 µg/mL 0.064 - 1024 µg/mL	CN	Enterobacteriaceae										2	4	8	2	4	8					
		<i>P. aeruginosa</i>											2	4	8	2	4	8				
		<i>A. pleuropneumoniae</i>											2	4	8							
FLORFENICOL 0.016 - 256 µg/mL	FFC	<i>S. enterica</i>	4	8	16																	
		<i>S. suis</i>	2	4	8																	
		<i>B. bronchiseptica</i>	2	4	8																	
		<i>M. haemolytica</i>				2	4	8														
		<i>P. multocida</i>	2	4	8	2	4	8														
		<i>A. pleuropneumoniae</i>	2	4	8																	
		<i>H. somni</i>				2	4	8														
MARBOFLOXACIN 0.002 - 32 µg/mL	MAR	Enterobacteriaceae													1	2	4	1	2	4		
		<i>Staphylococcus</i> spp.														1	2	4	1	2	4	
		<i>Streptococcus</i> spp.														1	2	4	1	2	4	
MINOCYCLINE 0.016 - 256 µg/mL	MN	<i>E. coli</i>										0.12	0.25	0.5								
		<i>S. pseudintermedius</i>													0.5	1	2					
		<i>S. aureus</i>											0.12	0.25	0.5							
		<i>Streptococcus</i> spp.											0.12	0.25	0.5							
PENICILLIN G 0.002 - 32 µg/mL 0.016 - 256 µg/mL	P	<i>Staphylococcus</i> spp.												0.5	1	2						
		<i>S. suis</i>	0.25	0.5	1																	
		<i>M. haemolytica</i>				0.25	0.5	1														
		<i>P. multocida</i>	0.25	0.5	1	0.25	0.5	1														
<i>H. somni</i>				0.25	0.5	1																
PIPERACILLIN- TAZOBACTAM 0.016/4 - 256/4 µg/mL	TZP	Enterobacteriaceae													8	16	32					
		<i>P. aeruginosa</i>													8	16	32					

Antibiotic	CODE	INTERPRETATIVE CRITERIA ⁹	Swine			Cattle			Poultry			Horses			Dogs			Cats		
			S≤	I	R≥	S≤	I	R≥	S≤	I	R≥	S≤	I	R≥	S≤	I	R≥	S≤	I	R≥
MIC µg/mL																				
SPECTINOMYCIN 0.064 - 1024 µg/mL	SPC	<i>M. haemolytica</i>				32	64	128												
		<i>P. multocida</i>				32	64	128												
		<i>H. somni</i>				32	64	128												
TETRACYCLINE 0.016 - 256 µg/mL	TE	<i>Staphylococcus</i> spp.	1												0.25	0.5	1			
		<i>S. suis</i>	0.5	1	2															
		<i>M. haemolytica</i>				2	4	8												
		<i>P. multocida</i>	0.5	1	2	2	4	8												
		<i>A. pleuropneumoniae</i>	0.5	1	2															
TIAMULIN 0.002 - 32 µg/mL	TIA	<i>H. somni</i>				2	4	8												
		<i>A. pleuropneumoniae</i>	16	-	32															
TILMICOSIN 0.002 - 32 µg/mL	TIL	<i>A. pleuropneumoniae</i>	8	16	32															

Note: For combination agents, MIC values are expressed as the concentration of the first component of the combination.

For QC ranges not shown below, see the clinical section

Antibiotic	CODE	<i>S. aureus</i> ATCC® 29213	<i>E. faecalis</i> ATCC® 29212	<i>E. coli</i> ATCC® 25922	<i>P. aeruginosa</i> ATCC® 27853	<i>S. pneumoniae</i> ATCC® 49619
		QUALITY CONTROL MIC µg/mL				
ENROFLOXACIN 0.002 - 32 µg/mL	ENR	0.03-0.12	0.12-1	0.008-0.03	1-4	
FLORFENICOL 0.016 - 256 µg/mL	FFC	2-8	2-8	2-8		1-4
MARBOFLOXACIN 0.002 - 32 µg/mL	MAR	0.12-0.5	0.5-2	0.008-0.03	0.5-2	
TIAMULIN 0.002 - 32 µg/mL	TIA	0.5-2				0-5-4
TILMICOSIN 0.002 - 32 µg/mL	TIL	1-4	8-32			

References (Cont.)

