

# MICROBIOLOGY

Smart identification and  
antibiotic susceptibility  
determination system



MIKROLATEST MIC, BP, ID  
ERBASCAN, ERBAEXPERT  
EBAFILL, ERBADIP  
OTHER ACCESSORIES



Erba Lachema s. r. o., a traditional producer and supplier of diagnostic products for clinical laboratories, offers an advanced range of products for microbial identification and antibiotic susceptibility determination.

## Contents:

### MIKROLATEST® MIC

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High quality system for antibiotic susceptibility testing based on minimal inhibitory concentration determination designed for visual or automated reading.

### MIKROLATEST® BP

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Economical system for antibiotic susceptibility testing based on EUCAST breakpoint determination designed for visual or automated reading.

### MIKROLATEST® ID

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User-friendly kits for microbial identification using traditional biochemical tests designed for visual or automated reading.

### ErbaExpert software

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Smart expert system for computer aided evaluation of MIKROLATEST ID, MIKROLATEST BP and MIKROLATEST MIC tests and data management. System for susceptibility interpretation according to EUCAST and CLSI guidelines.

### ErbaScan reader

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Twelve-channel photometer for automated reading and evaluation of MIKROLATEST MIC, MIKROLATEST BP and MIKROLATEST ID.

### Accessories

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Additional tools intended to ease the use of MIKROLATEST® products.

## Minimum inhibitory concentration AST kits

### Principle of the method:

This method allows quantitative determination of minimum inhibitory concentration of antibiotics in preselected panels.

Testing is based on broth microdilution method that measures quantitatively in vitro activity of an antimicrobial agent against a bacterial isolate. The minimum inhibitory concentration (MIC) is determined from twofold dilution series (8 concentrations) as the lowest concentration of an antimicrobial agent that prevents visible growth of a microorganism.

Determination of MIC enables interpretation into three categories: sensitive, intermediate or resistant according to the relevant interpretation system (EUCAST: [www.eucast.org](http://www.eucast.org), or CLSI: [www.clsi.org](http://www.clsi.org))

These categories are characterised by EUCAST\* as follows:

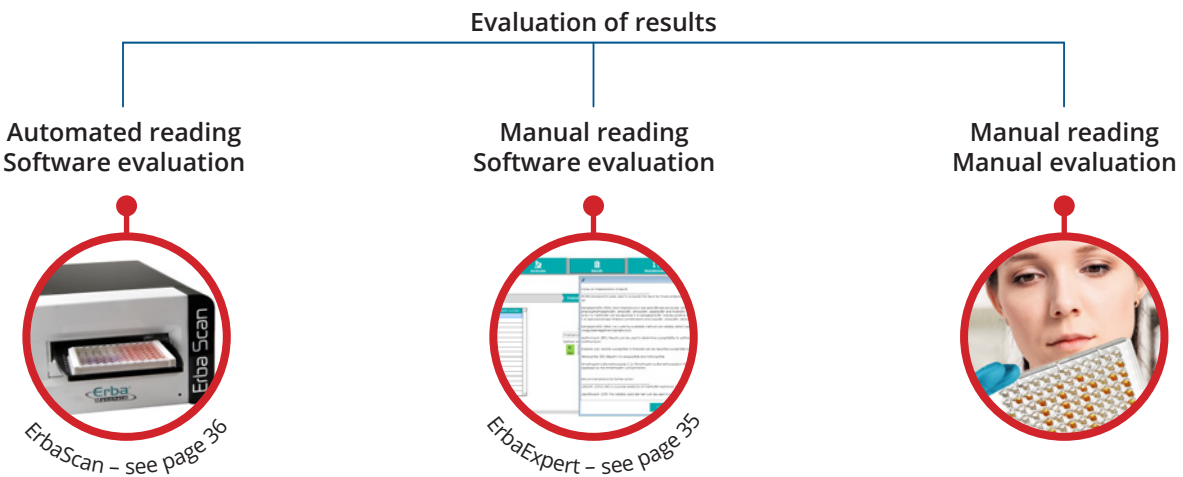
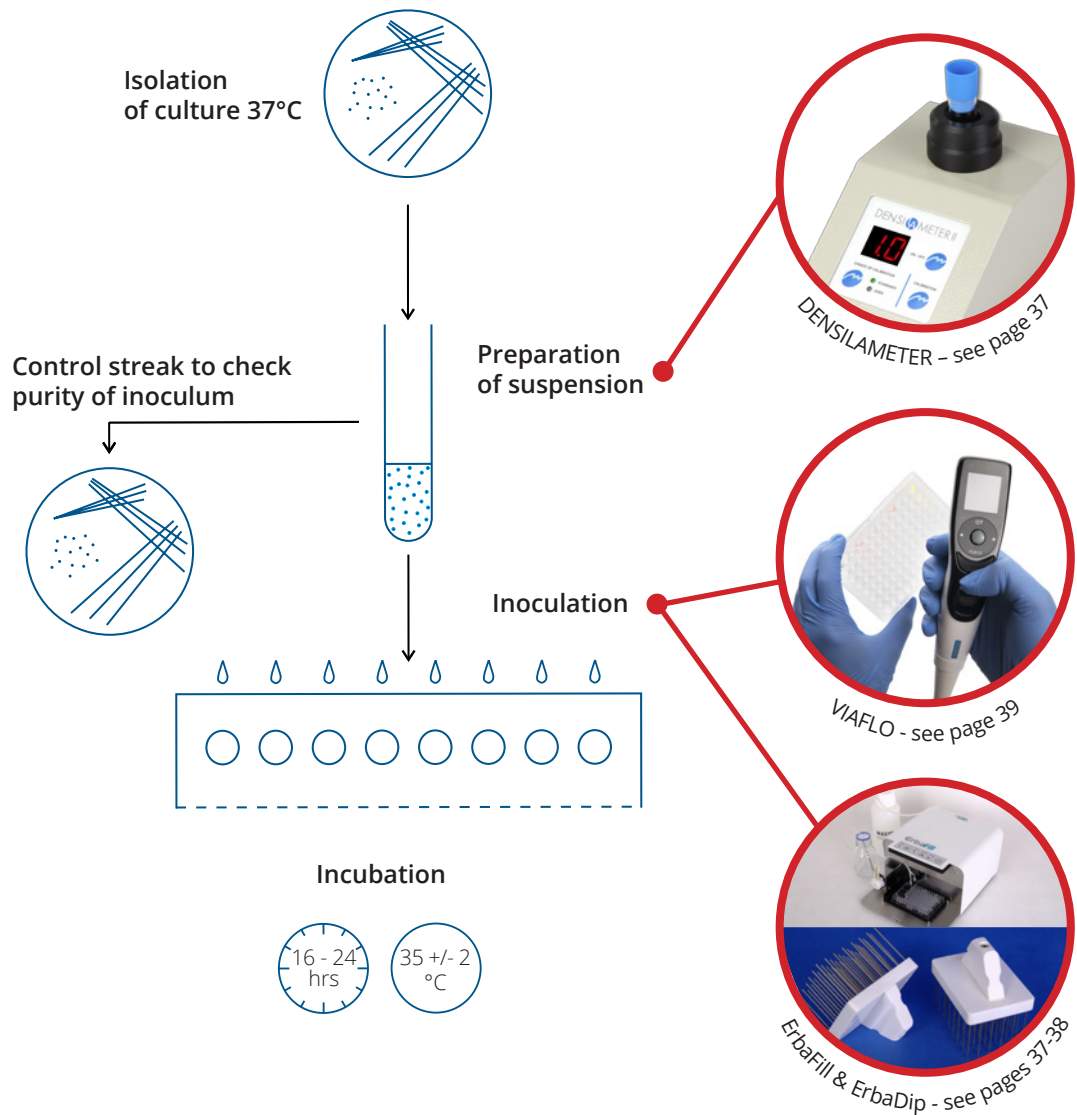
- Microorganism is defined as susceptible by a level of antimicrobial activity associated with a high probability of therapeutic success.
- Microorganism is defined as intermediate by a level of antimicrobial activity associated with uncertain therapeutic effect.
- Microorganism is defined as resistant by a level of antimicrobial activity associated with a high probability of therapeutic failure.

