

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

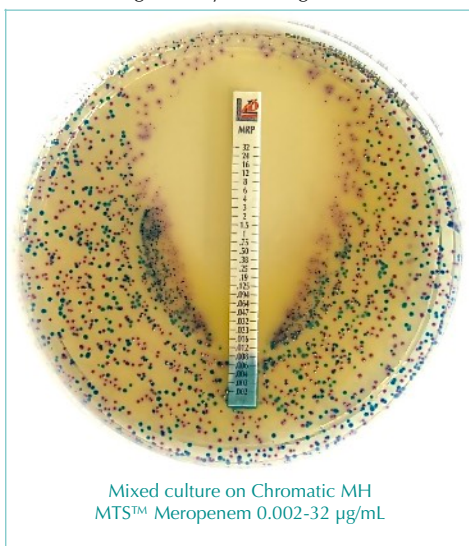
MTS™ is a quantitative assay for determining the Minimum Inhibitory Concentration (M.I.C.) of antimicrobial agents against microorganisms and for detecting the resistance mechanisms.

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.

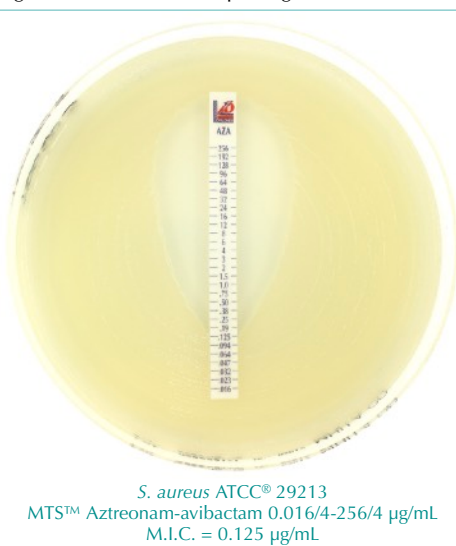
On one side of the strip is indicated a M.I.C. scale in µg/mL and a code that identify the antimicrobial agent.

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



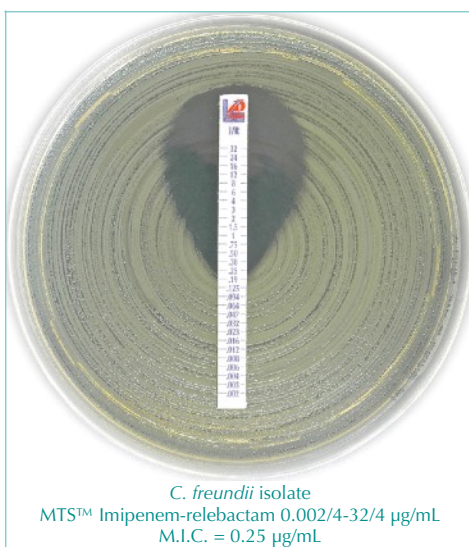
S. aureus ATCC® 29213
MTS™ Aztreonam-avibactam 0.016/4-256/4 µg/mL
M.I.C. = 0.125 µg/mL

method principle

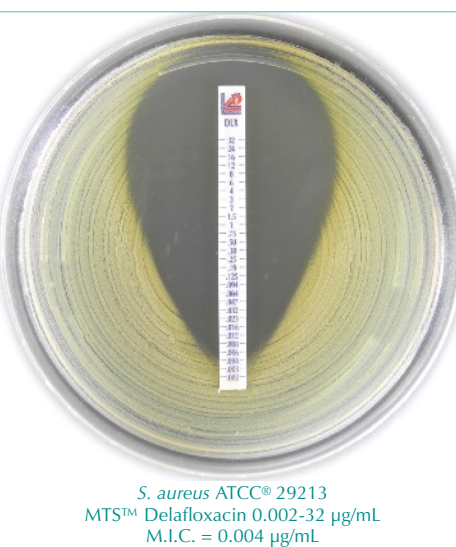
When the **MTS™** is applied onto an inoculated agar surface, the preformed exponential gradient of antimicrobial agent is transferred to the agar matrix.

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 FDA¹	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

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™	CEFTRIAZONE	0.016 - 256	CRO	✓	RUO	10/pack	920421
						30/pack	92042
						100/pack	920420
MTS™	CEFTRIAZONE	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 Ca²⁺	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 30/pack 100/pack	920351 92035 920350
MTS™	GENTAMICIN	0.016 - 256	CN	✓	✓	10/pack 30/pack 100/pack	920091 92009 920090
MTS™	GENTAMICIN	0.064 - 1024	CN	✓	RUO	10/pack 30/pack 100/pack	920101 92010 920100
MTS™	IMIPENEM	0.002 - 32	IMI	✓	RUO	10/pack 30/pack 100/pack	920541 92054 920540
MTS™	IMIPENEM	0.016 - 256	IMI	✓	✓	10/pack 30/pack 100/pack	920681 92068 920680
MTS™	IMIPENEM-RELEBACTAM	0.002/4 - 32/4	I/R	✓	✓	10/pack 30/pack 100/pack	920761 92076 920760
MTS™	KANAMYCIN	0.016 - 256	K	✓	RUO	10/pack 30/pack 100/pack	920341 92034 920340
MTS™	LEFAMULIN	0.016 - 256	LMU	✓	✓	10/pack 30/pack 100/pack	920641 92064 920640
MTS™	LEVOFLOXACIN	0.002 - 32	LEV	✓	✓	10/pack 30/pack 100/pack	920811 92081 920810
MTS™	LINEZOLID	0.016 - 256	LNZ	✓	✓	10/pack 30/pack 100/pack	921351 92135 921350
MTS™	MARBOFLOXACIN	0.002 - 32	MAR	vet	vet	10/pack 30/pack 100/pack	920621 92062 920620
MTS™	MECILLINAM	0.016 - 256	MEC	✓	RUO	10/pack 30/pack 100/pack	920171 92017 920170
MTS™	MEROPENEM	0.002 - 32	MRP	✓	✓	10/pack 30/pack 100/pack	920841 92084 920840
MTS™	MEROPENEM	0.016 - 256	MRP	✓	RUO	10/pack 30/pack 100/pack	920851 92085 920850
MTS™	MEROPENEM-VABORBACTAM	0.016/8 - 256/8	M/V	✓	✓	10/pack 30/pack 100/pack	920741 92074 920740
MTS™	METRONIDAZOLE	0.016 - 256	MTZ	✓	RUO	10/pack 30/pack 100/pack	920871 92087 920870
MTS™	MOXIFLOXACIN	0.002 - 32	MXF	✓	RUO	10/pack 30/pack 100/pack	920901 92090 920900
MTS™	MUPIROCIN	0.064 - 1024	MUP	✓	RUO	10/pack 30/pack 100/pack	920381 92038 920380
MTS™	MINOCYCLINE	0.016 - 256	MN	✓	RUO	10/pack 30/pack 100/pack	920321 92032 920320
MTS™	NALIDIXIC ACID	0.016 - 256	NA	✓	RUO	10/pack 30/pack 100/pack	921321 92132 921320
MTS™	NETILMICIN	0.016 - 256	NET	✓	RUO	10/pack 30/pack 100/pack	920931 92093 920930
MTS™	NORFLOXACIN	0.016 - 256	NOR	✓	RUO	10/pack 30/pack 100/pack	920961 92096 920960
MTS™	NITROFURANTOIN	0.032 - 512	F	✓	RUO	10/pack 30/pack 100/pack	920221 92022 920220
MTS™	OFLOXACIN	0.002 - 32	OFX	✓	RUO	10/pack 30/pack 100/pack	920991 92099 920990
MTS™	OMADACYCLINE	0.002 - 32	OMC	✓	✓	10/pack 30/pack 100/pack	920711 92071 920710
MTS™	OXACILLIN	0.016 - 256	OX	✓	RUO	10/pack 30/pack 100/pack	920151 92015 920150
MTS™	PAROMOMYCIN	0.064 - 1024	PAR	RUO	RUO	10/pack 30/pack 100/pack	920731 92073 920730
MTS™	PENICILLIN G	0.002 - 32	P	✓	✓	10/pack 30/pack 100/pack	921031 92103 921030
MTS™	PENICILLIN G	0.016 - 256	P	✓	RUO	10/pack 30/pack 100/pack	921021 92102 921020
MTS™	PIPERACILLIN	0.016 - 256	PIP	✓	RUO	10/pack 30/pack 100/pack	921051 92105 921050