- CLSI. Performance Standards for Antimicrobial Disk and Dilution Susceptibility Tests for Bacteria Isolated From Animals; 4th ed. CLSI supplement VET08. Wayne, PA: Clinical and Laboratory Standards Institute; 2018.



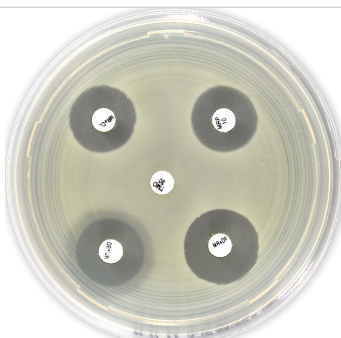
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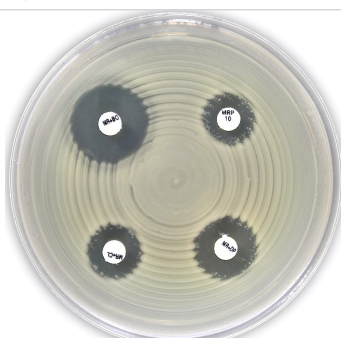
Disc kits for Antimicrobial Resistance Testing

KPC&MBL&OXA-48 discs kit			Packaging	Ref.
Description		µg		
Meropenem	MRP	10	50 Test	99007
Meropenem + Phenylboronic acid	MR+BO			
Meropenem + Cloxacillin	MR+CL			
Meropenem + EDTA	MR+EDTA			
Temocillin	TMO	30		



Klebsiella pneumoniae
clinical isolate
OXA-48 positive

KPC&MBL discs kit (according to EUCAST)			Packaging	Ref.
Description		µg		
Meropenem	MRP	10	50 Test	99003
Meropenem + Phenylboronic acid	MR+BO			
Meropenem + Cloxacillin	MR+CL			
Meropenem + EDTA	MR+EDTA			



Klebsiella pneumoniae
ATCC® BAA-1705™
KPC positive

EUCAST ESBL discs kit			Packaging	Ref.
Description		µg		
Cefotaxime	CTX	5	50 Test	99002
Cefotaxime + Clavulanic acid	CTL	15 (5+10)		
Ceftazidime	CAZ	10		
Ceftazidime + Clavulanic acid	CAL	20 (10+10)		
Cefepime	FEP	30		
Cefepime + Clavulanic acid	FEL	40 (30+10)		



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In US available as RUO device

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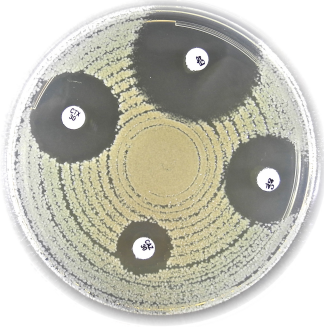
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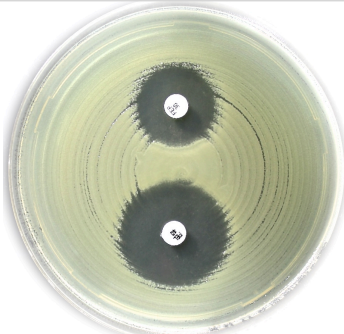
Disc kits for Antimicrobial Resistance Testing

ESBL discs kit (according to CLSI)			Packaging	Ref.
Description		µg		
Cefotaxime	CTX	30	50 Test	99005
Cefotaxime + Clavulanic acid	CTL	40 (30+10)		
Ceftazidime	CAZ	30		
Ceftazidime + Clavulanic acid	CAL	40 (30+10)		



Klebsiella pneumoniae subsp. *pneumoniae*
ATCC® 700603™
ESBL positive

ESBL (chromosomal ind. AmpC) discs kit (according to EUCAST)			Packaging	Ref.
Description		µg		
Cefepime	FEP	30	100 Test	99006
Cefepime + Clavulanic acid	FEL	40 (30+10)		