In each test system there is a growth control.

\* [www.eucast.org](http://www.eucast.org)



## Working procedure



## Available panels

The following predefined panels are available:

MIC G-I, MIC G-II, MIC URINE, MIC NEFERM, MIC STAPHY, MIC G+

### MIC G-I

The kit is designed to test antimicrobial susceptibility of bacteria from *Enterobacteriaceae* family.

AMP	AMS	CFZ	CXM	AZT	GEN	AMK	COL	T/S	CIP	CMP	TET
ampicillin	ampicillin/ sulbactam	cefazolin	cefuroxim	aztreonam	gentamicin	amikacin	colistin	trimethoprim/ sulfamethoxazole	ciprofloxacin	chloramphenicol	tetracycline
128	128/64	16	64	16	32	64	16	4/76	8	32	32
64	64/32	8	32	8	16	32	8	2/38	4	16	16
32	32/16	4	16	4	8	16	4	1/19	2	8	8
16	16/8	2	8	2	4	8	2	0.5/9.5	1	4	4
8	8/4	1	4	1	2	4	1	0.25/4.75	0.5	2	2
4	4/2	0.5	2	0.5	1	2	0.5	0.12/2.38	0.25	1	1
2	2/1	0.25	1	0.25	0.5	1	0.25	0.06/1.19	0.12	0.5	0.5
1	1/0.5	0.12	0.5	0.12	0.25	0.5	0.12	0.03/0.6	0.06	0.25	control

### MIC G-II

This kit is designed to test susceptibility to antibiotics used in treatment of serious infections caused by bacteria from *Enterobacteriaceae* family especially in hospitalized patients.

PIP	PIT	CTX	CAZ	CPZ	CPS	CEP	MER	ERT	TGC	NET	TOB
piperacillin	piperacillin/ tazobactam	cefotaxime	ceftazidime	cefoperazone	cefoperazone/ sulbactam	cefepime	meropenem	ertapenem	tigecycline	netilmicin	tobramycin
128	128/4	8	16	64	64/32	16	16	2	8	16	8
64	64/4	4	8	32	32/16	8	8	1	4	8	4
32	32/4	2	4	16	16/8	4	4	0.5	2	4	2
16	16/4	1	2	8	8/4	2	2	0.25	1	2	1
8	8/4	0.5	1	4	4/2	1	1	0.12	0.5	1	0.5
4	4/4	0.25	0.5	2	2/1	0.5	0.5	0.06	0.25	0.5	0.25
2	2/4	0.12	0.25	1	1/0.5	0.25	0.25	0.03	0.12	0.25	0.12
1	1/4	0.06	0.12	0.5	0.5/0.25	0.12	0.12	0.015	0.06	0.12	control

### MIC URINE

The kit is designed to test antimicrobial susceptibility of bacteria isolated from urine and urinary tract (mainly *Enterobacteriaceae* family).

AMP	AMS	CFZ	CXM	MER	GEN	AMK	T/S	NOR	CIP	TGC	NFT
ampicillin	ampicillin/ sulbactam	cefazolin	cefuroxim	meropenem	gentamicin	amikacin	trimethoprim/ sulfamethoxazole	norfloxacin	ciprofloxacin	tigecycline	nitrofurantoin
128	128/64	16	64	16	32	64	4/76	8	8	8	128
64	64/32	8	32	8	16	32	2/38	4	4	4	64
32	32/16	4	16	4	8	16	1/19	2	2	2	32
16	16/8	2	8	2	4	8	0.5/9.5	1	1	1	16
8	8/4	1	4	1	2	4	0.25/4.75	0.5	0.5	0.5	8
4	4/2	0.5	2	0.5	1	2	0.12/2.38	0.25	0.25	0.25	4
2	2/1	0.25	1	0.25	0.5	1	0.06/1.19	0.12	0.12	0.12	2
1	1/0.5	0.12	0.5	0.12	0.25	0.5	0.03/0.6	0.06	0.06	0.06	control

### MIKRO NEFERM

The kit is designed to test antimicrobial susceptibility of Gram-negative rods.

