

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

7

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

MIKROLATEST® ID

10

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, or CLSI: www.clsi.org)

These categories are characterised by EUCAST* as follows:

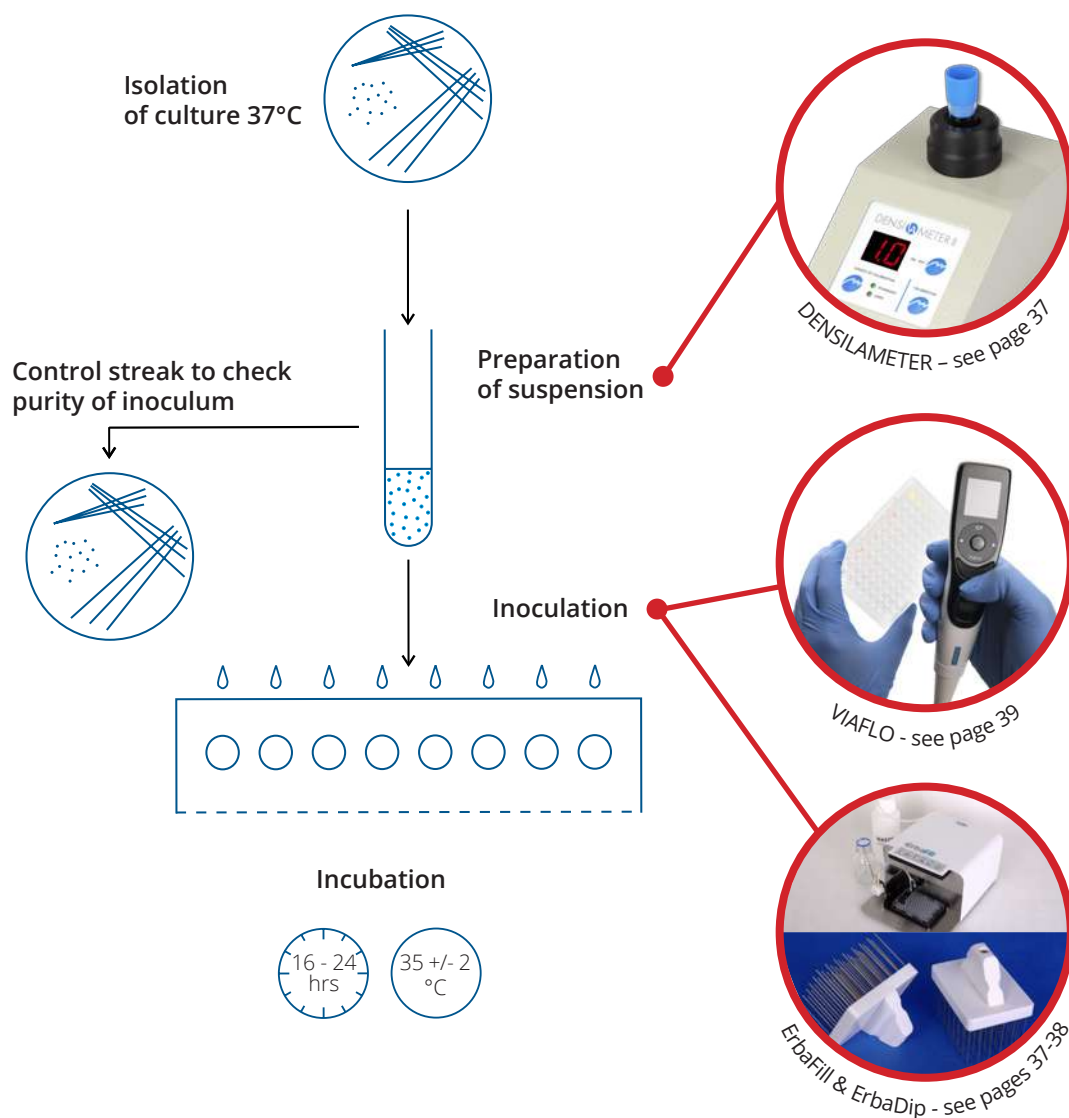
- Microorganism is defined as susceptible by a level of antimicrobial activity associated with a high probability of therapeutic success.
- Microorganism is defined as intermediate by a level of antimicrobial activity associated with uncertain therapeutic effect.
- Microorganism is defined as resistant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



Working procedure

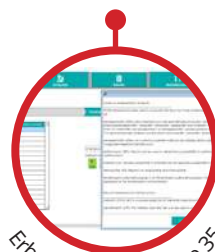


Evaluation of results

Automated reading
Software evaluation



Manual reading
Software evaluation



Manual reading
Manual evaluation



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

MIC 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

MIC 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

MIC 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

Breakpoint AST kits

Principle of the method:

Testing is based on bacterial growth in breakpoint concentrations of antibiotics. Breakpoints refer to standards of European Committee for Antimicrobial Susceptibility Testing – EUCAST issued in January 2011. Most of the antibiotics are represented by two (in exceptional cases one or three) breakpoint concentrations which enable interpretation to three categories: sensitive, intermediate or resistant.

These categories are characterised by EUCAST* as follows:

Microorganism is defined as sensitive 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

Available panels:

SENSILATEST G-I

The kit is designed to test antimicrobial susceptibility of bacteria from *Enterobacteriaceae* family. The kit contains 60 detection strips. It enables prognosis of ESBL production. We recommend to use SENSILatest G-I together with SENSILATEST G-II to test susceptibility of antibiotics aimed for treatment of serious infections especially in hospitalized patients.

Growth control	Ampicillin	Ampicillin /sulbactam	Cefalexin	Cefuroxime	Cefotaxime		Colistin
GC	AMP	AMS	CEX	CXM	CTX	CTX	COL
	8	8/4	16	8	1	2	2
Ciprofloxacin		Trimethoprim /sulfamethoxazole		Gentamicin		Amikacin	
CIP	CIP	TS	TS	GEN	GEN	AMK	AMK
0,5	1	2/38	4/76	2	4	8	16

SENSILATEST G-II

The kit is designed to test antimicrobial susceptibility of bacteria from *Enterobacteriaceae* family. It enables prognosis of ESBL production. The antibiotics in this kit are aimed for treatment of serious infections especially in hospitalized patients. Antibiotics for less serious infections are included in the kit SENSILatest G-I. The kit contains 60 detection strips.

Growth control	Piperacillin /tazobactam	Meropenem		Cefepime		Ceftazidime	
GC	PIT	MER	MER	CEP	CEP	CAZ	CAZ
	16/4	2	8	1	4	1	4
Aztreonam		Tigecycline		Netilmicin		Ceftazidime / clavulanate	
AZT	AZT	TGC	TGC	NET	NET	CZC	CZC
1	4	1	2	2	4	0.25/4	1/4

SENSILATEST G+

The kit is designed to test antimicrobial susceptibility of Gram-positive bacteria: enterococci and A,B,C,G streptococci. The kit contains 40 detection strips.

Growth control	Chloramphenicol	Moxifloxacin		Linezolid		Ampicillin	
GC	CMP	MOX	MOX	LIZ	LIZ	AMP	AMP
	8	0.5	1	2	4	4	8
Tigecycline		Levofloxacin		Erythromycin		Penicillin	
TGC	TGC	LEV	LEV	ERY	ERY	PEN	PEN
0.25	0.5	1	2	0.25	0.5	0.25	2
Ceftriaxone		Tetracycline		Clindamycin	Gentamicin	Vancomycin	
CRO	CRO	TET	TET	CLI	GEN	VAN	VAN
0.5	1	1	2	0.5	256	2	4

Breakpoint AST kits

SENSILATEST URINE

The kit is designed to test antimicrobial susceptibility of bacteria isolated from urine tract, especially the *Enterobacteriaceae* family. It enables prognosis of ESBL production. The kit contains 40 detection strips.

Growth control	Ampicillin	Amoxicillin/ clavulanate	Piperacillin /tazobactam	Cefotaxime		Ceftazidime	
GC	AMP	AMC	PIT	CTX	CTX	CAZ	CAZ
	8	8/4	16/4	1	2	1	4
Ceftazidime/clavulanate		Gentamicin		Amikacin		Norfloxacin	
CZC	CZC	GEN	GEN	AMK	AMK	NOR	NOR
1/4	4/4	2	4	8	16	0,5	1
Ciprofloxacin		Trimethoprim /sulfamethoxazole		Ertapenem		Fosfomycin	Nitrofurantoin
CIP	CIP	T/S	T/S	ERT	ERT	FOS	NFT
0,5	1	2/38	4/76	0,5	1	32	64

SENSILATEST NEFERM

The kit is designed to test antimicrobial susceptibility of Gram-negative rods. It enables prognosis of MBL (metallo-beta-lactamase) production. The kit contains 60 detection strips.

Growth control	Ceftazidime	Cefepime	Meropenem			Amikacin	
GC	CAZ	CEP	MER	MER	MER	AMK	AMK
	8	8	2	4	8	8	16
Ciprofloxacin		Trimethoprim /sulfamethoxazole		Colistin		Piperacillin /tazobactam	Gentamicin
CIP	CIP	T/S	T/S	COL	COL	PIT	GEN
0,5	1	2/38	4/76	2	4	16/4	4

SENSILATEST STAPHY

The kit is designed to test antimicrobial susceptibility of staphylococci. Possibility of MRSA is indicated. The kit contains 60 detection strips.