Enterobacter cloacae
clinical isolate
ESBL positive

ESBL+AmpC screen discs kit			Packaging	Ref.
Description		µg		
Cefotaxime		30	50 Test	99008
Cefotaxime + Clavulanic acid		40 (30+10)		
Cefotaxime + Cloxacillin				
Cefotaxime + Clavulanic acid + Cloxacillin				

AmpC discs kit			Packaging	Ref.
Description		µg		
Cefotaxime		30	50 Test	99009
Cefotaxime + Cloxacillin				
Ceftazidime		30		
Ceftazidime + Cloxacillin				



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US Distribution Center



KPC&MBL&OXA-48 disc kit (acc. to EUCAST)

Disc tests for confirmation of carbapenemase-producing Enterobacteriaceae.

DESCRIPTION

Carbapenemases are β -lactamases that hydrolyze penicillins, in most cases cephalosporins and to various degree carbapenems. The most important carbapenemases are categorized as three types of enzymes:

1. *Klebsiella pneumoniae* carbapenemases (KPC) belonging to the Ambler class A of β -lactamases;
2. VIM, IMP and NDM belonging to the class B metallo β -lactamases (MBL);
3. Class D β -lactamases of OXA-48-like enzymes.

Since the 1990s, the increased consumption of carbapenems to treat infections caused by extended-spectrum β -lactamases (ESBL) producing bacteria has in turn contributed to the dramatic increase in carbapenem-resistant Enterobacteriaceae (CRE). Bacterial acquisition of carbapenemases is crucial to the emergence of CRE. Indeed, the corresponding genes are mostly plasmid-located and associated with various mobile genetic structures and may confer resistance to virtually all β -lactams. Infections with carbapenemase-producing Enterobacteriaceae are associated with high mortality posing a serious threat especially to hospitalized patients. Carbapenemases are considered to be of high epidemiological importance and one of the most important concerns is the spread in the community, particularly in *E. coli*. Adequate treatment and control of CRE infections is predicted upon their accurate and prompt diagnosis from patient samples in the clinical laboratory. Carbapenem resistance can also arise in both ESBL and AmpC-producing organisms (Ambler class A and C, respectively) by mutation that regulate the synthesis of porins contained in the outer membrane.

Carbapenem MICs for carbapenemase-producing enterobacteriaceae may be below the clinical breakpoints, however, the epidemiological cut-off (ECOFF) defined by EUCAST can be used to detect carbapenemase-producers. Meropenem, offering the best compromise between sensitivity and specificity, is recommended for screening.

Following detection of reduced susceptibility to carbapenems, a phenotypic method for confirmation of carbapenemase-production should be applied. Meropenem discs supplemented with different inhibitors of carbapenemase are used to evaluate carbapenem-resistant strains.

CONTENTS OF THE PACKAGES

5 x 50 discs cartridges, each packaged in a "blister" with a dryer.

METHOD PRINCIPLE

Enterobacteriaceae suspected to be producers of carbapenemases may be confirmed by using meropenem and evaluating the synergistic effects when combined with the following inhibitors:

- **Phenylboronic acid** inhibits class A carbapenemase;
- **EDTA** inhibits class B carbapenemase;
- **Cloxacillin**, which inhibits AmpC β -lactamases, permits to differentiate between AmpC hyperproduction plus porin loss and carbapenemase-production.

There is no currently available inhibitor for class D carbapenemases. However, when there is no synergy of meropenem with any of the above mentioned inhibitors, 30 μ g **Temocillin** disc (TMO) can be used in order to differentiate between ESBL plus porin loss and OXA-48 like enzymes.

For each combined disc test (CDT), discs containing meropenem alone and in combination with a carbapenemases inhibitor are applied. The inhibition zone around the meropenem disc combined with inhibitor is compared with the zone around the 10 μ g meropenem disc (MRP).

GATHERING AND KEEPING SAMPLES

The colonies that are to be subjected to the susceptibility test are taken up by culture media that have been previously swabbed with the sample under examination.