AMP	PIP	PIT	CAZ	AZT	MER	GEN	AMK	COL	CIP	TGC	T/S
ampicillin/ sulbactam	piperacillin	piperacillin/ tazobactam	ceftazidime	aztreonam	meropenem	gentamicin	amikacin	colistin	ciprofloxacin	tigecycline	trimethoprim/ sulfamethoxazole
128/64	128	128/4	16	16	16	32	64	16	8	8	4/76
64/32	64	64/4	8	8	8	16	32	8	4	4	2/38
32/16	32	32/4	4	4	4	8	16	4	2	2	1/19
16/8	16	16/4	2	2	2	4	8	2	1	1	0.5/9.5
8/4	8	8/4	1	1	1	2	4	1	0.5	0.5	0.25/4.75
4/2	4	4/4	0.5	0.5	0.5	1	2	0.5	0.25	0.25	0.12/2.38
2/1	2	2/4	0.25	0.25	0.25	0.5	1	0.25	0.12	0.12	0.06/1.19
1/0.5	1	1/4	0.12	0.12	0.12	0.25	0.5	0.12	0.06	0.06	control

### MIKRO STAPHY

The kit is designed to test antimicrobial susceptibility of staphylococci.

PEN	COX	ERY	CLI	LIZ	CMP	TET	CIP	T/S	GEN	VAN	NFT
penicillin	cefoxitin	erythromycin	clindamycin	linezolid	chloramphenicol	tetracycline	ciprofloxacin	trimethoprim/ sulfamethoxazol	gentamicin	vancomycin	nitrofurantoin
4	16	8	4	16	32	8	8	4/76	16	16	128
2	8	4	2	8	16	4	4	2/38	8	8	64
1	4	2	1	4	8	2	2	1/19	4	4	32
0.5	2	1	0.5	2	4	1	1	0.5/9.5	2	2	16
0.25	1	0.5	0.25	1	2	0.5	0.5	0.25/4.75	1	1	8
0.12	0.5	0.25	0.12	0.5	1	0.25	0.25	0.12/2.38	0.5	0.5	4
0.06	0.25	0.12	0.06	0.25	0.5	0.12	0.12	0.06/1.19	0.25	0.25	2
0.03	0.12	0.06	0.03	0.12	0.25	0.06	0.06	0.03/0.6	0.12	0.12	control

### MIKRO G+

The kit is designed to test antimicrobial susceptibility of Gram-positive bacteria: streptococci A,B,C, G, *Streptococcus pneumoniae* and enterococci.

PEN	AMP	ERY	CLI	LIZ	CMP	TET	T/S	GEN	VAN	TEC	NFT
penicillin	ampicillin	erythromycin	clindamycin	linezolid	chloramphenicol	tetracycline	trimethoprim/ sulfamethoxazol	gentamicin	vancomycin	teicoplanin	nitrofurantoin
8	16	8	16	16	32	32	4/76	128	16	16	128
4	8	4	8	8	16	16	2/38	16	8	8	64
2	4	2	4	4	8	8	1/19	8	4	4	32
1	2	1	2	2	4	4	0.5/9.5	4	2	2	16
0.5	1	0.5	1	1	2	2	0.25/4.75	2	1	1	8
0.25	0.5	0.25	0.5	0.5	1	1	0.12/2.38	1	0.5	0.5	4
0.12	0.25	0.12	0.25	0.25	0.5	0.5	0.06/1.19	0.5	0.25	0.25	2
0.06	0.12	0.06	0.12	0.12	0.25	0.25	0.03/0.6	0.25	0.12	0.12	control

Type	Cat. nr.	Product	Nr. of exam.	Reagent req.	Susp. m. req.
Kits	MLT00044	MIC G-I	10	no	yes
	MLT00045	MIC G-II	10	no	yes
	MLT00048	MIC URINE	10	no	yes
	MLT00046	MIC NEFERM	10	no	yes
	MLT00047	MIC STAPHY	10	no	yes
	MLT00043	MIC G+	10	no	yes
Other req. items (not included)	MLT00070	Suspension medium for MIC	30	-	-
	MLT00071	Suspension medium for MIC G+	30	-	-