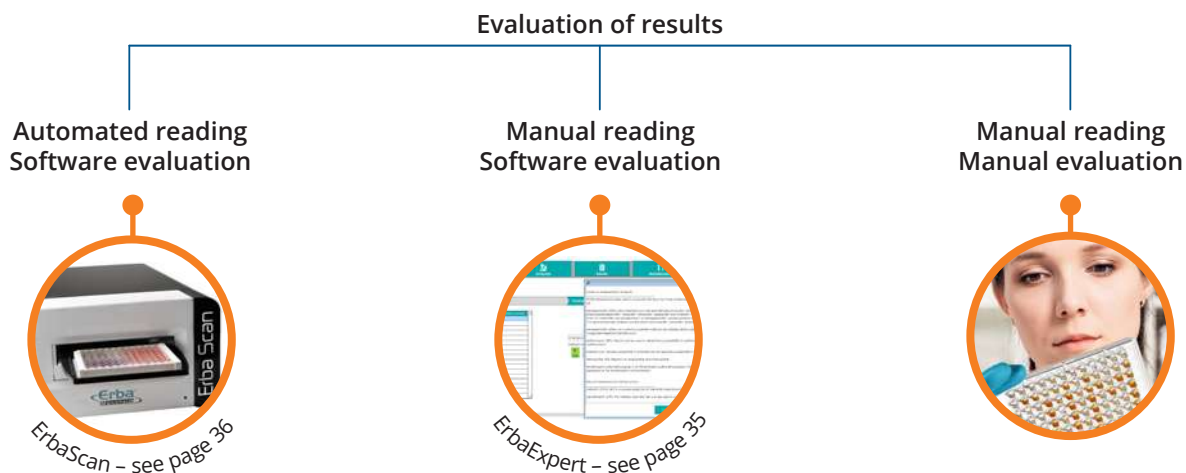
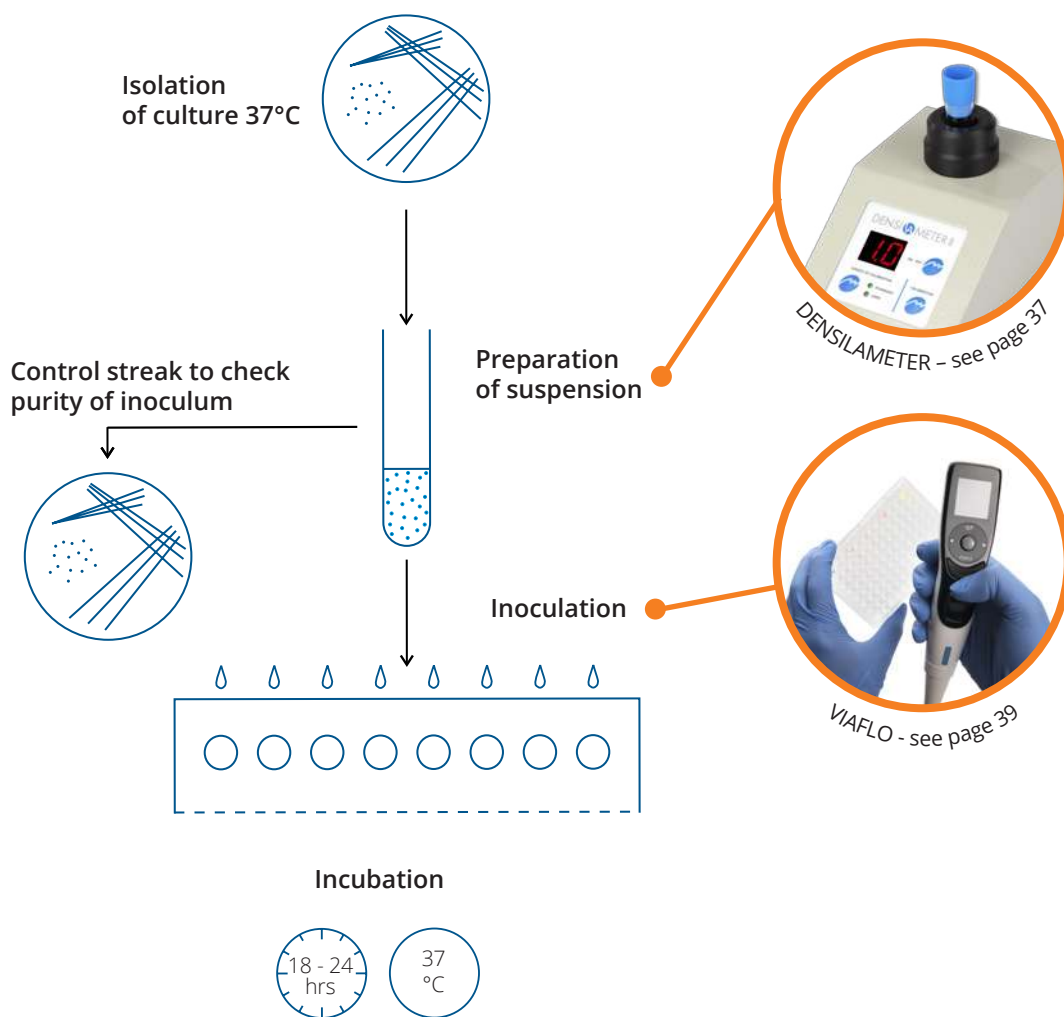
Growth control	Trimethoprim /sulfamethoxazole		Tigecycline	Linezolid	Erythromycin		Vancomycin
GC	T/S	T/S	TGC	LIZ	ERY	ERY	VAN
	2/38	4/76	0,5	4	1	2	2
Ciprofloxacin	Cefoxitin	Fusidic acid	Rifampicin		Clindamycin		Gentamicin
CIP	COX	FUS	RAM	RAM	CLI	CLI	GEN
1	4	1	0,0625	0,5	0,25	0,5	1



MIKROLATEST® BP Breakpoint AST kits are represented
by traditional SENSILATEST line.

Type	Cat. nr.	Product	Nr. of exam.	Reagent req.	Susp. m. req.
Kits	MLT00077	SENSILATEST G-I	60	no	yes (only dry form included)
	MLT00078	SENSILATEST G-II	60	no	yes (only dry form included)
	MLT00081	SENSILATEST URINE	40	no	yes (only dry form included)
	MLT00079	SENSILATEST NEFERM	60	no	yes (only dry form included)
	MLT00080	SENSILATEST STAPHY	60	no	yes (only dry form included)
	MLT00076	SENSILATEST G+	40	no	yes (only dry form included)
Other req. items (not included)	MLT00082	Suspension medium for SENSILATEST	20	-	-

Working procedure



Identification kits

Identification

Kits MIKROLATEST® ID offer comfortable and reliable way to identify the most important bacteria and yeasts. Tests are placed on divided microplates with 1, 2 or 3 row strips. Each plate then contains strips for identification 12, 6 or 4 strains, respectively. Only a relevant part of the plate, corresponding to the number of examined strains, can be used, the rest is kept for further use. Reagents, suspension media, paraffin oil and additional tests are supplied separately. Reagent necessary and non-reagent tests are available for most groups of microorganisms. Non-reagent kits bring even more working comfort and save time.

Non- reagent kits:

ENTEROtest 24 N

STAPHYtest 24

EN-COCCUStest

NEISSERIAtest (suspension medium needed, supplied separately)

NEFERMtest 24

STREPTOtest 24 (suspension medium needed, supplied separately)

CANDIDAtest 21 (suspension medium needed, included in the kit)

CANDIDA-Screen

Reagents

Reagents enable to visualize or strengthen the colour course of the reaction. The main features of these original reagents are their standardized preparation and optimal composition.

Paraffin oil, sterilized

Strong alkaline reactions in some tests (decarboxylases, indole, urease, H₂S, etc.) may influence reactions in next wells. This negative effect can be avoided by adding the paraffin oil.

Suspension media

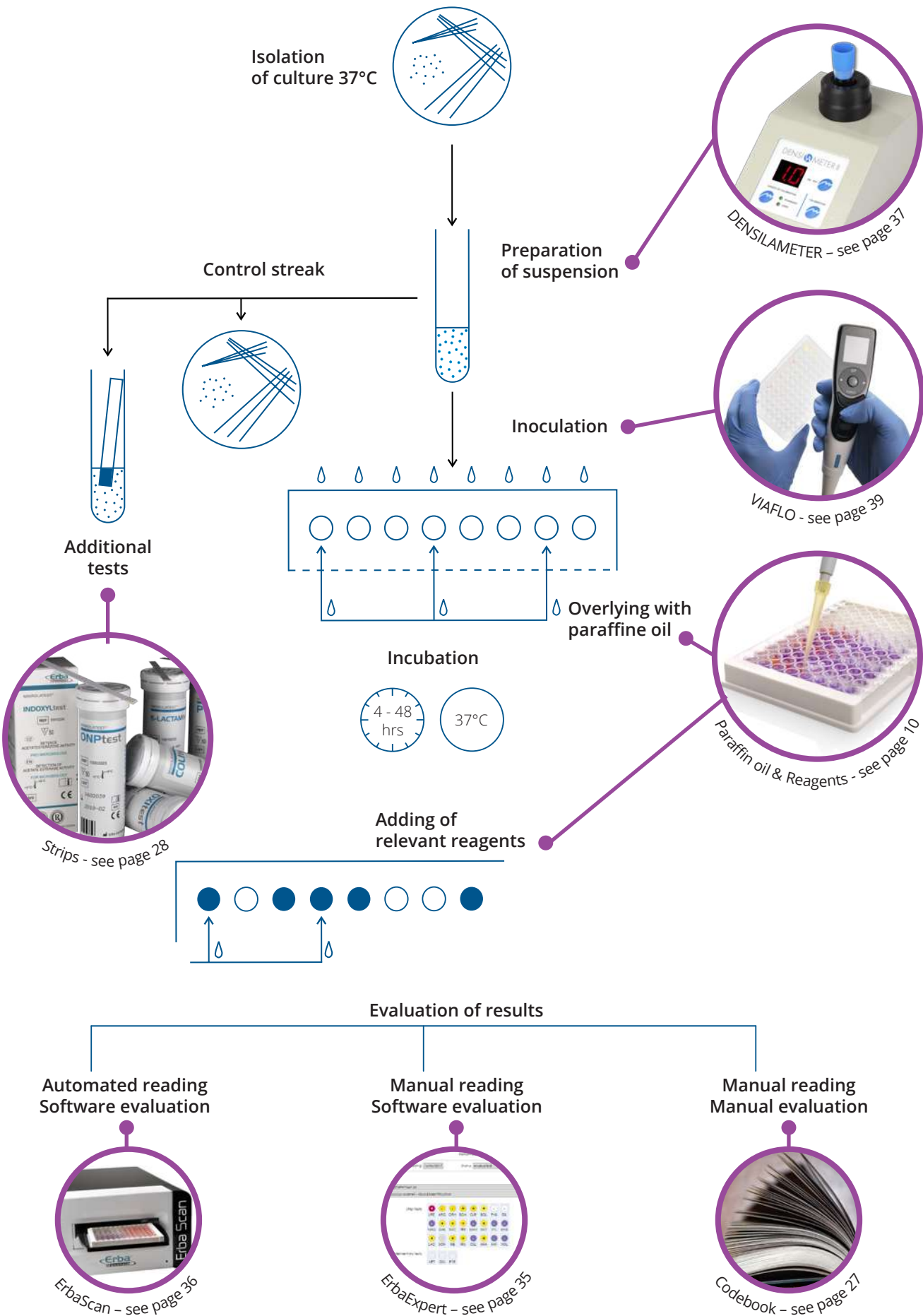
Suspension media are enriched media designed for preparation of bacterial suspension. They contribute considerably to standardization of the identification procedure ensuring osmotic stabilization, required oxido-reduction potential as well as growth promotion of bacterial strain. Sterilized media are supplied in vials, the content of one vial is used to prepare the suspension of one strain.

Identification kits

Kit	Nr. of tests	Necessary reagents and aids	Recommended additional strip or disc testing	Results reading / hours after inoculation
ENTEROtest 24 N	40	Paraffin oil	INDOLtest VPtest, reagent for ACETOIN OXItest	24 hours
ENTEROtest 16	60	Indol Phenylalanine Paraffin oil	OXItest ONPtest COLItest VP test, reagent for ACETOIN	24 hours
ENTERO-Screen	36	Acetoin Phenylalanin Indol Paraffin oil	OXItest COLItest PYRAttest, reagent for PYRAttest	4 hours
ENTERO-Rapid 24	40	Indol Acetoin Phosphatase Pyr Paraffin oil	OXItest, reagent for OXItest	4 hours
STAPHYtest 24	40	Paraffin oil	OXItest VPtest, reagent for ACETOIN PYRAttest, reagent for PYRtest NOVOBIOCIN disc BACITRACIN S disc	24 hours
STAPHYtest 16	60	Phosphatase Nitrate Paraffin oil	VPtest, reagent for ACETOIN OXItest, reagent for OXItest PYRAttest, reagent for PYRAttest NOVOBIOCIN disc	24 hours
STREPTOtest 24	40	Suspension medium for STREPTOtest 24 Paraffin oil	HIPPURATEtest Reagent for HIPPURATEtest PYRAttest, reagent for PYRtest VPtest Reagent for ACETOIN	24 hours
EN-COCCUStest	36	Paraffin oil	PYRAttest, reagent for PYRtest	24 hours
NEFERMtest 24	40	Paraffin oil	OXItest, reagent for OXItest OF test	24 hours
ANAEROtest 23	40	Indol Nitrate Bromcrezol red Suspension medium for ANAEROtest 23 Paraffin oil		24-48 hours
NEISSERIAtest	36	Suspension medium for NEISSERIAtest	ONPtest OXItest, reagent for OXItest V+K disc	4-24 hours
URE-HPtest	288	Paraffin oil		Up to 4 hour depending on urease activity
CANDIDAtest 21	20		Morphology	24 hours
CANDIDA-Screen	36	Paraffin oil	Morphology	24 hours
OFtest	288	Paraffin oil		2-4 hours

Working procedure

MIKROLATEST® ID



ENTEROtest 24 N

ENTEROtest 24 N is a non-reagent test designed for routine, definitive identification of important strains from the *Enterobacteriaceae* family within 24 hours. The kit contains 24 biochemical tests, which are placed in 3 rows (triple-strips) of a divided microplate. The identification can be supplemented with tests available in the form of detection strips MIKROLATEST®: OXItest for cytochromoxidase detection, OFtest to differentiate from Gram-negative non-fermenters, INDOLtest for tryptophanase activity detection and VPtest for acetoin formation detection. Each kit of ENTEROtest 24 contains 10 microplates, i.e. 40 determinations in total.