MTS™ for ANTIMICROBIAL susceptibility testing							
Description		µg/mL	Code	CE IVD	US FDA¹	Packaging	Ref.
MTS™	PIPERACILLIN-TAZOBACTAM for Enterobacterales, <i>Pseudomonas</i> , <i>Acinetobacter</i>	0.016/4 - 256/4	TZP	✓	✓	10/pack 30/pack 100/pack	921081 92108 921080
MTS™	PIPERACILLIN-TAZOBACTAM for <i>Haemophilus</i> , Anaerobes	0.064/4 - 1024/4	TZP	RUO	RUO	10/pack 30/pack 100/pack	921131 92113 921130
MTS™	PLAZOMICIN	0.016 - 256	PLZ	✓	✓	10/pack 30/pack 100/pack	920701 92070 920700
MTS™	POLYMYXIN B	0.064 - 1024	PB	✓	RUO	10/pack 30/pack 100/pack	920041 92004 920040
MTS™	QUINUPRISTIN-DALFOPRISTIN	0.002 - 32	QDA	✓	RUO	10/pack 30/pack 100/pack	920261 92026 920260
MTS™	RIFAMPICIN	0.002 - 32	RD	✓	RUO	10/pack 30/pack 100/pack	920011 92001 920010
MTS™	RIFAMPICIN	0.016 - 256	RD	✓	RUO	10/pack 30/pack 100/pack	920251 92025 920250
MTS™	SPECTINOMYCIN	0.064 - 1024	SPC	✓	RUO	10/pack 30/pack 100/pack	920141 92014 920140
MTS™	SPIRAMYCIN	0.002 - 32	SP	✓	RUO	10/pack 30/pack 100/pack	920461 92046 920460
MTS™	STREPTOMYCIN	0.064 - 1024	S	✓	RUO	10/pack 30/pack 100/pack	921111 92111 921110
MTS™	SULBACTAM	0.016 - 256	SUL	✓	RUO	10/pack 30/pack 100/pack	920281 92028 920280
MTS™	SULFAMETHOXAZOLE	0.064 - 1024	SMX	✓	RUO	10/pack 30/pack 100/pack	920311 92031 920310
MTS™	TEDIZOLID	0.002 - 32	TZD	✓	✓	10/pack 30/pack 100/pack	921361 92136 921360
MTS™	TEICOPLANIN	0.016 - 256	TEC	✓	RUO	10/pack 30/pack 100/pack	920121 92012 920120
MTS™	TELAVANCIN	0.002 - 32	TLV	✓	RUO	10/pack 30/pack 100/pack	920521 92052 920520
MTS™	TELAVANCIN	0.016 - 256	TLV	✓	✓	10/pack 30/pack 100/pack	920531 92053 920530
MTS™	TEMOCILLIN	0.064 - 1024	TMO	✓	RUO	10/pack 30/pack 100/pack	920291 92029 920290
MTS™	TETRACYCLINE	0.016 - 256	TE	✓	✓	10/pack 30/pack 100/pack	921141 92114 921140
MTS™	TIAMULIN	0.002 - 32	TIA	vet	vet	10/pack 30/pack 100/pack	922001 92200 922000
MTS™	TICARCILLIN	0.016 - 256	TC	✓	RUO	10/pack 30/pack 100/pack	921831 92183 921830
MTS™	TICARCILLIN-CLAVULANIC ACID	0.016/2 - 256/2	TTC	✓	RUO	10/pack 30/pack 100/pack	921171 92117 921170
MTS™	TIGECYCLINE	0.016 - 256	TGC	✓	RUO	10/pack 30/pack 100/pack	921441 92144 921440
MTS™	TILMICOSIN	0.002 - 32	TIL	vet	vet	10/pack 30/pack 100/pack	922011 92201 922010
MTS™	TOBRAMYCIN	0.016 - 256	TOB	✓	RUO	10/pack 30/pack 100/pack	921211 92121 921210
MTS™	TOBRAMYCIN	0.064 - 1024	TOB	✓	RUO	10/pack 30/pack 100/pack	921201 92120 921200
MTS™	TRIMETHOPRIM	0.002 - 32	TM	✓	RUO	10/pack 30/pack 100/pack	920371 92037 920370
MTS™	TRIMETHOPRIM*-SULFAMETHOXAZOLE (1/19)	0.002 - 32*	SXT	✓	RUO	10/pack 30/pack 100/pack	921231 92123 921230
MTS™	VANCOMYCIN	0.016 - 256	VA	✓	✓	10/pack 30/pack 100/pack	920571 92057 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 30/pack 100/pack	921701 92170 921700
MTS™	Ethionamide	0.016 - 256	ET	✓	RUO	10/pack 30/pack 100/pack	921721 92172 921720
MTS™	Isoniazide	0.016 - 256	IZ	✓	RUO	10/pack 30/pack 100/pack	921711 92171 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 30/pack 100/pack	921531 92153 921530
MTS™	Anidulafungin	0.002 - 32	AND	✓	RUO	10/pack 30/pack 100/pack	921551 92155 921550
MTS™	Caspofungin	0.002 - 32	CAS	✓	RUO	10/pack 30/pack 100/pack	921541 92154 921540
MTS™	Fluconazole	0.016 - 256	FLU	✓	RUO	10/pack 30/pack 100/pack	921471 92147 921470
MTS™	Flucytosine	0.002 - 32	FC	✓	RUO	10/pack 30/pack 100/pack	921491 92149 921490
MTS™	Isavuconazole	0.002 - 32	IVU	✓	RUO	10/pack 30/pack 100/pack	921841 92184 921840
MTS™	Itraconazole	0.002 - 32	ITC	✓	RUO	10/pack 30/pack 100/pack	921481 92148 921480
MTS™	Ketoconazole	0.002 - 32	KE	✓	RUO	10/pack 30/pack 100/pack	921511 92151 921510
MTS™	Micafungin	0.002 - 32	MYC	✓	RUO	10/pack 30/pack 100/pack	921821 92182 921820
MTS™	Posaconazole	0.002 - 32	POS	✓	RUO	10/pack 30/pack 100/pack	921521 92152 921520
MTS™	Rezafungin	0.002 - 32	RZF	RUO	RUO	10/pack 30/pack 100/pack	920911 92091 920910
MTS™	Voriconazole	0.002 - 32	VO	✓	RUO	10/pack 30/pack 100/pack	921501 92150 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 30/pack 100/pack	921611 92161 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 30/pack 100/pack	921601 92160 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 30/pack 100/pack	921591 92159 921590
MTS™	IMIPENEM / IMIPENEM + EDTA for detection of Metallo Beta-Lactamase (MBL)	4-256 / 1-64	IMI/IMD	✓	RUO	10/pack 30/pack 100/pack	921621 92162 921620
MTS™	IMIPENEM / IMIPENEM + EDTA for detection of Metallo Beta-Lactamase (MBL)	0.125-8 / 0.032-2	IMI/IMD	✓	RUO	10/pack 30/pack 100/pack	921661 92166 921660
MTS™	MEROPENEM / MEROPENEM + EDTA for detection of Metallo Beta-Lactamase (MBL)	0.125-8 / 0.032-2	MRP/MRD	✓	RUO	10/pack 30/pack 100/pack	921651 92165 921650
MTS™	MEROPENEM / MEROPENEM + PHENYLBORONIC ACID for KPC detection	0.125-8 / 0.032-2	MRP/MBO	✓	RUO	10/pack 30/pack 100/pack	921671 92167 921670
MTS™	ERTAPENEM / ERTAPENEM + PHENYLBORONIC ACID for KPC detection	0.125-8 / 0.032-2	ETP/EBO	✓	RUO	10/pack 30/pack 100/pack	921681 92168 921680
MTS™	CEFOTETAN / CEFOTETAN+CLOXACILLIN for AmpC detection	0.5-32 / 0.5-32	CTT/CXT	✓	RUO	10/pack 30/pack 100/pack	921641 92164 921640
MTS™	ERTAPENEM / ERTAPENEM + CLOXACILLIN for AmpC detection	0.125-8 / 0.032-2	ETP/ECX	✓	RUO	10/pack 30/pack 100/pack	921691 92169 921690
MTS™	VANCOMYCIN / TEICoplanin for detection of Glycopeptide Resistance (GRD)	0.5-32 / 0.5-32	VA/TEC	✓	RUO	10/pack 30/pack 100/pack	921631 92163 921630