## Available single strips

The following single antibiotic strips allow customer-defined MIC combinations:

AMK	AMP	AMS	CEP	CAZ	CXM	CIP	CLI	COL	ERT	GEN
amikacin	ampicillin	ampicillin/ sulbactam	cefepime	ceftazidime	cefuroxime	ciprofloxacin	clindamycin	colistin	ertapenem	gentamicin
64	64	64/32	32	32	64	4	4	16	4	32
32	32	32/16	16	16	32	2	2	8	2	16
16	16	16/8	8	8	16	1	1	4	1	8
8	8	08.IV	4	4	8	0,5	0,5	2	0,5	4
4	4	4/2	2	2	4	0,25	0,25	1	0,25	2
2	2	2/1	1	1	2	0,12	0,12	0,5	0,12	1
1	1	1/0,5	0,5	0,5	1	0,06	0,06	0,25	0,06	0,5
Growth Control	Growth Control	Growth Control	Growth Control	Growth Control	Growth Control	Growth Control	Growth Control	Growth Control	Growth Control	Growth Control

IMI	LIZ	MER	NFT	PEN	PIT	TEC	TGC	T/S	VAN
imipenem	linezolid	meropenem	nitrofurantoin	penicillin	piperacillin/ tazobactam	teicoplanin	tigecycline	trimethoprim/ sulfamethoxazole	vancomycin
8	16	8	128	4	128/4	16	4	8/152	16
4	8	4	64	2	64/4	8	2	4/76	8
2	4	2	32	1	32/4	4	1	2/38	4
1	2	1	16	0,5	16/4	2	0,5	1/19	2
0,5	1	0,5	8	0,25	8/4	1	0,25	0,5/9,5	1
0,25	0,5	0,25	4	0,12	4/4	0,5	0,12	0,25/4,75	0,5
0,12	0,25	0,12	2	0,06	2/4	0,25	0,06	0,125/2,38	0,25
Growth Control	Growth Control	Growth Control	Growth Control	Growth Control	Growth Control	Growth Control	Growth Control	Growth Control	Growth Control

Type	Cat. nr.	Product	Nr. of exam.	Reagent req.	Susp. m. req.
Kits	MLT00049	MIC Amikacin *	36 strips	no	yes
	MLT00050	MIC Ampicillin *	36 strips	no	yes
	MLT00051	MIC Ampicillin/Sulbactam *	36 strips	no	yes
	MLT00052	MIC Cefepime *	36 strips	no	yes
	MLT00053	MIC Ceftazidime *	36 strips	no	yes
	MLT00054	MIC Cefuroxime *	36 strips	no	yes
	MLT00055	MIC Ciprofloxacin *	36 strips	no	yes
	MLT00056	MIC Clindamycin *	36 strips	no	yes
	MLT00057	MIC Colistin	36 strips	no	yes
	MLT00058	MIC Ertapenem *	36 strips	no	yes
	MLT00059	MIC Gentamicin *	36 strips	no	yes
	MLT00060	MIC Imipenem *	36 strips	no	yes
	MLT00061	MIC Linezolid *	36 strips	no	yes
	MLT00062	MIC Meropenem	36 strips	no	yes
	MLT00063	MIC Nitrofurantoin *	36 strips	no	yes
	MLT00064	MIC Penicillin *	36 strips	no	yes
	MLT00065	MIC Piperacillin/Tazobactam *	36 strips	no	yes
	MLT00066	MIC Teicoplanin	36 strips	no	yes
MLT00069	MIC Tigecycline *	36 strips	no	yes	
MLT00067	MIC Trimethoprim/Sulfamethoxazole *	36 strips	no	yes	
MLT00068	MIC Vancomycin	36 strips	no	yes	
Other req. items (not included)	MLT00070	MLT Suspension Medium MIC, 30x13ml	for 360 strips	-	-
	MLT00071	MLT Suspension Medium MIC G+, 30x13ml	for 360 strips	-	-

\* production upon request - contact your local Erba team