Type	Cat. nr.	Product	Nr. of exam.	Reagent req.	Susp. m. req.
Kit	MLT00008	ENTEROtest 24 N	40	no	no
Additional tests (optional)	MLT00028	INDOLtest	140	no	-
	MLT00041	VPtest	50	yes	-
	MLT00039	OXItest	50	yes	-
	MLT00032	OFtest	288	no	-
Reagents – add. t. (not included)	MLT00016	Reagent for ACETOIN test	90	-	-
	MLT00022	Reagent for OXIDASE test	250	-	-
Other req. items (not included)	MLT00042	Paraffin oil, sterilized	150	-	-

1		H URE	G ARG	F ORN	E LYS	D H ₂ S	C SCI	B MAL	A ONP
	+								
	-								
2		H SAL	G SOR	F MLB	E CEL	D LAC	C TRE	B MAN	A GLR
	+								
	-								
3		H DUL	G ADO	F ART	E SUC	D INO	C RAF	B ESL	A bXY
	+								
	-								
OXI Test									
+									
-									
OFtest									
+									
-									
VPtest									
+									
-									
INDOL Test									
+									
-									

ErbaExpert/Codebook:

Aeromonas caviae, *Aeromonas hydrophila* subsp. *hydrophila*, *Aeromonas jandaei*, *Aeromonas schubertii*, *Aeromonas sobria*, *Aeromonas veronii*, *Aeromonas enteropelogenes*, *Aeromonas ichthiosmia*, *Aeromonas allosaccharophila*, *Aeromonas eucrenophila*, *Aeromonas media*, *Aeromonas trofa*, *Aeromonas encheleia*, *Aeromonas popoffii*, *Aeromonas bestiarum*, *Budvicia aquatica*, *Buttiauxella agrestis*, *Buttiauxella brennerae*, *Buttiauxella ferragutiae*, *Buttiauxella gaviniae*, *Buttiauxella izardii*, *Buttiauxella noackiae*, *Buttiauxella warmboldiae*, *Cedecea davisae*, *Cedecea lapagei*, *Cedecea neteri*, *Citrobacter braakii*, *Citrobacter farmeri*, *Citrobacter freundii*, *Citrobacter koseri*, *Citrobacter sedlakii*, *Citrobacter werkmanii*, *Citrobacter youngae*, *Citrobacter rodentium*, *Citrobacter gillenii*, *Citrobacter murliniae*, *Cronobacter sakazakii*, *Edwardsiella hoshinae*, *Edwardsiella ictaluri*, *Edwardsiella tarda*, *Enterobacter aerogenes*, *Enterobacter amnigenus* biovar 1, *Enterobacter amnigenus* biovar 2, *Enterobacter asburiae*, *Enterobacter cancerogenus*, *Enterobacter cloacea* subsp. *cloacea*, *Enterobacter cloacea* subsp. *dissolvens*, *Enterobacter gergoviae*, *Enterobacter hormaechei*, *Enterobacter nimipressuralis*, *Enterobacter pyrinus*, *Enterobacter kobei*, *Escherichia coli*, *Escherichia fergusonii*, *Escherichia hermannii*, *Escherichia vulneris*, *Ewingella americana*, *Hafnia alvei*, *Hafnia alvei* biovar 1, *Klebsiella oxytoca*, *Klebsiella pneumoniae* subsp. *ozaenae*, *Klebsiella pneumoniae* subsp. *pneumoniae*, *Klebsiella pneumoniae* subsp. *rhinoscleromatis*, *Kluyvera intermedia*, *Kluyvera ascorbata*, *Kluyvera cryocrescens*, *Kluyvera georgiana*, *Leclercia adecarboxylata*, ...

ErbaExpert/Codebook:

Leminorella grimontii, Leminorella richardii, Moellerella wisconsensis, Morganella morganii subsp. morganii, Morganella morganii subsp. sibonii, Obesumbacterium proteus, Pantoea agglomerans, Pantoea ananatis, Pantoea citrea, Pantoea dispersa, Pantoea punctata, Pantoea terrea, Pantoea stewartii subsp. stewartii, Pantoea stewartii subsp. indologenes, Plesiomonas shigelloides, Pragia fontium, Proteus mirabilis, Proteus myxofaciens, Proteus penneri, Proteus vulgaris, Providencia alcalifaciens, Providencia heimbachae, Providencia rettgeri, Providencia rustigianii, Providencia stuartii, Rahnella aquatilis, Raoultella ornithinolytica, Raoultella terrigena, Salmonella enterica subsp. enterica, Salmonella serovar paratyphi, Salmonella serovar enteritidis, Salmonella enterica subsp. salamae, Salmonella enterica subsp. arizonae, Salmonella enterica subsp. diarizonae, Salmonella enterica subsp. houtenae, Salmonella bongori, Salmonella serovar typhi, Serratia entomophila, Serratia ficaria, Serratia fonticola, Serratia grimesii, Serratia liquefaciens, Serratia marcescens, Serratia marcescens biovar 1, Serratia odorifera biovar 1, Serratia odorifera biovar 2, Serratia proteamaculans, Serratia plymuthica, Serratia quinivorans, Serratia rubidaea, Shigella sonnei, Shigella boydii (group C), Shigella dysenteriae (group A), Shigella flexneri (group B), Tatumella tyoseos, Trabulsiella guamensis, Vibrio cholerae, Vibrio fluvialis, Vibrio furnissii, Vibrio hollisae, Vibrio metschnikovii, Vibrio mimicus, Vibrio parahaemolyticus, Vibrio vulnificus, Vibrio alginolyticus, Vibrio cincinnatiensis, Yersinia aldovae, Yersinia bercovieri, Yersinia enterocolitica ssp. enterocolitica, Yersinia frederiksenii, Yersinia intermedia, Yersinia kristensenii, Yersinia mollaretii, Yersinia pestis, Yersinia pseudotuberculosis, Yersinia rohdei, Yersinia ruckeri, Yokenella regensburgei, Photobacterium damsela ssp. damsela

* Code book may contain limited list of microorganisms, visit our website to download code books or contact your local representative

OFtest

OFtest is designed for rapid differentiation of fermentative and oxidative glucose metabolism. OFtest is placed in the wells of single microwell-strips of breakable microwell plate. Each kit of OFtest contains 3 microplates, i.e. 288 determinations in total.

Type	Cat. nr.	Product	Nr. of exam.	Reagent req.	Susp. m. req.
Kit	MLT00032	OFtest	288	no	no
Other req. items (not included)	MLT00042	Paraffin oil, sterilized	370	-	-

	OFtest
+	
-	

INDOLtest

INDOLtest is a drop test, which is designed for rapid (5 min) determination of indole representing a tryptophan degradation product of bacterial metabolism of tryptophan. It is intended for fast presumptive determination of *E. coli* strains, screening differentiation between indole-positive and indole-negative bacterial genera as well as a required additional test of certain identification kits. The principle of the test is hydrolysis of tryptophan to indole, pyruvate and ammonia. Indole reacts with the substrate that forms a part of the diagnostic zone of INDOLtest, p – dimethylaminocinnamaldehyde (DMACA), while producing a blue-green compound. INDOLtest represents the most sensitive routine method to prove the presence of bacterial tryptophanase. The detection limit is 3 µg/L of indole. Grown bacteria on blood agar or medium containing tryptophan is necessary. Each kit of INDOLtest contains a vial of 10 ml of solution, i.e. 140 determinations in total.

	INDOLtest
+	
-	

Type	Cat. nr.	Product	Nr. of exam.	Reagent req.	Susp. m. req.
Kit	MLT00028	INDOLtest	140	no	no

ENTEROtest 16

ENTEROtest 16 is designed for routine identification of important strains of the *Enterobacteriaceae* family within 24 hours. The kit contains 16 biochemical tests, which are placed in 2 rows (double-strips) of a divided microplate. The identification can be supplemented with the tests available in the form of detection strips MIKROLATEST®: OXItest for cytochromoxidase detection, ONPtest for β -galactosidase detection, COLtest for β -glucuronidase detection and VPtest for acetoin formation detection. Each kit of ENTEROtest 16 contains 10 microplates, i.e. 60 determinations in total.

Type	Cat. nr.	Product	Nr. of exam.	Reagent req.	Susp. m. req.
Kit	MLT00005	ENTEROtest 16	60	yes	no
Reagents - kit (not included)	MLT00020	Reagent for INDOLE test	630	-	-
	MLT00017	Reagent for PHENYLALANINE test	230	-	-
Additional tests (optional)	MLT00039	OXItest	50	optional	
	MLT00038	ONPtest	50	no	
	MLT00035	COLtest	50	yes	
	MLT00041	VPtest	50	yes	
Reagents - add. t. (not included).	MLT00022	Reagent for OXIDASE test	250	-	-
	MLT00020	Reagent for INDOLE test (used in COLtest)	120	-	-
	MLT00016	Reagent for ACETOIN test	90	-	-
Other req. items (not included)	MLT00042	Paraffin oil, sterilized	150	-	-

1		H	G	F	E	D	C	B	A
		H ₂ S	LYS	IND	ORN	URE	PHE	ESL	SCI
+	+								
	-								
2		H	G	F	E	D	C	B	A
		MAL	INO	ADO	CEL	SUC	SOR	TRE	MAN
+	+								
	-								

	OXItest
+	
-	

	ONP Test
+	
-	

	VPtest
+	
-	

	OFtest
+	
-	

ErbaExpert/Codebook:

Citrobacter amalonaticus, *Citrobacter braakii*, *Citrobacter farmeri*, *Citrobacter freundii*, *Citrobacter koseri*, *Citrobacter sedlakii*, *Citrobacter werkmanii*, *Citrobacter youngae*, *Cronobacter sakazakii*, *Edwardsiella tarda*, *Enterobacter aerogenes*, *Enterobacter cloacae* subsp. *cloacae*, *Escherichia coli*, *Escherichia fergusonii*, *Escherichia hermannii*, *Escherichia vulneris*, *Hafnia alvei*, *Klebsiella oxytoca*, *Klebsiella pneumoniae* subsp. *ozaenae*, *Klebsiella pneumoniae* subsp. *pneumoniae*, *Klebsiella pneumoniae* subsp. *rhinoscleromatis*, *Kluyvera ascorbata*, *Leclercia adecarboxylata*, *Morganella morganii* subsp. *morganii*, *Morganella morganii* subsp. *sibonii*, *Pantoea agglomerans*, *Proteus mirabilis*, *Proteus penneri*, *Proteus vulgaris*, *Providencia alcalifaciens*, *Providencia rettgeri*, *Providencia stuartii*, *Salmonella enterica* subsp. *enterica*, *Salmonella serovar paratyphi*, *Salmonella serovar enteritidis*, *Salmonella enterica* subsp. *salamae*, *Salmonella enterica* subsp. *arizonae*, *Salmonella enterica* subsp. *diarizonae*, *Salmonella enterica* subsp. *houteanae*, *Salmonella bongori*, *Salmonella serovar typhi*, *Serratia ficaria*, *Serratia marcescens*, *Serratia odorifera* biovar 1, ...