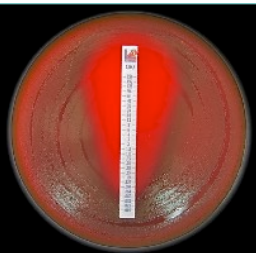
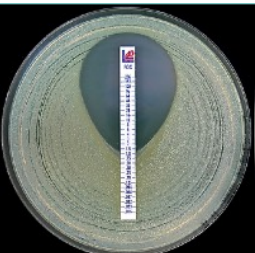
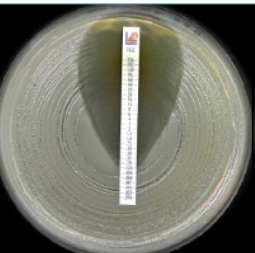
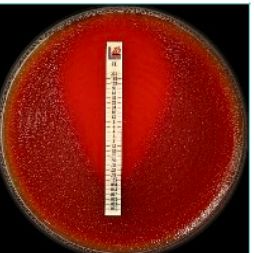
¹ **United States FDA**: check the package insert to determine the clearance for testing an agent against a particular isolate.

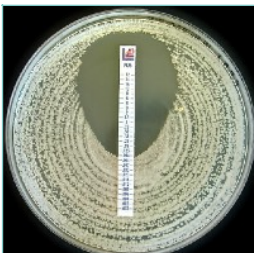
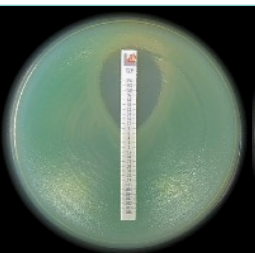
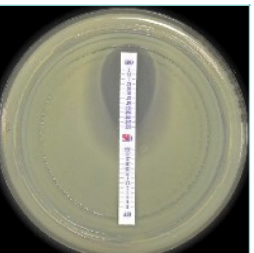
Ready to use culture media

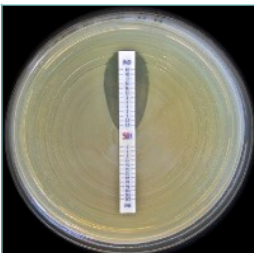
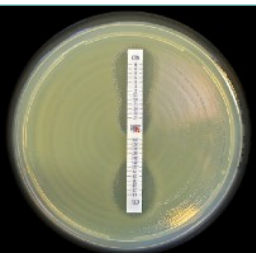
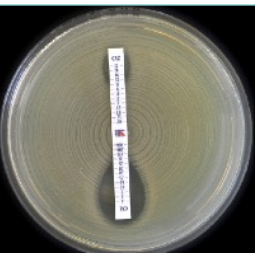
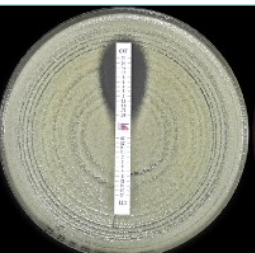
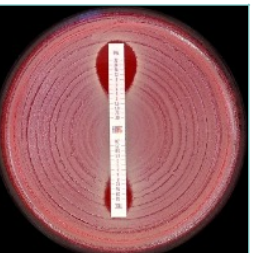
Description	CE IVD	US FDA	Format	Packaging	Ref.
Mueller Hinton II Agar for antimicrobial susceptibility testing of non-fastidious organisms.	✓	RUO	90 mm 140 mm	20/pack 10/pack	10031 10231
Mueller Hinton II Agar + Sheep Blood 5% for antimicrobial susceptibility testing of fastidious organisms.	✓	RUO	90 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

				
<i>E. coli</i> ATCC® 25922 MTS™ SXT 0.002-32 µg/mL M.I.C. = 0.094 µg/mL	<i>S. pneumoniae</i> ATCC® 49619 MTS™ CRO 0.016-256 µg/mL M.I.C. = 0.064 µg/mL	<i>S. aureus</i> ATCC® 29213 MTS™ FOX 0.016-256 µg/mL M.I.C. = 1.5 µg/mL	<i>S. aureus</i> ATCC® 29213 MTS™ TGC 0.016-256 µg/mL M.I.C. = 0.19 µg/mL	<i>S. pneumoniae</i> ATCC® 49619 MTS™ TE 0.016-256 µg/mL M.I.C. = 0.125 µg/mL

				
<i>C. krusei</i> ATCC® 6258 MTS™ POS 0.002-32 µg/mL M.I.C. = 0.094 µg/mL	<i>S. aureus</i> ATCC® 29213 MTS™ FU 0.016-256 µg/mL M.I.C. = 0.50 µg/mL	<i>C. krusei</i> MTS™ VO 0.002-32 µg/mL M.I.C. = 0.25 µg/mL	<i>P. aeruginosa</i> ATCC® 27853 MTS™ TZP 0.016-256 µg/mL M.I.C. = 8 µg/mL	<i>K. pneumoniae</i> MTS™ ETP/EBO KPC+

				
<i>S. maltophilia</i> ATCC® 13636 MTS™ IMI/IMD 4-256/1-64 µg/mL MBL+	<i>E. coli</i> DSM 22311 MTS™ CTX/CTL 0.25-16/0.016-1 µg/mL ESBL+	<i>E. coli</i> MTS™ CAZ/CAL 0.5-32/0.064-4 µg/mL ESBL+	<i>K. pneumoniae</i> ATCC® BAA-1144 MTS™ CTT/CXT AmpC+	<i>Staphylococcus aureus</i> MTS™ Vancomycin / Teicoplanin GRD+

Contact your local dealer or Liofilchem headquarters for MTS™ availability.