TEST PROCEDURE

1. Using a fresh, pure culture prepare a suspension of the test organism equal to 0.5 McFarland Standard.
2. Using a sterile cotton swab, spread the adjusted suspension over the entire area of a Mueller Hinton agar plate.
3. Apply Meropenem, Meropenem + EDTA, Meropenem + Phenylboronic acid, Meropenem + Cloxacillin, on the inoculated plate, ensuring sufficient space between individual discs to allow for proper measurement of inhibition zones.
4. Incubate at $36\pm 1^\circ\text{C}$ for 18-24 hours.

EVALUATING THE RESULTS

At the end of the incubation period, measure the inhibition halos and interpret as indicated in the table below.

Interpretative Table. Synergy of meropenem with carbapenem inhibitors for confirmation of CRE.

Increase in inhibition zone of meropenem with the following inhibitor			Temocillin (TMO)*	β-lactamases
Phenylboronic acid (MR+BO)	EDTA (MR+ED)	Cloxacillin (MR+CL)		
≥ 4 mm	< 5 mm	< 5 mm	---	KPC
< 4 mm	≥ 5 mm	< 5 mm	---	MBL
≥ 4 mm AND	< 5 mm	≥ 5 mm	---	AmpC + porin loss or efflux
< 4 mm	< 5 mm	< 5 mm	< 11 mm	OXA-48-like

*Temocillin susceptibility test is recommended only in cases where no synergy is detected.

QUALITY CONTROL

Each production batch of discs is subjected to the quality control with the following bacterial strains:

Microorganism		
<i>Klebsiella pneumoniae</i>	ATCC® 700603	Negative control
<i>Klebsiella pneumoniae</i>	ATCC® BAA-2146	MBL positive
<i>Klebsiella pneumoniae</i>	ATCC® BAA-1705	KPC positive
<i>Klebsiella pneumoniae</i>	NCTC 13442	OXA-48 positive

LIMITS

Diffusion susceptibility tests use an *in vitro* technique and cannot therefore reproduce the extremely complex *in vivo* conditions. Nevertheless, it is a useful and important tool that helps the clinician choose the correct therapy. Many variable factors influence the final result of the diffusion susceptibility test. The main ones are: the culture medium used, impregnation of the discs, inoculation of the medium, temperature, time and incubation atmosphere of the plates, pre-incubation and pre-diffusion conditions, depth of the medium, etc.

PRECAUTIONS

The discs cannot be classified as being hazardous according to current legislation but fall within the specific field of application where a safety data sheet must be supplied because they can cause phenomena of sensitization in sensitive subjects if they come into contact with the skin.

The discs are disposable products. They are only for diagnostic *in vitro* use and are intended for professional use. They must be used in the laboratory by properly trained operators using approved aseptic and safety methods for pathogenic agents.

STORAGE

Store the unopened blister at -20°C to +8°C till the expiry date. Allow unopened cartridge to come to room temperature before removing it from the blister for minimising condensation on the discs. Leftover discs from an opened cartridge should be stored at 2-8°C for no more than 7 days. Return unused discs to the refrigerator as soon as the application of the discs has been completed. Dispose of expire discs.

ELIMINATING USED MATERIAL

After use, the discs and the material that comes into contact with the sample must be decontaminated and disposed of in accordance with current laboratory techniques for the decontamination and disposal of potentially infected material.








REFERENCES

- EUCAST guidelines for detection of resistance mechanisms and specific resistances of clinical and/or epidemiological importance. Version 1.0, 2013.

PRESENTATION

DESCRIPTION		PACKAGING	REF
Meropenem 10 µg	MRP	50 Discs	99007
Meropenem + EDTA	MR+ED	50 Discs	
Meropenem + Phenylboronic acid	MR+BO	50 Discs	
Meropenem + Cloxacillin	MR+CL	50 Discs	
Temocillin 30 µg	TMO	50 Discs	

TABLE OF SYMBOLS

LOT Batch code	IVD <i>In Vitro</i> Diagnostic Medical Device	 Manufacturer	 Use by	 Fragile, handle with care
REF Catalogue number	 Temperature limitation	 Contains sufficient for <n> tests	 Caution, consult accompanying documents	 Do not reuse



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