ErbaExpert/Codebook:

Serratia odorifera biovar 2, *Serratia rubidaea*, *Shigella sonnei*, *Shigella boydii* (group C), *Shigella dysenteriae* (group A), *Shigella flexneri* (group B), *Yersinia enterocolitica* ssp. *enterocolitica*, *Yersinia kristensenii*, *Yersinia pseudotuberculosis*, *Yersinia rohdei*, *Yokenella regensburgei*, *Aeromonas caviae*, *Aeromonas hydrophila*, *Aeromonas jandaei*, *Aeromonas schubertii*, *Aeromonas sobria*, *Aeromonas veronii*, *Aeromonas enteropelogenes*, *Aeromonas ichthiosmia*, *Aeromonas allosaccharophila*, *Aeromonas eucrenophila*, *Aeromonas media*, *Aeromonas trota*, *Aeromonas encheleia*, *Aeromonas popoffii*, *Aeromonas bestiarum*, *Photobacterium damsela* ssp. *damsela*, *Plesiomonas shigelloides*, *Vibrio cholerae*, *Vibrio fluvialis*, *Vibrio furnissii*, *Vibrio hollisae*, *Vibrio metschnikovii*, *Vibrio mimicus*, *Vibrio parahaemolyticus*, *Vibrio vulnificus*, *Vibrio alginolyticus*, *Vibrio cincinnatiensis*

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ENTERO-Screen

ENTERO-Screen is designed for rapid identification of the most frequent *Enterobacteriaceae* isolated from food and clinical material, particularly in urinary infections, eventually for further purposes, within 4 hours. The kit contains 8 biochemical tests which are placed in a short 8-well strip of a divided microplate. The identification can be supplemented with the tests available in the form of detection strips MIKROLATEST®. Each kit of ENTERO-Screen contains 3 microplates, i.e. 36 determinations in total.

Type	Cat. nr.	Product	Nr. of exam.	Reagent req.	Susp. m. req.
Kit	MLT00009	ENTERO-Screen	36	no	no
Reagents – kit (not included)	MLT00016	Reagent for ACETOIN	270	-	-
	MLT00017	Reagent for PHENYLALANINE	230	-	-
	MLT00020	Reagent for INDOLE	310	-	-
Other req. items (not included)	MLT00042	Paraffin oil, sterilized	90	-	-

		H GLU	G VPT	F PHE	E IND	D SUC	C URE	B LYS	A ORN
+		Yellow	Red	Dark Green	Pink	Yellow	Red	Blue	Blue
-		Green	White	Orange	Yellow	Green	Yellow	Green	Green

ErbaExpert/Codebook:

Citrobacter amalonaticus, *Citrobacter braakii*, *Citrobacter farmeri*, *Citrobacter freundii*, *Citrobacter koseri*, *Citrobacter sedlakii*, *Citrobacter werkmanii*, *Citrobacter youngae*, *Cronobacter sakazakii*, *Edwardsiella tarda*, *Enterobacter aerogenes*, *Enterobacter cloacae* subsp. *cloacae*, *Escherichia coli*, *Escherichia fergusonii*, *Escherichia hermannii*, *Escherichia vulneris*, *Hafnia alvei*, *Klebsiella oxytoca*, *Klebsiella pneumoniae* subsp. *ozaenae*, *Klebsiella pneumoniae* subsp. *pneumoniae*, *Klebsiella pneumoniae* subsp. *rhinoscleromatis*, *Kluyvera ascorbata*, *Leclercia adecarboxylata*, *Morganella morganii* subsp. *morganii*, *Morganella morganii* subsp. *sibonii*, *Pantoea agglomerans*, *Proteus mirabilis*, *Proteus penneri*, *Proteus vulgaris*, *Providencia alcalifaciens*, *Providencia rettgeri*, *Providencia stuartii*, *Salmonella enterica* subsp. *enterica*, *Salmonella serovar paratyphi*, *Salmonella serovar enteritidis*, *Salmonella enterica* subsp. *salamae*, *Salmonella enterica* subsp. *arizonae*, *Salmonella enterica* subsp. *diarizonae*, *Salmonella enterica* subsp. *houtenae*, *Salmonella bongori*, *Salmonella serovar typhi*, *Serratia ficaria*, *Serratia marcescens*, *Serratia odorifera* biovar 1, *Serratia odorifera* biovar 2, *Serratia rubidea*, *Shigella sonnei*, *Shigella boydii* (group C), *Shigella dysenteriae* (group A), *Shigella flexneri* (group B), *Yersinia enterocolitica* ssp. *enterocolitica*, *Yersinia kristensenii*, *Yersinia pseudotuberculosis*, *Yersinia rohdei*, *Yokenella regensburgei*

* Code book may contain limited list of microorganisms, visit our website to download code books or contact your local representative

ENTERO-Rapid 24

The ENTERO-Rapid 24 kit is intended for rapid identification of important intestinal bacteria of the *Enterobacteriaceae* family in 4 hours. The kit contains 24 biochemical tests, which are placed in 3 (triple-strips) of a divided microplate. To differentiate between *Enterobacteriaceae* and *Vibrionaceae* family, a test for the cytochromoxidase detection, the OXItest, can be used. Each kit of ENTERO-Rapid 24 contains 10 microplates, i.e. 40 determinations in total.

Type	Cat. nr.	Product	Nr. of exam.	Reagent req.	Susp. m. req.
Kit	MLT00007	ENTERO-Rapid 24	40	yes	no
Reagents - kit (not included)	MLT00020	Reagent for INDOLE test	310	-	-
	MLT00023	Reagent for PYR test	800	-	-
	MLT00016	Reagent for ACETOIN test	270	-	-
	MLT00018	Reagent for PHOSPHATASE test	250	-	-
Additional tests (optional)	MLT00039	OXItest	50	optional	-
Reagents - add. t. (not included)	MLT00022	Reagent for OXIDASE test	250	-	-
Other req. items (not included)	MLT00042	Paraffin oil, sterilized	90	-	-

1		H IND	G LYS	F ORN	E URE	D SUC	C SOR	B TRE	A GLU
	⊕								
	⊖								

2		H PYR	G ESL	F CEL	E MLB	D SAL	C MNS	B MLT	A RAF
	⊕								
	⊖								

3		H VPT	G PHE	F MAL	E ONP	D GLR	C αGA	B bXY	A NAG
	⊕								
	⊖								

	OXI Test	
⊕		
⊖		

	OFtest
⊕	
⊖	

ErbaExpert/Codebook:

Citrobacter amalonoticus, Citrobacter braakii, Citrobacter farmeri, Citrobacter freundii, Citrobacter koseri, Citrobacter sedlakii, Citrobacter werkmanii, Citrobacter youngae, Cronobacter sakazakii, Edwardsiella tarda, Enterobacter aerogenes, Enterobacter cloacae, Escherichia coli, Escherichia fergusonii, Escherichia hermannii, Escherichia vulneris, Hafnia alvei, Klebsiella oxytoca, Klebsiella pneumoniae subsp. ozaenae, Klebsiella pneumoniae subsp. pneumoniae, Klebsiella rhinoscleromatis, Kluyvera ascorbata, Leclercia adecarboxylata, Morganella morganii, Pantoea agglomerans, Proteus mirabilis, Proteus penneri, Proteus vulgaris, Providencia alcalifaciens, Providencia rettgeri, Providencia stuartii, Salmonella enterica subsp. enterica, Salmonella serovar paratyphi, Salmonella enterica subsp. arizonae, Serratia ficaria, Serratia marcescens, Serratia odorifera biovar 1, Serratia odorifera biovar 2, Serratia rubidaea, Shigella sonnei, Shigella boydii, Shigella flexneri, Yersinia enterocolitica ssp. enterocolitica, Yersinia kristensenii, Yersinia pseudotuberculosis, Yersinia rohdei, Yokenella regensburgei

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NEFERMtest 24

NEFERMtest 24 is a non-reagent test designed for routine identification of Gram-negative non-fermentative bacteria isolated particularly from clinical material within 24 hours. The kit also enables to perform the identification of the most frequent oxidase-positive fermenting Gram-negative rods. The kit contains 24 biochemical tests, which are placed in 3 rows (triple-strips) of a divided microplate. The identification has to be supplemented with OXItest for cytochromoxidase detection, available in the form of the detection strip MIKROLATEST® OXItest. Each kit of NEFERMtest 24 contains 10 microplates, i.e. 40 determinations in total.

Type	Cat. nr.	Product	Nr. of exam.	Reagent req.	Susp. m. req.
Kit	MLT00010	NEFERMtest 24	40	no	no
Additional tests (optional)	MLT00039	OXItest	50	no	-
Reagents - add. t. (not included)	MLT00022	Reagent for OXIDASE test	250	-	-
Other req. items (not included)	MLT00042	Paraffin oil, sterilized	150	-	-

1		H	G	F	E	D	C	B	A
		URE	ARG	ORN	LYS	AAM	bGL	NAG	SCI
	⊕								
2		H	G	F	E	D	C	B	A
		LAC	MAN	TRE	XYL	ARA	αGA	βGA	MAL
	⊕								
3		H	G	F	E	D	C	B	A
		GAL	MLT	CEL	SUC	INO	gGT	PHS	ESL
	⊕								
		H	G	F	E	D	C	B	A
		LAC	MAN	TRE	XYL	ARA	αGA	βGA	MAL
	⊖								
		H	G	F	E	D	C	B	A
		GAL	MLT	CEL	SUC	INO	gGT	PHS	ESL
	⊖								
		H	G	F	E	D	C	B	A
		LAC	MAN	TRE	XYL	ARA	αGA	βGA	MAL
	⊖								
		H	G	F	E	D	C	B	A
		GAL	MLT	CEL	SUC	INO	gGT	PHS	ESL
	⊖								
		H	G	F	E	D	C	B	A
		LAC	MAN	TRE	XYL	ARA	αGA	βGA	MAL
	⊖								
		H	G	F	E	D	C	B	A
		GAL	MLT	CEL	SUC	INO	gGT	PHS	ESL
	⊖								

ErbaExpert/Codebook:

Acinetobacter haemolyticus, Acinetobacter radioresistens, Acinetobacter baumannii / calcoaceticus, Acinetobacter lwoffii / junii, Aeromonas caviae, Aeromonas hydrophila subsp. hydrophila, Aeromonas jandaei, Aeromonas schubertii, Aeromonas sobria, Aeromonas veronii, Aeromonas enteropelogenes, Aeromonas ichthiosmia, Achromobacter xylosoxidans subsp. xylosoxidans, Alcaligenes faecalis group, Bergeyella zoohelcum, Bordetella bronchiseptica, Brevundimonas vesicularis, Brevundimonas diminuta / Oligella urethralis, Burkholderia pseudomallei, Burkholderia gladioli, Burkholderia cepacia complex, Comamonas testosteroni, Delftia acidovorans, Eikenella corrodens, Elisabethkingia meningoseptica, Empedobacter brevis, Chryseobacterium indologenes, Chryseobacterium gleum, Methylobacterium mesophilicum, Moraxella osloensis, Moraxella lacunata / nonliquefaciens, Myroides odoratus / odoratimimus, Ochrobactrum anthropi, Ochrobactrum intermedium, Oligella ureolytica, Plesiomonas shigelloides, Pseudomonas aeruginosa, Pseudomonas putida, Pseudomonas fluorescens, Pseudomonas stutzeri, Pseudomonas mendocina, Pseudomonas fragi, Pseudomonas luteola, Pseudomonas oryzae, Pseudomonas monteilii, Ralstonia pickettii biovar 1, Ralstonia pickettii biovar 2, Rhizobium radiobacter, Shewanella putrefaciens, Sphingobacterium spiritivorum, Sphingobacterium multivorum / thalpoPhillum, Sphingobacterium paucimobilis, Sphingobacterium parapaucimobilis, Sphingobacterium yanoikuyae, Stenotrophomonas maltophilia, Suttonella indologenes, Vibrio cholerae, Vibrio fluvialis, Vibrio furnissii, Vibrio hollisae, Vibrio metschnikovii, Vibrio mimicus, Vibrio parahaemolyticus, Vibrio vulnificus, Weeksella virosa

* Code book may contain limited list of microorganisms, visit our website to download code books or contact your local representative

STAPHYtest 24

The non-reagent STAPHYtest 24 kit is designed for the definitive identification of staphylococci isolated from clinical material and for their differentiation from other Gram-positive catalase-positive cocci. The kit contains 24 biochemical tests, which are placed in 3 rows (triple-strips) of a divided microplate. The identification can be supplemented with the tests available in the form of detection strips MIKROLATEST®: VPtest for the acetoin formation detection, PYRAtest for the pyrrolidonylarylamidase activity detection and OXItest for the cytochromoxidase detection. Each kit of STAPHYtest 24 contains 10 microplates, i.e. 40 determinations in total.