 Argentina MedicaTec S.R.L. Tel +54 11 4554.4600 Fax +54 11 4555.0416 www.medica-tec.com	 Finland Immuno Diagnostic Oy Tel +3583615370 Fax +35836822039 www.immunodiagnostic.fi	 New Zealand Pointview Laboratories NZ Ltd Tel +64 9 265 2884 Fax +64 9 265 0776 info@pointviewlaboratories.com	 Slovenia Mediline d.o.o. Tel +38618308040 Fax +38618308070 www.mediline.si
 Australia Integrated Sciences Tel.: +61 2 9417 7866 Fax: +61 2 9417 5066 tech@integratedsci.com.au	 France i2a Tel +33467504800 Fax +33467170906 www.i2a.info	 Norway Montebello Diagnostics AS Tel 22 14 14 90 Fax 22 14 44 90 www.montebello.no	 South Africa Davies Diagnostics (PTY) Ltd Tel +27117777600 Fax +27117876917 www.daviesdiagnostics.co.za
 Austria IVD Uhl-Michelin e.U. Tel.: +43 (0) 69914616219 Fax: +43 (0) 463 265526 6222 werner.uhl-michelin@ivd.at	 Germany bestbion dx GmbH Tel +49 2234 987 95 0 Fax +49 2234 987 95 29 service@bestbion.com	 Paraguay GT Scientific S.A. Tel 595 21 200134 Fax 595 21 221339 ventas@gtscientific.com.py	 Spain Werfen España, SAU Tel 902203090 Fax 902223366 www.werfen.com
 Belgium ELITech Group B.V. Tel +32 (0)92820531 Fax +32 (0)92820532 c.notte@elitechgroup.com	 Greece Varelas S.A. Tel +302105281920 Fax +302105220926 microbiology@varelas.gr	 Philippines Scientific Biotech Specialties Inc. Tel +63 (2) 8824 4551 info@sbsi.com.ph	 Sweden Liofilchem Nordics ApS Tel +45 40610954 info@liofilchem.dk
 Brazil Plast Labor Tel (21) 25010888 (21) 25011905 (21) 3273 9105 (21) 2599 8419 plabor@plastlabor.com.br	 Hong Kong Bio-Gene Technology Ltd. Tel +85226466101 Fax +85226868806 info@bio-gene.com.hk	 Poland Argenta Spółka z ograniczoną odpowiedzialnością Sp.k. tel. +48 618474637 fax +48 618483477 argenta@argenta.com.pl	 Switzerland BALTEQ Solutions GmbH Tel: +41417400814 Fax: +41417403488 www.balteq.ch
 Bulgaria Elta 90M Tel +35929839649 Fax +35929832211 www.elta90.com	 Hungary Frank Diagnosztika Kft. Tel 388-3114, 367-2430 Fax 368-5721 www.frank-diagn.hu	 Portugal Werfen Portugal, LDA Tel +351 214161288 Fax +351 214176484 MTS™ product range only	 Thailand Envimed Co., Ltd. Tel 66-2-434-0391 Fax 66-2-435-5962 info@envimed.co.th
 Chile Medica Tec de Chile S.A. Tel +56 (02) 4261830 fax +56 (02) 4261835 mrojas@medica-tec.cl	 Ireland Launch Diagnostics Ireland Tel +3530719151122 Fax +3530719152277 desruddy@launchdiagnostics.ie	 Qatar Micro Lab Medical Mob: +974 55050342 Fax: +974 40391713 sales@mlmqatar.com	 Turkey Kemiteks Kimyevi Mad. Tic. Ltd. Sti. Tel +90 216 449 58 70 Fax +90 216 449 58 72 www.kemitekskimya.com.tr
 Croatia Tamiko Instruments d.o.o. Tel +385 1 4683 046 Fax +385 1 4684 811 info@tamiko.hr	 Italy Liofilchem Tel +39 0858930745 Fax +39 0858930330 www.liofilchem.com	 Saudi Arabia Gamsco Tel +966-3-8394085 Fax +966-3-8394084 drmalousef@yahoo.com	 Ukraine Ukrbio Ltd. Tel +38 067 240 63 29 Fax +38 044 205 56 21 office.ukrbio@gmail.com
 Czech Republic BioVendor Tel +420549124123 Fax +420549211465 www.biovendor.cz	 Lithuania Biometrija tel +37 052481824 fax +37 052400085 www.biometrija.lt	 Serbia Uni-Chem Tel +381113282986 Fax +381113281205 www.uni-chem.rs	 United Kingdom Launch Diagnostics Ltd Tel +44(0)1474874426 Fax +44(0)1474872388 enquiries@launchdiagnostics.com
 Denmark Liofilchem Nordics ApS Tel +45 40610954 info@liofilchem.dk	 Malaysia Premier Diagnostics Sdn Bhd Tel +603-5191 3943 Fax +603-5191 3945 info-pd@premierdiagnostics.com.my	 Singapore Premier Diagnostics Pte Ltd Tel +65 6220 3221 Fax +65 6220 9457 pdsingapore8@gmail.com	 United States Liofilchem, Inc. tel 781-902-0312 fax 781-902-0397 orders@liofilchem.us
 Estonia Borsa Eesti OÜ Tel +3725050555 Fax +3726556158 borsa@borsa.ee	 Netherlands EWC Diagnostics B.V. Tel +31 (0)6 15606050 sales@ewcdiagnostics.com	 Slovakia Bio G spol. s r.o. Tel +421245526381 Fax +421245526382 www.biog.sk	 Vietnam Vietlab Co., Ltd. tel +84 2433113236 Fax : +844 33113239 info@vietlab.vn



Liofilchem®

Via Scozia, 64026 Roseto degli Abruzzi (TE) Italy
 www.liofilchem.com

ref. 6553003
 Rev.58
 17 November 2023

The background of the slide is a close-up, slightly blurred image of a microtiter plate. The plate has several wells, each containing a different colored liquid: yellow, orange, red, and pink. The colors transition from light to dark as they move down the plate. The text 'Liofilchem ID-AST systems' is overlaid on the right side of the image.

Liofilchem

ID-AST systems



**Systems for ID and AST
directly from clinical specimens**

page 1



**Integral Systems for ID and AST
from isolated colonies**

page 4



**Systems for ID
from isolated colonies**

page 6



**Systems for AST
from isolated colonies**

page 8

AF Genital System



Count, Identification and Susceptibility Testing of mycoplasmas and of the main urogenital microorganisms directly from Clinical Specimens

Clinical Specimens

Vaginal swab, urethral swab, rectal swab, seminal fluid

Urogenital mycoplasmas

Count/identification

Ureaplasma urealyticum, *Mycoplasma hominis*

Susceptibility Testing

Tetracycline, Pefloxacin, Ofloxacin, Doxycycline,
Erythromycin, Clarithromycin, Minocycline,
Josamycin, Clindamycin

Direct Microbial Identification

Escherichia coli, *Proteus* spp, *Providencia* spp,
Pseudomonas spp, *Gardnerella vaginalis*,
Staphylococcus spp, *Enterococcus* spp (group D),
Streptococcus agalactiae (group B),
Neisseria gonorrhoeae, *Candida* spp,
Trichomonas vaginalis

BENEFITS

- ✓ Complete diagnosis
- ✓ Save time and labor with direct testing
- ✓ Results in 24-48 hours
- ✓ Confirmation with latex agglutination tests
- ✓ Clear and well defined color changes
- ✓ Easy interpretation
- ✓ Automatic reading available

Packaging		ref.
AF Genital System	20 tests	74156
AF Genital System	4 tests	79156

Mycoplasma System *Plus*



Count, Identification and Susceptibility Testing of urogenital mycoplasmas and *Candida spp*/*Trichomonas vaginalis* directly from Clinical Specimens

Clinical Specimens

Vaginal swab, urethral swab, rectal swab, seminal fluid

Urogenital Mycoplasmas

Count/identification

Ureaplasma urealyticum, *Mycoplasma hominis*

Susceptibility Testing (double concentration)

Tetracycline, Pefloxacin, Ofloxacin, Doxycycline,
Erythromycin, Clarithromycin, Minocycline,
Clindamycin, Azithromycin

Direct Microbial Identification (microscopic observation)

Candida spp, *Trichomonas vaginalis*

BENEFITS

- ✓ Complete diagnosis
- ✓ Save time and labor with direct testing
- ✓ Results in 24-48 hours
- ✓ Clear and well defined color changes
- ✓ Easy interpretation
- ✓ Automatic reading available

Packaging		ref.
Mycoplasma System <i>Plus</i>	20 tests	72592
Mycoplasma System <i>Plus</i>	4 tests	79592

Urin System *Chrom*



Count, Identification and Antimicrobial Susceptibility Testing of the main pathogenic microorganisms directly from Urine Specimen

Count and Direct Microbial identification

Escherichia coli, *Proteus* spp, *Providencia* spp,
Citrobacter spp, *Pseudomonas* spp,
Klebsiella spp, *Enterobacter* spp,
Serratia spp, *Enterococcus* spp (group D),
Staphylococcus aureus, *Candida* spp

Antimicrobial Susceptibility Testing

Amikacin, Gentamicin, Tobramycin, Fosfomycin,
Piperacillin-tazobactam, Imipenem, Cefixime,
Cefuroxime, Cefotaxime, Ceftazidime,
Nitrofurantoin, Ampicillin-sulbactam,
Tetracycline, Ciprofloxacin, Levofloxacin,
Vancomycin, Ofloxacin, Co-trimoxazole

BENEFITS

- ✓ Complete diagnosis
- ✓ Save time and labor with direct testing
- ✓ Results in 18-24 hours
- ✓ Clear and well defined color changes
- ✓ Easy interpretation
- ✓ Automatic reading available

Packaging		ref.
Urin System <i>Chrom</i>	20 tests	74161
Urin System <i>Chrom</i>	4 tests	79161

Urin System *Plus*



Count, Identification and Antimicrobial Susceptibility Testing of the main pathogenic microorganisms directly from Urine Specimen

Count and Direct Microbial identification

Escherichia coli, *Proteus* spp, *Providencia* spp,
Citrobacter spp, *Pseudomonas* spp,
Klebsiella spp, *Enterobacter* spp,
Serratia spp, *Enterococcus* spp (group D),
Staphylococcus aureus, *Candida* spp