Type	Cat. nr.	Product	Nr. of exam.	Reagent req.	Susp. m. req.
Kit	MLT00013	STAPHYtest 24	40	no	no
Additional tests (optional)	MLT00041	VPtest	50	yes	-
	MLT00039	OXItest	50	optional	-
	MLT00040	PYRAtest	50	yes	-
	MLT00085	NOVOBIOCIN disc	100	no	-
	MLT00084	BACITRACIN S disc	100	no	-
Reagents - add. t. (not included)	MLT00016	Reagent for ACETOIN test	90	-	-
	MLT00022	Reagent for OXIDASE test	250		
	MLT00023	Reagent for PYR test	800		
Other req. items (not included)	MLT00042	Paraffin oil, sterilized	250	-	-

1		H	G	F	E	D	C	B	A
		URE	ARG	ORN	bGA	GLR	bGL	PHS	ESL
	⊕								
2		H	G	F	E	D	C	B	A
		NAG	GAL	SUC	TRE	MAN	MLT	XYL	MNS
	⊕								
3		H	G	F	E	D	C	B	A
		LAC	SOR	RIB	FRU	CEL	ARA	RAF	XOL
	⊕								

	VPtest
⊕	
⊖	

	OXI Test
⊕	
⊖	

	PYRA Test
⊕	
⊖	

ErbaExpert/Codebook:

Aerococcus viridans, Dermacoccus nishinomiyaensis, Kocuria kristinae, Kocuria rosea, Kocuria varians, Macrococcus bovicus, Macrococcus caseolyticus, Macrococcus carouselicus, Macrococcus equipersicus, Micrococcus sp., Rothia mucilaginosa, Staphylococcus arlettae, Staphylococcus aureus subsp. anaerobius, Staphylococcus aureus subsp. aureus, Staphylococcus auricularis, Staphylococcus capitis subsp. ureolyticus, Staphylococcus capitis subsp. capitis, Staphylococcus caprae, Staphylococcus chromogenes, Staphylococcus cohnii subsp. urealyticum, Staphylococcus cohnii subsp. cohnii, Staphylococcus delphini, Staphylococcus epidermidis, Staphylococcus equorum, Staphylococcus felis, Staphylococcus gallinarum, Staphylococcus haemolyticus, Staphylococcus hyicus, Staphylococcus intermedius, Staphylococcus kloosii, Staphylococcus lentus, Staphylococcus lugdunensis, Staphylococcus muscae, Staphylococcus pasteurii, Staphylococcus piscifermentans, Staphylococcus saprophyticus subsp. saprophyticus, Staphylococcus schleiferi subsp. schleiferi, Staphylococcus schleiferi subsp. coagulans, Staphylococcus simulans, Staphylococcus warneri, Staphylococcus xylosus, Staphylococcus saprophyticus subsp. bovis, Staphylococcus carnosus subsp. carnosus, Staphylococcus hominis subsp. hominis, Staphylococcus vitulinus, Staphylococcus hominis subsp. novobiosepticus, Staphylococcus condimentii, Staphylococcus carnosus subsp. utilis, Staphylococcus lutrae, Staphylococcus sciuri, Staphylococcus petrasii subsp. petrasii, Staphylococcus petrasii subsp. croceilyticus, Staphylococcus petrasii subsp. jettensis, Staphylococcus petrasii subsp. pragensis

* Code book may contain limited list of microorganisms, visit our website to download code books or contact your local representative

STAPHYtest 16

STAPHYtest 16 is designed for routine identification of staphylococci within 16-24 hours, particularly for the coagulase-negative strains, isolated from clinical material and food within 16-24 hours. The kit contains 16 biochemical tests, which are placed in 2 rows (double-strips) of a divided microplate. The identification can be supplemented with the tests available in the form of detection strips MIKROLATEST® VPtest, OXItest, PYRAtest and Novobiocin disc. Each kit of STAPHYtest 16 contains 10 microplates, i.e. 40 determinations in total.

Type	Cat. nr.	Product	Nr. of exam.	Reagent req.	Susp. m. req.
Kit	MLT00012	STAPHYtest 16	60	yes	no
Reagents - kit (not included)	MLT00018	Reagent for PHOSPHATASE test	250	-	-
	MLT00021	Reagent for NITRATE test	460	-	-
Additional tests (optional)	MLT00041	VPtest	50	yes	-
	MLT00039	OXItest	50	optional	-
	MLT00040	PYRAtest	50	yes	-
	MLT00085	NOVOBIOCIN disc	100	no	-
Reagents - add. t. (not included)	MLT00016	Reagent for ACETOIN test	90	-	-
	MLT00022	Reagent for OXIDASE test	250	-	-
	MLT00023	Reagent for PYR test	800	-	-
Other req. items (not included)	MLT00042	Paraffin oil, sterilized	250	-	-

1		H	G	F	E	D	C	B	A
		URE	ARG	ORN	bGA	GLR	ESL	NIT	PHS
+	⊕	●	●	●	●	●	●	●	●
	⊖	●	●	●	○	○	○	○	○
2		H	G	F	E	D	C	B	A
		GAL	SUC	TRE	MAN	XYL	MLT	MNS	LAC
+	⊕	●	●	●	●	●	●	●	●
	⊖	●	●	●	●	●	●	●	●

	VPtest
⊕	●
⊖	○

	OXI Test
⊕	●
⊖	○

	PYRA Test
⊕	●
⊖	○

ErbaExpert/Codebook:

Aerococcus viridans, Dermacoccus nishinomiyaensis, Kocuria kristinae, Kocuria rosea, Kocuria varians, Macroccoccus bovicus, Macroccoccus caseolyticus, Macroccoccus carouselicus, Macroccoccus equipersicus, Microccoccus sp., Rothia mucilaginosa, Staphylococcus arlettae, Staphylococcus aureus subsp. anaerobius, Staphylococcus auricularis, Staphylococcus capitis subsp. ureolyticus, Staphylococcus capitis subsp. capitis, Staphylococcus caprae, Staphylococcus chromogenes, Staphylococcus cohnii subsp. urealyticum, Staphylococcus cohnii subsp. cohnii, Staphylococcus delphini, Staphylococcus epidermidis, Staphylococcus equorum, Staphylococcus felis, Staphylococcus gallinarum, Staphylococcus haemolyticus, Staphylococcus hyicus, Staphylococcus intermedius, Staphylococcus kloosii, Staphylococcus lentus, Staphylococcus lugdunensis, Staphylococcus muscae, Staphylococcus pasteurii, Staphylococcus piscifermentans, Staphylococcus saprophyticus subsp. saprophyticus, Staphylococcus schleiferi subsp. schleiferi, Staphylococcus schleiferi subsp. coagulans, Staphylococcus simulans, Staphylococcus warneri, Staphylococcus xylosum, Staphylococcus saprophyticus subsp. bovis, Staphylococcus carnosus subsp. carnosus, Staphylococcus hominis subsp. hominis, Staphylococcus vitulinus, Staphylococcus hominis subsp. novobiocin, Staphylococcus condimentii, Staphylococcus carnosus subsp. utilis, Staphylococcus lutrae, Staphylococcus sciuri, Staphylococcus aureus subsp. aureus, Staphylococcus petrasii subsp. petrasii, Staphylococcus petrasii subsp. croceolyticus, Staphylococcus petrasii subsp. jettensis, Staphylococcus petrasii subsp. pragensis

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STREPTOtest 24

STREPTOtest 24 is designed for definitive identification on species level of the genus *Streptococcus*, *Enterococcus* and related Gram-positive, catalase negative cocci isolated from clinical material. Kit contains 40 strips, each strip with 24 biochemical tests placed in the microwells. Standard off-line tests for screening of pyrrolidonylarylamidase activity (PYRAtest) and hippurate hydrolysis (HIPPURATEtest) are available separately. When recommended by evaluating software, the identification can be specified with VPtest, catalase or haemolytic activity. Each kit of STREPTOtest 24 contains 10 microplates, i.e. 40 determinations in total.

Type	Cat. nr.	Product	Nr. of exam.	Reagent req.	Susp. m. req.
Kit	MLT00015	STREPTOtest 24	40	no	yes
Additional tests (optional)	MLT00036	HIPPURATEtest	50	yes	-
	MLT00040	PYRAtest	50	yes	-
	MLT00041	VPtest	50	yes	-
Reagents - add. t. (not included)	MLT00019	Reagent for HIPPURATE test	200	-	-
	MLT00023	Reagent for PYR test	800	-	-
	MLT00016	Reagent for ACETOIN test	90	-	-
Other req. items (not included)	MLT00027	Suspension medium for STREPTOtest 24	20	-	-
	MLT00042	Paraffin oil, sterilized	370		

1		H NAG	G LAP	F bMN	E GLR	D bGL	C bGA	B αGA	A PHS
	⊕								
	⊖								
2		H ESL	G INU	F MAN	E SOR	D MLB	C RIB	B LAC	A PUL
	⊕								
	⊖								
3		H ARG	G SO6	F AMG	E TGT	D MLT	C RAF	B TRE	A SOE
	⊕								
	⊖								
		VPTest							
	⊕								
		PYRA Test							
	⊕								
		HIPPURATEtest							
	⊕								
	⊖								

ErbaExpert/Codebook:

Abiotrophia adiacens, *Abiotrophia defectiva*, *Aerococcus viridans*, *Alloicoccus otitis*, *Dolosicoccus paucivorans*, *Enterococcus avium*, *Enterococcus casseliflavus*, *Enterococcus cecorum*, *Enterococcus columbae*, *Enterococcus durans*, *Enterococcus faecalis*, *Enterococcus faecium*, *Enterococcus gallinarum*, *Enterococcus mundtii*, *Enterococcus pseudoavium*, *Enterococcus saccharolyticus*, *Enterococcus malodoratus / raffinosus*, *Enterococcus hirae / dispar*, *Facklamia sourekii*, *Gemella sp.*, *Globicatella sanguinis*, *Helcococcus kunzii*, *Lactococcus garvieae*, *Lactococcus lactis subsp. cremoris*, *Lactococcus lactis subsp. lactis*, *Leuconostoc spp.*, *Streptococcus acidominimus*, *Streptococcus agalactiae*, *Streptococcus bovis biovar I*, *Streptococcus bovis biovar II 1*, *Streptococcus bovis biovar II 2*, *Streptococcus canis*, *Streptococcus dysgalactiae subsp. dysgalactiae*, *Streptococcus dysgalactiae subsp. equisimilis*, *Streptococcus equi subsp. zooepidermicus*, *Streptococcus equi subsp. equi*, *Streptococcus intermedius*, ...