Antimicrobial Susceptibility Testing

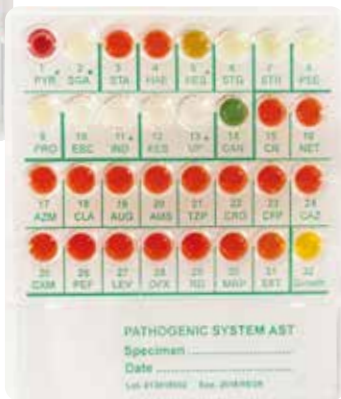
Amikacin, Gentamicin, Tobramycin,
Piperacillin-tazobactam, Fosfomycin,
Cefoperazone, Cefotaxime, Ceftazidime,
Ampicillin-sulbactam, Tetracycline,
Ciprofloxacin, Levofloxacin, Co-trimoxazole,
Amoxicillin-clavulanic acid

BENEFITS

- ✓ Complete diagnosis
- ✓ Save time and labor with direct testing
- ✓ Results in 18-24 hours
- ✓ Clear and well defined color changes
- ✓ Easy interpretation
- ✓ Automatic reading available

Packaging		ref.
Urin System <i>Plus</i>	20 tests	74160
Urin System <i>Plus</i>	4 tests	79160

Pathogenic System AST



Identification and Antimicrobial Susceptibility Testing of the main pathogenic microorganisms directly from Clinical Specimens

Clinical Specimens

Pharyngeal swab, cutaneous swab, auricular swab,
ophthalmic swab, expectorate, exudates and other
clinical specimens

Direct Microbial Identification

Streptococcus pyogenes (group A),
Staphylococcus aureus, *Haemophilus* spp,
Neisseria spp, *Escherichia coli*,
Streptococcus agalactiae (group B),
Klebsiella spp, *Enterobacter* spp, *Serratia* spp,
Proteus spp, *Providencia* spp, *Pseudomonas* spp,
Enterococcus spp (group D), *Candida* spp

Antimicrobial Susceptibility Testing

Gentamicin, Netilmicin, Azithromycin, Clarithromycin, Amoxicillin-clavulanic acid, Ampicillin-sulbactam, Piperacillin-tazobactam, Ceftriaxone, Cefeprozone, Ceftazidime, Cefuroxime, Pefloxacin, Levofloxacin, Ofloxacin, Rifampicin, Meropenem, Co-trimoxazole

BENEFITS

- ✓ Complete diagnosis
- ✓ Save time and labor with direct testing
- ✓ Results in 18-24 hours
- ✓ Confirmation with latex agglutination tests
- ✓ Clear and well defined color changes
- ✓ Easy interpretation

Packaging		ref.
Pathogenic System AST	20 tests	71681
Pathogenic System AST	4 tests	79681

Copro System *Plus*



Identification of the main pathogenic microorganisms directly from Fecal Specimen

Direct Microbial Identification

- Pathogenic microorganisms:
Salmonella spp, *Shigella* spp, *Escherichia coli* O157,
Proteus spp, *Providencia* spp, *Yersinia enterocolitica*,
Campylobacter jejunii, *Pseudomonas* spp,
Candida spp, *Klebsiella* spp, *Serratia* spp

- Evaluation of intestinal bacterial flora: *Escherichia coli*, *Enterobacter* spp

BENEFITS

- ✓ Direct inoculation of fecal specimen
- ✓ Complete diagnosis
- ✓ Easy procedure of use
- ✓ Results in 18-24 hours
- ✓ Confirmation with latex agglutination tests

Packaging		ref.
Copro System <i>Plus</i>	20 tests	71675
Copro System <i>Plus</i>	4 tests	79675

Integral System Enterobacteria



Identification and Antimicrobial Susceptibility Testing of Enterobacteriaceae from isolated colonies

Enterobacteria Identification

Escherichia coli spp, *Shigella* spp,
Pseudomonas spp, *Edwardsiella* spp,
Citrobacter spp, *Salmonella* spp, *Arizona* spp,
Klebsiella spp, *Enterobacter* spp, *Serratia* spp,
Proteus spp, *Morganella* spp, *Providencia* spp,

Antimicrobial Susceptibility Testing

Amikacin, Gentamicin, Tobramycin, Fosfomycin,
Piperacillin-tazobactam, Cefoperazone, Cefotaxime,
Ceftazidime, Ampicillin-sulbactam, Nalidixic acid,
Ciprofloxacin, Levofloxacin, Co-Trimoxazole

BENEFITS

- ✓ Complete diagnosis
- ✓ Cost effective
- ✓ Results in 24 hours
- ✓ Clear and well defined color changes
- ✓ Easy interpretation
- ✓ Automatic reading available

Packaging		ref.
Integral System Enterobacteria	20 tests	71714
Integral System Enterobacteria	4 tests	79714

Integral System Yeasts *Plus*



Identification and Antifungal Susceptibility Testing of the main pathogenic yeasts from isolated colonies

Yeast Identification

Candida albicans, *Candida krusei*,
Candida tropicalis, *Candida glabrata*,
Candida parapsilosis, *Candida dubliniensis*,
Candida kefyr, *Candida lusitanae*,
Candida guilliermondii, *Candida stellatoidea*,
Cryptococcus neoformans, *Cryptococcus albidus*,
Cryptococcus laurentii, *Rhodotorula glutinis*,
Saccharomyces cerevisiae, *Geotrichum candidum*

Antifungal Susceptibility Testing

Nystatin, Amphotericin B, Flucytosine, Econazole,
Ketoconazole, Clotrimazole, Miconazole,
Itraconazole, Voriconazole, Fluconazole

BENEFITS

- ✓ Complete diagnosis
- ✓ Cost effective
- ✓ Results in 48 hours
- ✓ Clear and well defined color changes
- ✓ Easy interpretation
- ✓ Automatic reading available

Packaging		ref.
Integral System Yeasts <i>Plus</i>	20 tests	71822
Integral System Yeasts <i>Plus</i>	4 tests	79822

Enterosystem 18R



Biochemical Identification of Gram-negative, oxidase-negative Enterobacteria

Microorganism Identification

Escherichia spp,
Enterobacter spp,
Klebsiella spp,
Proteus spp,
Salmonella spp,
Citrobacter spp,
Arizona spp,
Yersinia spp,
Serratia spp

BENEFITS

- ✓ Complete identification
- ✓ Cost effective
- ✓ Results in 12-18-24 hours
- ✓ Clear and well defined color changes
- ✓ Easy interpretation
- ✓ Automatic reading available

Packaging		ref.
Enterosystem 18R	20 tests	71618
Enterosystem 18R	4 tests	79618

Listeria System 18R



Biochemical Identification of *Listeria* spp

Microorganism Identification

Listeria monocytogenes,
Listeria innocua,
Listeria ivanovii,
Listeria seeligeri,
Listeria welshimeri,
Listeria grayi sub. *grayi*,
Listeria grayi sub. *murrayi*,
Jonesia denitrificans

BENEFITS

- ✓ Complete identification
- ✓ Cost effective
- ✓ Results in 18-24 hours
- ✓ Clear and well defined color changes
- ✓ Easy interpretation

Packaging		ref.
Listeria System 18R	20 tests	71640
Listeria System 18R	4 tests	79640

Staph System 18R



Biochemical Identification of Staphylococci

Microrganism Identification

Staphylococcus aureus, *Staphylococcus epidermidis*,
Staphylococcus capitis, *Staphylococcus capae*,
Staphylococcus warneri,
Staphylococcus haemoliticus,
Staphylococcus hominis, *Staphylococcus auricularis*,
Staphylococcus saprophyticus,
Staphylococcus chonii var. *human*,
Staphylococcus chonii var. *primate*,
Staphylococcus xylosus, *Staphylococcus simulans*,
Staphylococcus carnosus,
Staphylococcus intermedius,
Staphylococcus hyicus var. *hyicus*,
Staphylococcus hyicus var. *chromogenes*,
Staphylococcus sciuri, *Staphylococcus lentus*,
Staphylococcus gallinarum

BENEFITS

- ✓ Complete identification
- ✓ Cost effective
- ✓ Results in 18-24 hours
- ✓ Clear and well defined color changes
- ✓ Easy interpretation

Packaging		ref.
Staph System 18R	20 tests	71630
Staph System 18R	4 tests	79630

Strepto System 12R



Biochemical Identification of Streptococci

Microrganism Identification

Streptococcus pyogenes, *Streptococcus agalactiae*,
Streptococcus epidermidis,
Streptococcus dysgalactiae, *Streptococcus equi*,
Enterococcus faecalis, *Enterococcus faecium*,
Enterococcus casseliflavus, *Enterococcus avium*,
Streptococcus durans, *Streptococcus bovis* I,
Streptococcus bovis II, *Streptococcus equinus*,
Streptococcus milleri I, *Streptococcus milleri* II,
Streptococcus sanguis I, *Streptococcus sanguis* II,
Streptococcus salivarius, *Streptococcus mitis*,
Streptococcus viridans, *Streptococcus pneumoniae*,
Streptococcus mutans, *Streptococcus lactis*,
Streptococcus suis I, *Streptococcus suis* II,
Streptococcus uberis, *Streptococcus acidominimus*