ErbaExpert/Codebook:

Streptococcus mutans, Streptococcus pneumoniae, Streptococcus porcinus, Streptococcus pyogenes, Streptococcus suis, Streptococcus uberis, Streptococcus mitis / oralis, Streptococcus anginosus / constellatus, Streptococcus salivarius / vestibularis, Streptococcus cristatus / gordonii, Streptococcus sanguinis / parasanguinis

* Code book may contain limited list of microorganisms, visit our website to download code books or contact your local representative

EN-COCCUStest

EN-COCCUStest is designed for routine species identification of clinically important strains of the genus *Enterococcus* within 24 hours. The kit contains 8 biochemical tests which are placed in a short 8-well strip of a divided microplate. PYRAtest, available in the form of detection strip, can be used as a screening test to class a suspect culture in the genus *Enterococcus*. Each kit of EN-COCCUStest contains 3 microplates, i.e. 36 determinations in total.

Type	Cat. nr.	Product	Nr. of exam.	Reagent req.	Susp. m. req.
Kit	MLT00004	EN-COCCUStest	36	no	no
Additional tests (optional)	MLT00040	PYRAtest	50	yes	-
Reagents - add. t. (not included).	MLT00023	Reagent for PYR test	800	-	-
Other req. items (not included)	MLT00042	Paraffin oil, sterilized	540	-	-

	H ARG	G SOE	F ARA	E MAN	D SOR	C MLB	B RAF	A MLZ
⊕								
⊖								

	PYRA Test
⊕	
⊖	

ErbaExpert/Codebook:

Enterococcus avium, Enterococcus casseliflavus, Enterococcus cecorum, Enterococcus columbae, Enterococcus dispar, Enterococcus durans, Enterococcus faecalis, Enterococcus faecium, Enterococcus gallinarum, Enterococcus hirae, Enterococcus malodoratus, Enterococcus mundtii, Enterococcus pseudoavium, Enterococcus raffinosus, Enterococcus saccharolyticus, Enterococcus faecalis asaccharolytic biovar, Enterococcus solitarius, Enterococcus sulfureus

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NEISSERIAtest

NEISSERIAtest identification kit is designed for identification of clinically important *Neisseriae*, particularly, *N. gonorrhoeae* and *N. meningitidis*, and *Moraxella (Branhamella) catarrhalis* in 24 hours. The kit is placed in a short 8-well strip of a divided microplate. The first evaluation of results is carried out after 4 hours of incubation; the final results are read after 24 hours. Each kit of NEISSERIAtest contains 3 microplates, i.e. 36 determinations in total.

Type	Cat. nr.	Product	Nr. of exam.	Reagent req.	Susp. m. req.
Kit	MLT00011	NEISSERIAtest	36	no	yes
Additional tests (optional)	MLT00038	ONPtest	50	no	-
	MLT00039	OXItest	50	optional	-
	MLT00087	V+K DISC	100	-	-
Reagents - add. t. (not included)	MLT00022	Reagent for OXIDASE test	250	-	-
Other req. items (not included)	MLT00025	Suspension medium for NEISSERIAtest	18	-	-

	H	G	F	E	D	C	B	A
	NEG	GLU	MLT	FRU	SUC	GGT	TRB	SPS
+		 	 	 	 	 	 	 
-		 	 	 	 		 	

	OXI Test
+	 
-	

	ONP Test
+	 
-	

ErbaExpert/Codebook:

Moraxella (Branhamella) catarrhalis, *Neisseria gonorrhoea*, *Neisseria meningitidis*, *Neisseria lactamica*, *Neisseria polysaccharea*, *Neisseria subflava*, *Neisseria flavescens*, *Neisseria cinerea / elongata*, *Neisseria sicca / mucosa*

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URE-HPtest

The URE-HPtest kit is designed for rapid detection of *Helicobacter pylori* in bioptic samples within 4 hours depending on urease activity. *H. pylori* detection is based on the enzymatic hydrolysis of urea - the strong urease activity is discriminative for *H. pylori*. To establish final diagnosis, confirmation by a microscopic examination is needed. Each kit of URE-HPtest contains 3 microplates, i.e. 288 determinations in total.

Type	Cat. nr.	Product	Nr. of exam.	Reagent req.	Susp. m. req.
Kit	MLT00033	URE-HPtest	288	no	no
Additional tests (optional)	MLT00042	Paraffin oil, sterilized	750	-	-

	URE-HPtest
+	
-	

ANAERObest 23

ANAERObest 23 is designed for routine identification of anaerobic bacteria, most frequently occurring in clinical material and food. The kit contains 23 biochemical tests, which are placed in 3 rows (triple-strips) of a divided microplate. By means of this kit and additional microscopic examination, it is possible to identify more than 90 taxons of anaerobic bacteria. Each kit of ANAERObest 23 contains 10 microplates, i.e. 40 determinations in total.

Type	Cat. nr.	Product	Nr. of exam.	Reagent req.	Susp. m. req.
Kit	MLT00001	ANAERObest 23	40	no	yes
Reagents - kit (not included)	MLT00020	Reagent for INDOLE test	310	-	-
	MLT00021	Reagent for NITRATE test	460	-	-
Other req. items (not included)	MLT00024	Suspension medium for ANAERObest 23	20	-	-
	MLT00042	Paraffin oil, sterilized	750	-	-

1		H	G	F	E	D	C	B	A
		IND	GLU	MLT	FRU	GAL	LAC	MLZ	URE
	+								
2		H	G	F	E	D	C	B	A
		NIT	SUC	SAL	TRE	MAN	RHA	NAG	bGL
	+								
3		H	G	F	E	D	C	B	A
		ESL	MNS	RAF	CEL	XYL	ARA	SOR	CON
	+								
3		H	G	F	E	D	C	B	A
		ESL	MNS	RAF	CEL	XYL	ARA	SOR	CON
	-								

ErbaExpert/Codebook:

Acidaminococcus fermentans, Actinomyces israelii, Actinomyces meyeri, Actinomyces naeslundii, Actinomyces odontolyticus, Actinomyces viscosus, Anaerococcus prevotii, Atopobium minutum, Atopobium parvulum, Bacteroides eggerthii, Bacteroides fragilis, Bacteroides ovatus, Bacteroides thetaiotaomicron, Bacteroides uniformis, Bacteroides vulgatus, Bifidobacterium adolescentis, Bifidobacterium breve, Bifidobacterium dentium, Bifidobacterium longum subsp. infantis, Bifidobacterium longum subsp. longum, Blautia producta, Blautia hansenii, Campylobacter gracilis, Campylobacter ureolyticus, Capnocytophaga ochracea, Clostridium baratii, Clostridium bifermentans, Clostridium botulinum biovar A, Clostridium botulinum biovar B, Clostridium butyricum, Clostridium cadaveris, Clostridium chauvoei, Clostridium clostridioforme, Clostridium difficile, Clostridium glycolicum, Clostridium histolyticum, Clostridium innocuum, Clostridium limosum, Clostridium novyi biovar A, Clostridium paraputrificum, Clostridium perfringens, Clostridium ramosum, Clostridium septicum, Clostridium sordellii, Clostridium sporogenes, Clostridium tertium, Clostridium tetani, Collinsella aerofaciens, Eggerthella lenta, Eubacterium contortum, Eubacterium limosum, Eubacterium saburreum, Eubacterium tortuosum, Finegoldia magna, Fusobacterium mortiferum, Fusobacterium necrophorum subsp. necrophorum, Fusobacterium nucleatum subsp. nucleatum, Fusobacterium varium, Gemella morbillorum, Lactobacillus acidophilus, Lactobacillus cateniformis, Lactobacillus fermentum, Lactobacillus jensenii, Leptotrichia buccalis, Megasphaera elsdenii, Mitsukella multacida, Odoribacter splanchnicus, Parabacteroides distasonis, Parvimonas micra, Peptococcus niger, Peptoniphilus asaccharolyticus, Peptostreptococcus anaerobius, Porphyromonas asaccharolytica, Prevotella bivia, Prevotella disiens, Prevotella intermedia, Prevotella melaninogenica, Prevotella oralis, Propionibacterium propionicum, Propionibacterium acnes, Propionibacterium granulosum, Pseudoflavonifractor alactolyticus, Veillonella parvula

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CANDIDAtest 21

The non-reagent identification kit CANDIDAtest 21 is designed for a routine identification of 34 species of the most clinically relevant yeasts. The kit comes with 21 biochemical tests for each strain (chromogenic substrates, decarboxylase and assimilations), which are placed in 3 rows (triple-strips) of a divided microplate. Three negative control tests are placed in each identification. Each kit of CANDIDAtest 21 contains 5 microplates, i.e. 20 determinations in total.

Type	Cat. nr.	Product	Nr. of exam.	Reagent req.	Susp. m. req.
Kit	MLT00002	CANDIDAtest 21	20	no	no

1		H NGA	G α-GLU	F β-GLU	E ONC	D GENA	C GLU	B GAL	A MALA
	⊕	● ●	● ●	● ●		●	●	●	●
	⊖	○	○	○	○	○	○	○	○
2		H α-GAL	G PHE	F URE	E UCO	D RHA	C INO	B TRE	A LAC
	⊕	● ●	● ●	● ●		●	●	●	●
	⊖	○	○	● ●	● ●	○	○	○	○
3		H PRO	G PGUR	F MEL	E ACO	D XYL	C CEL	B SUC	A RAF
	⊕	● ●	● ●	●		●	●	●	●
	⊖	○	○	○	○	○	○	○	○

ErbaExpert/Codebook:

Candida africana, *Candida albicans*, *Candida catenulata*, *Candida dubliniensis*, *Candida famata*1 *Candida famata*2, *Candida famata*3, *Candida famata*4, *Candida glabrata*, *Candida guilliermondii*, *Candida inconspicua*, *Candida intermedia*, *Candida kefir*, *Candida krusei*, *Candida lambica*, *Candida lipolytica*, *Candida lusitanae*, *Candida magnoliae*, *Candida membranifaciens*, *Candida norvegensis*, *Candida norvegica*, *Candida parapsilosis*, *Candida pelliculosa*, *Candida rugosa/pararugosa*, *Candida tropicalis*, *Candida utilis*, *Candida valida*, *Cryptococcus albidus*, *Cryptococcus humicola* complex, *Cryptococcus neoformans*, *Cryptococcus terreus*, *Geotrichum candidum*, *Geotrichum capitatum*, *Rhodotorula glutinis*, *Rhodotorula mucilaginosa*, *Saccharomyces cerevisiae* TRE-, *Saccharomyces cerevisiae* TRE+, *Trichosporon* sp., *Trichosporon* sp. RAF- MEL-

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CANDIDA-Screen

The diagnostic kit CANDIDA-Screen is designed to screen 13 of the most frequent clinically significant yeast species. CANDIDA-Screen is placed in wells of a one-strip microtitration plate. Each kit of CANDIDA-Screen contains 3 microplates, i.e. 36 determinations in total.

Type	Cat. nr.	Product	Nr. of exam.	Reagent req.	Susp. m. req.
Kit	MLT00003	CANDIDA-Screen	36	no	no
Other req. items (not included)	MLT00042	Paraffin oil, sterilized	40	-	-

		H URE	G SUC	F MLT	E LAC	D GAL	C TRE	B CEL	A PRO
⊕		● ●	● ●	● ●	● ●	● ●	● ●	● ●	● ●
⊖		● ●	● ●	● ●	● ●	● ●	● ●	● ●	○

ErbaExpert/Codebook:

Candida albicans, *Candida glabrata*, *Candida kefir*, *Candida krusei*, *Candida lipolytica*, *Candida lusitanae*, *Candida parapsilosis*, *Candida guilliermondii*, *Candida tropicalis*, *Cryptococcus neoformans*, *Geotrichum* sp. *Saccharomyces cerevisiae*, *Trichosporon* sp.

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Identification aids

Code books

Code books contain an organized list of combinations of (+/-) results of individual tests expressed in the form of numeric values – so called profiles. Profiles are arranged in the ascending order according to their numeric value. This system enables rapid orientation in the code book. Even results containing one or two atypical tests for an identified bacterial type can be evaluated correctly. Each profile in the list provides the following data:

- a/** percentage of identification (% id) an estimate saying how closely the profile corresponds to a taxon relative to the other taxa in the database
- b/** the T-index (Tin) an estimate expressing how closely the profile corresponds to the most typical set of reactions for each taxon. Its value varies between 0 and 1 and is inversely proportional to the number of atypical tests
- c/** the list of the tests against (T.against) – for the first listed taxon, if any, followed by the percentage of positive reactions
- d/** comment, created on the base of the values % id and Tin, defining the level of identification reliability.



Code book can be downloaded from our website:
www.erbalachema.com/codebook

Profile calculation

Example of profile 371 calculation:

- Separate test results of the strain tested into groups of three
- To each positive test in the group of three, assign the following value of:
 - 1 to the 1st test
 - 2 to the 2nd test
 - 4 to the 3rd test
- Negative test: assign 0 (zero) to all negative test results
- Add up the numeric values in the groups of three
- Resultant number combination forms a profile

Profiles are arranged in the index in the ascending order according to their numeric value; indexes are a part of the instructions of the ENTERO-Screen, EN-COCCUStest kits and CANDIDA-Screen.

GLU	VPT	PHE	IND	URE	SUC	LYS	ORN
+	+	-	+	+	+	+	-
1	2	0	1	2	4	1	0
3			7			1	

Profile 371: *Klebsiella oxytoca*



For advanced, fast, software-aided evaluation of our kits,
we recommend to use our ErbaExpert.
Please see page 35 for details.

Diagnostic strips

MIKROLATEST® detection strips are plastic strips with a porous zone made from filter paper containing reagent substrate for detection of bacterial enzyme or metabolite. Strips are a modern, user-friendly and economical alternative to diagnostic discs. According to their types, the bacterial culture tested is either rubbed into the reagent zone or the strip is inserted into a tube containing an examined bacterial suspension and cultured. The detection strips are used either together with MIKROLATEST® identification kits for the additional testing or separately. In some cases, additional reagents should be used in order to improve reaction sensitivity. One strip package is sufficient for 50 examinations.

Features of MIKROLATEST® detection strips:

- user-friendly – easy manipulation without any other aids
- reliable quality – standard and reproducible results
- fast detection – results available within 1 minute, 1-4 minutes or not later than within 48 hours, according to the test and the microorganism type

MIKROLATEST® detection strips include:

- plastic tube containing 50 pcs of strips
- instructions for use

Storage:

Detection strips should be stored in a refrigerator at the temperature of +2 up to +8 °C.

OXItest

RAPID

OXItest detection strip is designed for bacterial cytochromoxidase detection. Its presence is detected by a colour reaction of N,N-dimethyl-1,4-phenylenediamine with α -naphthol accompanied by formation of indophenol blue. Iron, contained in a cytochrome molecule, is responsible for cytochrome oxidation/reduction process. To avoid the interference due to iron ions, it's necessary to use plastic or platinum loop when carrying out this test.

Reaction sensitivity can be increased by the relevant OXItest reagent: Prior to strain application, the strip zone is wetted with the reagent without oversaturation. The test is carried out by spreading a pure bacterial culture on the impregnated strip zone or by pressing the strip directly on a bacterial colony on culture medium. Test result is read within 1 minute.

Reaction interpretation:

	OXI Test
+	
-	

Optional preparations: Reagent for OXItest

Diagnostic strips

PYRAtest

RAPID

Hydrolysis is detected by Reagent for PYR test and demonstrated in red coloration. The test can also be used individually as a differential test for the *Enterobacteriaceae* family strains and *Staphylococcus* genus, or as a supplementary test to identification kits MIKROLATEST®. PYRAtest allows to perform 50 determinations.

Reaction interpretation:

	PYRA Test
+	 
-	

Additional preparations: Reagent for PYR test

β-LACTAMtest

RAPID

β-LACTAMtest is designed for rapid acidometric detection of bacterial β-lactamase activity. This acidometric method is recommended for testing β-lactamase production by *Neisseria* species, *Haemophilus* species and *Staphylococcus* species. Lactamase enzyme hydrolyses benzylpenicillin contained in the reaction zone, and causes colour change of pH indicator in the detection zone due to pH shift.

Reaction interpretation:

	β-LACTAM Test
+	
-	

INDOXYLtest

RAPID

INDOXYLtest detection strip is designed for rapid acetate-esterase detection of *M. catarrhalis*, *Campylobacter* sp., etc. The test is based on a principle of hydrolysis of the active substrate, i.e. 3-indoxyl-acetate, to the leuco form of indigo. Blue colour of the diagnostic zone is regarded as a positive proof of acetate-esterase activity of the respective microorganism.

Reaction interpretation:

	INDOXYLtest
+	
-	

Diagnostic strips

ONPtest

ONPtest is designed for the β -galactosidase detection. β -galactosidase is an intracellular enzyme catalyzing the cleavage of lactose. Lactose fermentation into monosaccharides galactose and glucose is dependent on another enzyme – permease, which is necessary for the penetration of lactose into the bacterial cell. In the absence of permease, a β -galactosidase-positive organism will not ferment lactose. In such cases it is advantageous to use ONPtest. Enzyme β -galactosidase hydrolyses the colourless substrate of O-nitrophenyl- β -galactopyranoside; the positive reaction is detected by yellow colouring of free O-nitrophenol. The strip is dipped into a defined bacterial suspension and incubated. Reaction can be evaluated within 4, 24 or 48 hours according to the strain type.

Reaction interpretation:

	ONP Test
+	 
-	

HIPPURATEtest

Detection strip HIPPURATEtest is designed for the determination of bacteria ability to hydrolyse Natrium hippurate. Enzyme Hippurate hydrolase splits Natrium hippurate into glycine and benzoic acid. Glycine liberated by Natrium hippurate hydrolysis is detected by the colour reaction with ninhydrin contained in the Reagent for HIPPURATE test.

the strip is dipped into the strain suspension and incubated for 22-24 hours. Reagent for HIPPURATEtest is added, reaction is evaluated after additional 5-10 minutes. HIPPURATEtest is recommended for the presumptive identification of Group B streptococci, *Gardnerella vaginalis* and *Campylobacter jejuni*.

Reaction interpretation:

	HIPPURATEtest
+	 
-	

Additional preparations: Reagent for HIPPURATEtest

Diagnostic strips

COLtest

COLtest is a highly specific test for rapid identification of *Escherichia coli* using detection of β -glucuronidase activity and indole formation. Enzyme β -glucuronidase cleaves 4-methyl-umbelliphenyl- β -D-glucuronide (MUG), the 4-umbelliphenon is formed and it shows blue fluorescence under UV light source. Indole formation from L-tryptophan is detected by red colouring after adding the Reagent for INDOLE test. Combination of positive β -glucuronidase and indol reactions shows approx. 95% specificity for *Escherichia coli*. COLtest can also be successfully used for the presumptive identification of enterohaemorrhagic *Escherichia coli* O 157 H:7 with typical combination of negative β -glucuronidase and positive indol reactions. β -glucuronidase test can also be used for the differentiation in other bacterial groups, e.g. staphylococci.

The strip is dipped into a defined strain suspension and incubated for 4 hours. The preliminary reading of β -glucuronidase reaction under UV-lamp is possible within 1 hour; after 4 hours of incubation, the Reagent for INDOLE test is added and indole reaction is visually evaluated.

Reaction interpretation:

Reaction	MUG (fluorescence)	IND (colour reaction)
Positive	blue fluorescence	red, pink
Negative	no fluorescence	yellow, yellowish

Additional preparations: Reagent for INDOLE test, UV lamp

VPtest

VPtest is designed for the rapid detection of acetoin formation (Voges-Proskauer test). Natrium pyruvate is used as the substrate for acetoin formation. The strip is dipped into a defined strain suspension and incubated for 2 – 4 hours. After incubation, reagents VPT I and VPT II are added and incubation is continued for 30 more minutes. Red colour indicates acetoin formation.

Reaction interpretation:

	VPtest
+	
-	

Additional preparations: Reagent for ACETOIN test

Type	Cat. nr.	Product	Nr. of exam.	Reagent req.
Diagnostic Strips	MLT00039	OXtest	50	yes
	MLT00038	ONPtest	50	no
	MLT00036	HIPPURATetest	50	yes
	MLT00041	VPtest	50	yes
	MLT00035	COLtest	50	yes
	MLT00040	PYRAtest	50	yes
	MLT00034	β -LACTAMtest	50	no
	MLT00037	INDOXYLtest	50	no
Reagents (not included)	MLT00022	Reagent for OXIDASE test	250	-
	MLT00019	Reagent for HIPPURATE test	200	-
	MLT00016	Reagent for ACETOIN test	270/90*	-
	MLT00020	Reagent for INDOLE test (used in COLtest)	310/70*	-
	MLT00023	Reagent for PYR test	800/130**	-

* Number of examinations for identification kits / detection strips

** Number of examinations for detection strips / tube method

Diagnostic discs

Diagnostic discs MIKROLATEST® are paper filter discs containing a defined concentration of a dehydrated reagent substrate for detection of specific bacterial activity. They enable simple differentiation of bacteria by means of growth test directly on the culture medium.

Assortment of discs:

BACITRACIN 10 UI

Diagnostic discs BACITRACIN 10 UI are designed for selective isolation of *Haemophilus* spp. The test is based on the resistance of *Haemophilus* spp. to high concentration of bacitracin in comparison with accompanying flora, moreover it demonstrates ability of the satellite growth of *Haemophilus* spp. in the zone of diffusion of exogenous growth factors from staphylococci culture.

BACITRACIN S

Diagnostic discs BACITRACIN S are designed for simple routine presumptive determination of β -hemolytic Group A streptococci. β -haemolytic group A streptococci are highly susceptible to low concentration of bacitracin (0.04 UI), thus creating defined inhibition zone around the disc BACITRACIN S. Other β -hemolytic streptococci are resistant to this concentration or show just a very small zone of inhibition.

OPTOCHIN

Diagnostic discs OPTOCHIN are designed for simple routine presumptive detection of *Streptococcus pneumoniae*. Test is based on the susceptibility of *Streptococcus pneumoniae* to optochin (ethylhydrocuprein hydrochloride). *Streptococcus pneumoniae* shows a defined zone of inhibition around the impregnated disc after the incubation. Other viridans-group streptococci are resistant to optochin or show a very small zone of inhibition.