BENEFITS

- ✓ Complete identification
- ✓ Cost effective
- ✓ Results in 18-24 hours
- ✓ Clear and well defined color changes
- ✓ Easy interpretation

Packaging		ref.
Strepto System 12R	40 tests	72560
Strepto System 12R	8 tests	79560

SensiTest Gram-positive



System for Antimicrobial Susceptibility Testing of Gram-positive bacteria

Antimicrobial Susceptibility Testing (single concentration per antibiotic)

Gentamicin, Netilmicin, Tobramycin,
Amoxicillin-clavulanic acid,
Ampicillin-sulbactam, Piperacillin, Cefaclor,
Cefixime, Cefonicid, Ceftazidime, Ceftriaxone,
Cefuroxime, Ciprofloxacin, Levofloxacin,
Pefloxacin, Azithromycin, Clarithromycin,
Erythromycin, Miokamycin, Roxitromycin,
Fosfomycin, Rifampicin, Co-trimoxazole

BENEFITS

- ✓ Cost effective
- ✓ Results in 18-24 hours
- ✓ Clear and well defined color changes
- ✓ Easy interpretation
- ✓ Automatic reading available

Packaging		ref.
SensiTest Gram-positive	20 tests	76020
SensiTest Gram-positive	4 tests	79020

SensiTest Gram-negative



System for Antimicrobial Susceptibility Testing of Gram-negative bacteria

Antimicrobial Susceptibility Testing (single concentration per antibiotic)

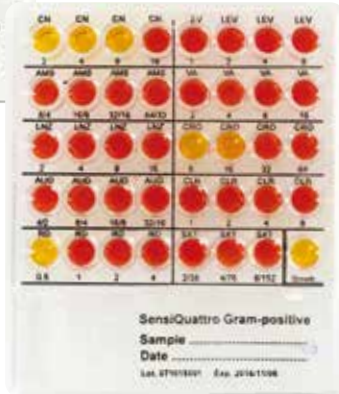
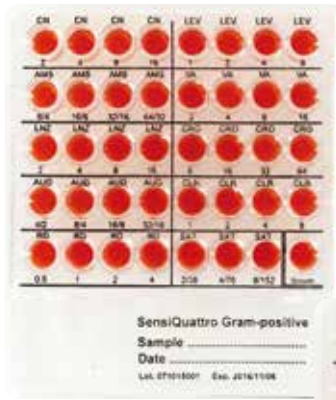
Amikacin, Gentamicin, Tobramycin,
Ampicillin-sulbactam;
Amoxicillin-clavulanic acid,
Mezlocillin, Piperacillin-tazobactam,
Ticarcillin-clavulanic acid, Fosfomycin,
Nitrofurantoin, Cefoperazone, Cefotaxime,
Ceftazidime, Ceftriaxone, Cefuroxime,
Nalidixic acid, Lomefloxacin, Ciprofloxacin,
Levofloxacin, Pefloxacin, Teicoplanin,
Aztreonam, Co-trimoxazole

BENEFITS

- ✓ Cost effective
- ✓ Results in 18-24 hours
- ✓ Clear and well defined color changes
- ✓ Easy interpretation
- ✓ Automatic reading available

Packaging		ref.
SensiTest Gram-negative	20 tests	76010
SensiTest Gram-negative	4 tests	79010

SensiQuattro Gram-positive



System for Antimicrobial Susceptibility Testing of Gram-positive bacteria

Antimicrobial Susceptibility Testing (four concentrations per antibiotic)

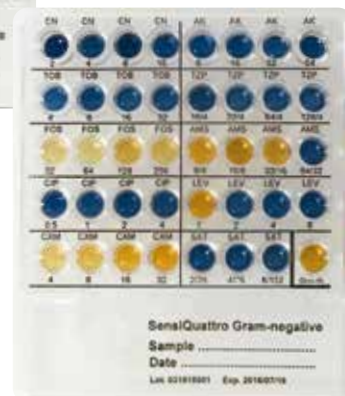
Gentamicin, Levofloxacin, Ampicillin-sulbactam, Vancomycin, Linezolid, Ceftriaxone, Amoxicillin-clavulanic acid, Clarithromycin, Rifampicin, Co-trimoxazole

Packaging		ref.
SensiQuattro Gram-positive	20 tests	76032
SensiQuattro Gram-positive	4 tests	79032

BENEFITS

- ✓ Cost effective
- ✓ Results in 18-24 hours
- ✓ Clear and well defined color changes
- ✓ Easy interpretation
- ✓ Automatic reading available

SensiQuattro Gram-negative



System for Antimicrobial Susceptibility Testing of Gram-negative bacteria

Antimicrobial Susceptibility Testing (four concentrations per antibiotic)

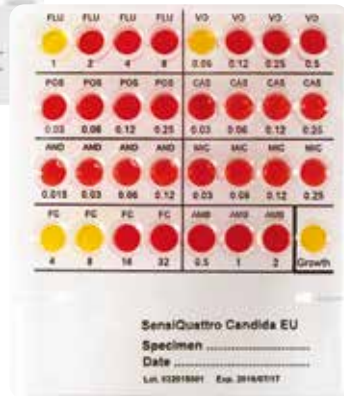
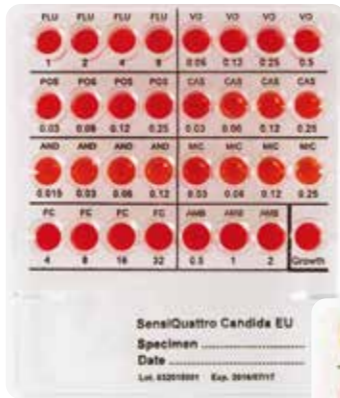
Gentamicin, Amikacin, Tobramycin, Piperacillin-tazobactam, Fosfomycin, Ampicillin-sulbactam, Ciprofloxacin, Levofloxacin, Cefuroxime, Co-trimoxazole

Packaging		ref.
SensiQuattro Gram-negative	20 tests	76031
SensiQuattro Gram-negative	4 tests	79031

BENEFITS

- ✓ Cost effective
- ✓ Results in 18-24 hours
- ✓ Clear and well defined color changes
- ✓ Easy interpretation
- ✓ Automatic reading available

SensiQuattro Candida EU



System for Antifungal Susceptibility Testing of *Candida* spp

Antifungal Susceptibility Testing (four concentrations per antibiotic)

Fluconazole, Anidulafungin,
Voriconazole, Micafungin,
Posaconazole, Flucytosine,
Caspofungin, Amphotericin B

Packaging		ref.
SensiQuattro Candida EU	20 tests	76033
SensiQuattro Candida EU	4 tests	79033

BENEFITS

- ✓ Cost effective
- ✓ Results in 24-48 hours
- ✓ Clear and well defined color changes
- ✓ Easy interpretation
- ✓ Automatic reading available

Liofilchem®
Microbiology Products
Est. 1983

Roseto degli Abruzzi - Italy
Tel. : +39 0858930745
Fax : +39 0858930330
www.liofilchem.net

ref. 6550716
Rev. 0 - 4.11.2015
© Liofilchem 2015
printed in Italy

SensiQuattro CANDIDA EU

Panel for determining the susceptibility testing of *Candida* spp. with antimycotic agents.

Ref. 76033 - 79033

Contents	Page
Italiano	1
English	4

Code F00043
Rev.2 / 13.12.2012



LIOFILCHEM® s.r.l.

Via Scozia zona ind.le, 64026 Roseto degli Abruzzi (Te) Italy
Tel. +39 0858930745 Fax +39 0858930330 www.liofilchem.net liofilchem@liofilchem.net





SensiQuattro Candida EU

ITALIANO

Pannello per la determinazione della suscettibilità agli antimicotici di *Candida* spp.

DESCRIZIONE

SensiQuattro Candida EU è un pannello a 32 pozzetti contenente 8 antimicotici essiccati in quattro concentrazioni scalari per raddoppio.

SensiQuattro Candida EU permette di testare la suscettibilità di *Candida* spp. verso agenti antimicotici. I suoi risultati permettono di definire sensibilità o resistenza in riferimento ai criteri interpretativi definiti dall'EUCAST (The European Committee on Antimicrobial Susceptibility Testing).

CONTENUTO DELLE CONFEZIONI

La confezione contiene:

Ref. 76033	20 pannelli SensiQuattro CANDIDA EU	20 provette di <i>Physiological Solution</i> (6 ml/provetta)
Ref. 79033	4 pannelli SensiQuattro CANDIDA EU	4 provette di <i>Physiological Solution</i> (6 ml/provetta)
	1 Foglio istruzioni	1 Modulo Raccolta Dati

PRODOTTI NECESSARI NON CONTENUTI

- Materiale vario per laboratorio di microbiologia.
- Pipetta multicanale 50-300 µl (ref.96759).
- Puntali per pipetta multicanale (1000 puntali) (ref.96758).
- Vaschetta per soluzione inoculo (ref. 96761).
- Mc Farland 0.5 Barium Sulphate Standard (ref.80400).

CONFIGURAZIONE

POZZETTO	ANTIMICOTICO	CONCENTRAZIONE µg/ml	POZZETTO	ANTIMICOTICO	CONCENTRAZIONE µg/ml
FLU	Fluconazolo	1	AND	Anidulafungina	0.015
FLU	Fluconazolo	2	AND	Anidulafungina	0.03
FLU	Fluconazolo	4	AND	Anidulafungina	0.06
FLU	Fluconazolo	8	AND	Anidulafungina	0.12
VO	Voriconazolo	0.06	MIC	Micafungina	0.03
VO	Voriconazolo	0.12	MIC	Micafungina	0.06
VO	Voriconazolo	0.25	MIC	Micafungina	0.12
VO	Voriconazolo	0.5	MIC	Micafungina	0.25
POS	Posaconazolo	0.03	FC	Flucitosina	4
POS	Posaconazolo	0.06	FC	Flucitosina	8
POS	Posaconazolo	0.12	FC	Flucitosina	16
POS	Posaconazolo	0.25	FC	Flucitosina	32
CAS	Caspofungina	0.03	AMB	Amfotericina B	0.5
CAS	Caspofungina	0.06	AMB	Amfotericina B	1
CAS	Caspofungina	0.12	AMB	Amfotericina B	2
CAS	Caspofungina	0.25	Growth	Controllo di crescita	

Physiological Solution (g/l): Sodio Cloruro **9 g**; Acqua Distillata **1000 ml**; pH **6.8 ± 0.2**

PRINCIPIO DEL METODO

Il pannello viene inoculato e reidratato con una sospensione microbica standardizzata e incubato a 34.5-35.5 °C per 24 ± 2 h.

Dopo l'incubazione il test di suscettibilità viene determinato in base alla crescita o all'inibizione del microrganismo nel terreno contenente l'antimicotico e un indicatore di crescita.

Il pozzetto **Growth** non contiene antimicotici, ma solo il terreno colturale e l'indicatore e serve come controllo della crescita microbica.

RACCOLTA E CONSERVAZIONE DEI CAMPIONI

Le colonie da sottoporre al test di suscettibilità, devono essere ben isolate e riprese da un terreno colturale non selettivo, utilizzato per la crescita del microrganismo in esame.

PROCEDURA DEL TEST

1. Prelevare un pannello **SensiQuattro Candida EU** dal suo involucro e portarlo a temperatura ambiente.
2. Annotare nome, data e provenienza del microrganismo sul pannello.
3. Prelevare una o più colonie microbiche e sospenderle in una provetta di *Physiological Solution* contenuta nel kit fino ad ottenere una torbidità pari allo Standard McFarland 0.5 (ref. 80400).
4. Svuotare la sospensione microbica nella Vaschetta inoculo (ref.96761).
5. Utilizzando una pipetta multicanale con otto puntali sterili o una pipetta a singolo puntale, distribuire 0.15 ml di sospensione microbica in ciascun pozzetto del pannello.
6. Coprire il pannello con l'apposito coperchio e incubare a 34.5-35.5 °C per 24±2 ore.

INTERPRETAZIONE DEI RISULTATI

Al termine dell'incubazione osservare il viraggio di colore dei pozzetti ed interpretare i risultati servendosi della tabella n°2.

Il pozzetto di controllo **Growth** deve risultare di colore giallo/arancio. Nel caso in cui risultasse di colore rosso, è necessario verificare la vitalità delle colonie prelevate e ripetere l'esame utilizzando un nuovo pannello ed una coltura microbica di crescita recente.

I valori di suscettibilità devono essere rapportati ai criteri interpretativi stabiliti dall'EUCAST ⁽¹⁾.

Attraverso questo confronto, i risultati ottenuti possono essere tradotti nelle categorie di interpretazione: S (sensibile) o R (resistente).

Trascrivere i dati ottenuti nel Modulo raccolta dati contenuto nel kit.

Tabella n°2

COLORE POZZETTO	CRESCITA MICROBICA
Rosso	Inibita
Giallo / Arancio	Buona

CONTROLLO QUALITÀ

Ogni lotto di **SensiQuattro Candida EU** viene sottoposto al controllo di qualità utilizzando i seguenti ceppi microbici di riferimento:

<i>Candida krusei</i>	ATCC 6258 ³⁾
<i>Candida parapsilosis</i>	ATCC 22019 ³⁾
<i>Candida albicans</i>	ATCC 10231
<i>Candida albicans</i>	ATCC 90028
<i>Candida tropicalis</i>	ATCC 750

FATTORI CHE POSSONO INVALIDARE I RISULTATI

- Uso di colture miste.
- Imprecisa standardizzazione dell'inoculo.
- Uso di soluzioni di inoculo diverse da quelle suggerite.
- Uso di prodotti scaduti.
- Temperatura e tempi di incubazione diversi da quelli suggeriti.
- Mancata crescita nel pozzetto **Growth**.

LIMITI ED AVVERTENZE

I risultati ottenuti con il pannello **SensiQuattro Candida EU** devono essere interpretati da un microbiologo clinico e da un medico prima di procedere al trattamento terapeutico del paziente.

PRECAUZIONI

Il prodotto, **SensiQuattro Candida EU**, non è classificato come pericoloso ai sensi della legislazione vigente né contiene sostanze nocive in concentrazioni $\geq 1\%$.

SensiQuattro Candida EU è un dispositivo monouso da usare solo per uso diagnostico *in vitro*, è destinato ad un ambito professionale e deve essere usato in laboratorio da operatori adeguatamente addestrati, con metodi approvati di asepsi e di sicurezza nei confronti degli agenti patogeni.

CONDIZIONI DI CONSERVAZIONE E TRASPORTO

Il prodotto deve essere conservato a 2-8°C al riparo dalla luce, fino alla data di scadenza indicata in etichetta. Tuttavia studi di stabilità hanno dimostrato che la conservazione o il trasporto a 18-25°C per 4 giorni, oppure a 35-39°C per 48 ore, non alterano in nessun modo l'efficienza del prodotto. Eliminare se vi sono segni evidenti di deterioramento o contaminazione.

ELIMINAZIONE DEL MATERIALE USATO

Dopo l'utilizzazione, il pannello **SensiQuattro Candida EU** ed il materiale venuto a contatto con il campione deve essere decontaminati e smaltiti in accordo con le tecniche in uso in laboratorio per la decontaminazione e lo smaltimento del materiale potenzialmente infetto.

BIBLIOGRAFIA

1. Antimicrobials for Candida infections - EUCAST clinical MIC breakpoints 2011-04-27 (v. 3.0).
2. EUCAST Definitive Document Edef 7.1: method for the determination of broth dilution MICs of antifungal agents for fermentative yeasts. Subcommittee on Antifungal Susceptibility testing (AFST) of the ESCMID European Committee for Antimicrobial Susceptibility Testing (EUCAST). *Clin Microbiol infect* 2008; 14:398-405.
3. Multicentre determination of quality control strains and quality control ranges for antifungal susceptibility testing of yeasts and filamentous fungi using the methods of the Antifungal Susceptibility Testing Subcommittee of the European Committee on Antimicrobial Susceptibility Testing (AFST-EUCAST). M.Cuenca-Estrella et al. *Clin Microbiol infect* 2007; 13:1018-1022.

PRESENTAZIONE

Prodotto	Ref.	Confezione
SensiQuattro Candida EU	76033	20 test
SensiQuattro Candida EU	79033	4 test

TABELLA DEI SIMBOLI

IVD Dispositivo medico diagnostico <i>in vitro</i>	 Non riutilizzare	 Fabbricante	 Contenuto della confezione	 Limiti di temperatura
REF Numero di catalogo	 Fragile, maneggiare con cura	 Utilizzare entro	 Attenzione, vedere le istruzioni per l'uso	LOT Codice del lotto





SensiQuattro Candida EU

ENGLISH

Panel for determining the susceptibility testing of *Candida* spp. with antimycotic agents.

DESCRIPTION

SensiQuattro Candida EU is a 32-well panel containing 8 desiccated antimycotics at four serial concentrations by doubling.

SensiQuattro Candida EU allows to test the susceptibility of *Candida* spp. to antimycotic agents. The results when correlated with EUCAST (The European Committee on Antimicrobial Susceptibility Testing) breakpoints permit accurate determination of the microorganism as Sensitive (S) or Resistant (R) to antimycotics.

KIT CONTENT

The package contains:

Ref. 76033	20 panels SensiQuattro CANDIDA EU	20 tubes of <i>Physiological Solution</i> (6 ml/tube)
Ref. 79033	4 panels SensiQuattro CANDIDA EU	4 panels of <i>Physiological Solution</i> (6 ml/tube)
1 Instruction sheet		1 Results Data Form

ITEMS NECESSARY BUT NOT INCLUDED IN THE KIT

- Multi-channel pipette 50-300 µl (ref.96759)
- Tips for multi-channel pipette (1000 tips) (ref.96758)
- Solution reservoir for multichannel pipette (ref. 96761)
- Mc Farland 0.5 Barium Sulphate standard (ref.80400)

CONFIGURATION

WELL	ANTIMYCOTIC	CONCENTRATION µg/ml	WELL	ANTIMYCOTIC	CONCENTRATION µg/ml
FLU	Fluconazole	1	AND	Anidulafungin	0.015
FLU	Fluconazole	2	AND	Anidulafungin	0.03
FLU	Fluconazole	4	AND	Anidulafungin	0.06
FLU	Fluconazole	8	AND	Anidulafungin	0.12
VO	Voriconazole	0.06	MIC	Micafungin	0.03
VO	Voriconazole	0.12	MIC	Micafungin	0.06
VO	Voriconazole	0.25	MIC	Micafungin	0.12
VO	Voriconazole	0.5	MIC	Micafungin	0.25
POS	Posaconazole	0.03	FC	Flucytosin	4
POS	Posaconazole	0.06	FC	Flucytosin	8
POS	Posaconazole	0.12	FC	Flucytosin	16
POS	Posaconazole	0.25	FC	Flucytosin	32
CAS	Caspofungin	0.03	AMB	Amphotericin B	0.5
CAS	Caspofungin	0.06	AMB	Amphotericin B	1
CAS	Caspofungina	0.12	AMB	Amphotericin B	2
CAS	Caspofungin	0.25	Growth	Growth control	

Physiological Solution (g\l): Sodium Chloride **9 g**; Distilled Water **1000 ml**; pH **6.8 ± 0.2**

PRINCIPLE OF THE METHOD

The panel is inoculated and rehydrated with a standardised microbial suspension and incubated at 34.5-35.5 °C for 24±2 hours.

After incubation, the susceptibility testing of *Candida* spp. to antimycotic agents is assessed on the basis of growth or inhibition of the microorganisms in media containing antimycotic and a growth indicator.

The **Growth** well does not contain antimycotics; it contains only the culture medium and the indicator.

COLLECTION AND STORAGE OF THE SAMPLES

The *Candida* spp. colonies to be subjected to the susceptibility testing with **SensiQuattro Candida EU** must be taken from a selective or non-selective culture medium used for isolation of the microorganism.

TEST PROCEDURE

1. Take a system **SensiQuattro Candida EU** from its wrapper and let it reach room temperature.
2. Write down name, date and laboratory ID number of the microorganism on the panel.
3. Take several morphologically similar, well-isolated, colonies and suspend them in a tube of Physiological Solution from the kit and obtain a suspension of opacity equivalent to the standard 0.5 McFarland (ref. 80400).
4. Drain the bacterial suspension in the solution reservoir for multi-channel pipetting (ref. 96761).
5. Dispense 0.15 ml of bacterial suspension into each well of the system using an eight tips multichannel pipette or a single tip pipette.
6. Cover the system with the lid provided and incubate at 34.5-35.5 °C for 24±2 hours.

INTERPRETATION OF THE RESULTS

After incubation, note the color changes of the wells and interpret the results using Table no. 2.

The **Growth** well must turn yellow/orange. If its color remains red, the vitality of the inoculated colonies must be checked and the test must be repeated with a new panel and a recently grown microbial culture.

Susceptibility testing results provided by **SensiQuattro Candida EU** must be evaluated according to EUCAST clinical breakpoints¹⁾ and the microorganisms can be interpreted as S (Sensitive) or R (Resistant).

Note results on the Test Result Form (copy as many forms as necessary).

Table no. 2

WELL COLOUR	MICROBIAL GROWTH
Red	Inhibited
Yellow / Orange	Good

QUALITY CONTROL

Every batch of **SensiQuattro Candida EU** is subjected to quality control using the following reference microorganisms:

<i>Candida krusei</i>	ATCC 6258 ³⁾
<i>Candida parapsilosis</i>	ATCC 22019 ³⁾
<i>Candida albicans</i>	ATCC 10231
<i>Candida albicans</i>	ATCC 90028
<i>Candida tropicalis</i>	ATCC 750

FACTORS THAT MAY INVALIDATE THE RESULTS

- Mixed cultures.
- Inaccurate standardisation of the inoculum.
- Use of inoculum solutions other than those suggested.
- Expired (out-dated) panels.
- Temperature and times for incubation other than those suggested.
- Lack of growth in the **Growth** well.

LIMITS AND FURTHER ADVICE

The results obtained with the system **SensiQuattro Candida EU** must be interpreted by a clinical microbiologist and physician before proceeding to therapeutic treatment of the patient.

PRECAUTIONS

The product, **SensiQuattro Candida EU**, is not classified as hazardous under current legislation, however see the safety data sheet for a correct use.

SensiQuattro Candida EU is a disposable device to be used only for diagnostic use *in vitro*.

It must be used in the laboratory by appropriately trained personnel, using approved aseptic and safety methods for handling pathogenic agents.

STORAGE AND TRANSPORT CONDITIONS

2-8°C away from light, until the expiry date on the label. However, our stability studies have shown that the storage or transport at 18-25°C for 4 days, or at 35-39°C for 48 hours, do not alter in any way the performance of the product. Discard the panel if there are visible signs of deterioration.

DISPOSAL OF USED MATERIAL

After use, **SensiQuattro Candida EU** and material that has come into contact with the sample must be decontaminated and disposed of in accordance with guidelines used in the laboratory for decontamination and disposal of potentially infected material.

REFERENCES

1. Antimicrobials for Candida infections - EUCAST clinical MIC breakpoints 2011-04-27 (v. 3.0).
2. EUCAST Definitive Document Edef 7.1: method for the determination of broth dilution MICs of antifungal agents for fermentative yeasts. Subcommittee on Antifungal Susceptibility testing (AFST) of the ESCMID European Committee for Antimicrobial Susceptibility Testing (EUCAST). *Clin Microbiol infect* 2008; 14:398-405.
3. Multicentre determination of quality control strains and quality control ranges for antifungal susceptibility testing of yeasts and filamentous fungi using the methods of the Antifungal Susceptibility Testing Subcommittee of the European Committee on Antimicrobial Susceptibility Testing (AFST-EUCAST). M.Cuenca-Estrella et al. *Clin Microbiol infect* 2007; 13:1018-1022.

PRESENTATION

Product	Ref.	Packaging
SensiQuattro Candida EU	76033	20 tests
SensiQuattro Candida EU	79033	4 tests

TABLE OF SYMBOLS

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