V+K DISK

Diagnostic discs V+K DISK are designed for the selective isolation of *Neisseria meningitidis*. In the place of diffusion of antibiotics (vancomycin+colistin) from disc, the zone of partially selective medium is created, thus inhibiting the growth of accompanying flora.

NOVOBIOCIN

Diagnostic discs NOVOBIOCIN are designed for differentiation of coagulase negative staphylococci by means of growth test. The test is based on the natural resistance of some species of coagulase negative staphylococci to Novobiocin.

X – FAKTOR, V – FAKTOR, X+V – FAKTOR

Diagnostic discs X – FAKTOR, V – FAKTOR, X+V – FAKTOR are designed for simple routine differentiation of *Haemophilus* spp. from clinical material. Members of the genus *Haemophilus* are dependent on exogenous growth factors X (hemin) and V (NAD) in media free of these factors. Tested strain shows growth only around the disc containing required essential factor.

NITROCEFİN

Diagnostic discs NITROCEFİN are designed for the rapid detection of β -lactamase enzyme in *Neisseria gonorrhoeae*, *Moraxella catarrhalis*, *Staphylococcus* spp., *Haemophilus influenzae* and anaerobic bacteria. Nitrocefın is a chromogenic cephalosporin that has been found to be effective in detection of all known β -lactamase enzymes. β -lactamase enzymes hydrolyse amide bonds in the β -lactam ring of nitrocefın resulting in a distinctive colour change from yellow to red.

Advantages of diagnostic discs MIKROLATEST®:

- in combination with other products MIKROLATEST® possibility of complex procedure and rationalization of examination
- simple to use
- cost-saving

Cat. nr.	Product	Nr. of exam.
MLT00083	BACITRACIN 10 UI	100
MLT00084	BACITRACIN S	100
MLT00086	OPTOCHIN	100
MLT00087	V+K DISK	100
MLT00085	NOVOBIOCIN	100
MLT00088	V-FAKTOR	100
MLT00089	X-FAKTOR	100
MLT00090	X+V FAKTOR	100
MLT00031	NITROCEFİN	50

Products for water microbiology

Beside the products generally applicable for the bacterial identification in all fields of diagnostic microbiology, Erba Lachema s.r.o. provides MIKROLATEST® products developed especially for microbiological water examination. They are designed for rapid, quantitative presumptive determination of some important bacteria in water by using method of membrane filtration. These products are filter paper discs impregnated with reagent substrate for the detection of specific bacterial activity. The diameter of discs is compatible with the diameter of standard membrane filters. The kits provide 15 determinations.

mOXItest

mOXItest is designed for rapid quantitative detection of cytochromeoxidase positive bacteria. The presence is detected by a colour reaction of N,N-dimethyl 1.4-phenylenediamine with α -naphthol, accompanied by indophenol formation. The test is carried out by transferring a membrane filter with colonies on moistened pad of mOXItest and evaluation of oxidase reactions within 1-2 minutes.

Advantages of mOXItest:

- rapid determination – result within 2 min.
- quantitative determination of oxidase positive bacteria in water
- simple to use

mCOLItest

mCOLItest is designed for rapid quantitative presumptive detection of *Escherichia coli*. The principle of the method is based on detection of β -glucuronidase, enzyme characteristic for *Escherichia coli*. Enzyme β -glucuronidase hydrolyses substrate 4-methylumbelliphenyl- β -D-glucuronide, which is contained in nutritive pad mCOLItest. The reaction forms 4-methylumbellipheron that shows blue fluorescence under UV light source.

Advantages of mCOLItest:

- rapid determination – result within 4 hours in comparison with standard agar culture
- primary culture of membrane filters on any suitable agar for coliforms
- simple to use

Cat. nr.	Product	Nr. of exam.
MLT00030	mOXItest	15
MLT00029	mCOLItest	15
50001471	UV lamp 366nm	-

ErbaExpert microbiology software is an intuitive and convenient tool dedicated for evaluation of all MIKROLATEST ID, MIKROLATEST MIC and MIKROLATEST BP products.

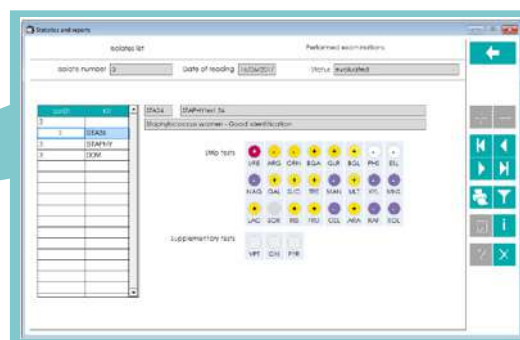
ErbaExpert can be operated either with ErbaScan reader for automated evaluation, or independently for manual evaluation. ErbaExpert offers full modularity in Patient management, Sample and Isolates registration, Identification and Antibiotic susceptibility tests reading and Expert evaluation of clinically relevant samples. Customers can choose from different operating modes: Sample to isolates registration leading to final evaluation of causative agents; or Parallel mode enabling independent registration of identification and susceptibility testing results; and other customizable modes.

Expert system combines data from ID and AST tests and based on EUCAST and CLSI interpretation rules recommends susceptible antibiotics, type of treatment or further steps. Expert system automatically warns the users in case of non-standard results, e.g. in contrast to intrinsic resistance or occurrence of rare phenotypes.

Users can take the advantage of possibility to using Erba Lachema s.r.o. diagnostic kits, as well as registering information from direct identification and disc diffusion methods. ErbaExpert enables to store and filter data to epidemiological and statistical reports and data archiving for easier auditability of the results.



Expert evaluation based on EUCAST and CLSI standards



Identification on all MIKROLATESTS



Antibiotic susceptibility testing on all MIC and BP tests

Cat. nr.	Product	Qty
INS00075	ErbaExpert	1 pc

ErbaScan - a universal 12-channel photometer

ErbaScan is a 12-channel microbiology reader processing 96-well microtiter plates as well as individual strips of MIKROLATEST ID, MIC and BP lines. ErbaScan automatically recognizes position and number of tests in the plate.

ErbaScan has been designed to fully support all MIKROLTEST kits by appropriate selection of high quality optics and precisely selected filters fully meeting the colour scale of biochemical reactions. ErbaScan reads the individual plates in 6 sec (antibiotic susceptibility test), respectively 15 s (identification). Users can take the advantage of ErbaScan/ErbaExpert system facilitating the reading and evaluation process as well as auditability of the final results.

- Range of wavelength: 405 – 730 nm
- Standard configuration: 405, 450, 532, 620 and 730 nm
- Measuring range: 0,000 – 4,000 OD
- Optics: 12 channels with one reference channel
- Reading speed for 1 filter: 6 s
- Control: External PC (not part of the package) with ErbaExpert software
- Communication interface: USB
- Power supply: 120-230V, 50-60 Hz
- Input: 30 W max
- Working conditions: Temperature 15 to 30 °C, RH max 80 %
- Dimensions: 426 x 280 x 174 (d x w x h) mm
- Weight: 7,2 kg



Cat. nr.	Product	Qty
INS00072	ErbaScan	1 pc

DENSILAMETER

Device for determination of bacterial inoculum density

Densi-La-Meter II is an easy-to-use optical device specially designed for comfortable and rapid determination of microbial density. Definition of microbial concentration is a very important initial standardizing step in microbial identification, susceptibility testing, as well as for other purposes. The instrument works on the principle of optical absorbance, measured values are displayed directly in McFarland units.

- Measuring range: 0 - 15 McF
- Calibration: 3-point
- Compatible tubes: dimension: Ø 15 - 18.5 mm; material: glass, PS
- Minimum sample volume: 2 ml
- Time of measurement: approx. 1 s
- Display: red, 2-digit
- Wavelength of light source: 525 nm
- Dimensions (W x D x H): 102 x 166 x 107 mm
- Weight: 1.04 kg



ErbaFill

User-friendly liquid handling system dedicated to fast and convenient filling of both predefined MIC panels and single MIC strips.

Maintenance, cleaning, calibration and sterilisation of the instrument is extremely intuitive. The user can fill up to 180 MIC microplates with suspension media within one hour.

- Dispensing method: Peristaltic pump
- Input format: a bottle with 200 ml of suspension medium (provided by supplier)
- Loading format: 96-well microplate or 8-well strips in a frame
- System throughput: 180 microplates (96-well) / hour
- Suspension medium volume: 100 µl dispensed, < 105 µl aspirated
- User interface: 7-button membrane keyboard
- Available modes: Purge, Fill, Aspirate, Sterilisation, Calibration
- Sterilisation method: built-in cleaning mode using ethanol
- Operating conditions: temperature 15-25 °C, humidity 15-85 % non-condensing
- Dimensions (W x H x D): 270 x 170 x 360 mm
- Weight: 6.9 kg
- Power supply: 12 V DC / 100-240 V AC 50-60 Hz



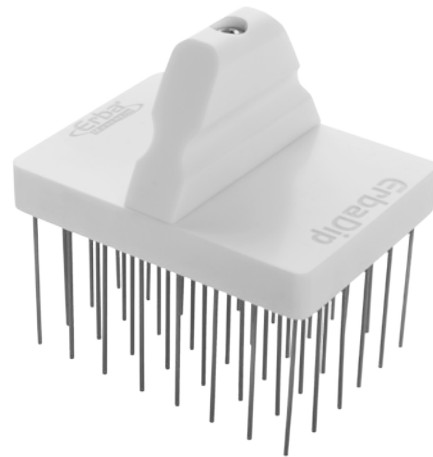
Accessories

ErbaDip

Smart and simple tool enabling fast inoculation of bacterial suspension into predefined MIC panels or single MIC strips.

An entire microplate can be inoculated by only 2 dips equipped with 48 pins. Simple flame sterilisation ensures zero carry-over procedure.

- Number of pins: 48
- Pin size: length 35 mm, Ø 1.1 mm
- Pin material: stainless steel
- Holder material: CORIAN
- Dimensions (W x H x D): 53 x 75 x 71 mm
- Weight: 105 g
- Colour: White



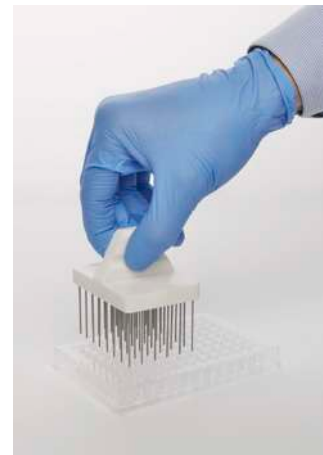
ErbaDip workflow



*Step 1:
Sterilisation
using gas burner*



*Step 2:
Taking the bacterial
suspension from Petri dish*



*Step 3:
Inoculation of bacterial
suspension
into the microwells*

VIAFLO Vision pipette

Electronic single channel pipettor designed for fast and convenient work with MIKROLATEST® and SENSILATEST kits

The pipette has a large digital multi-colour display and touch wheel menu selector for easier control of individual operations. Electronic pipette is made from light-weight and autoclavable components. A unique Tri-Lobe Tip Interface provides unmatched tips stability on the pipettes. Extended length tips enhance access into deep liquid vessels without danger of the pipette body contamination.

- Pipetting channels: single, eight
- Pipetting speed: 10 steps
- Pipetting technology: air displacement
- User interface: touch wheel, colour display
- Battery: rechargeable, Lithium Polymer, 3.7 V, 1050 mAh
- Power supply:
Input: 100-240 V, 50/60 Hz
Output: 6V, 0-1.75 A DC



VORTEX

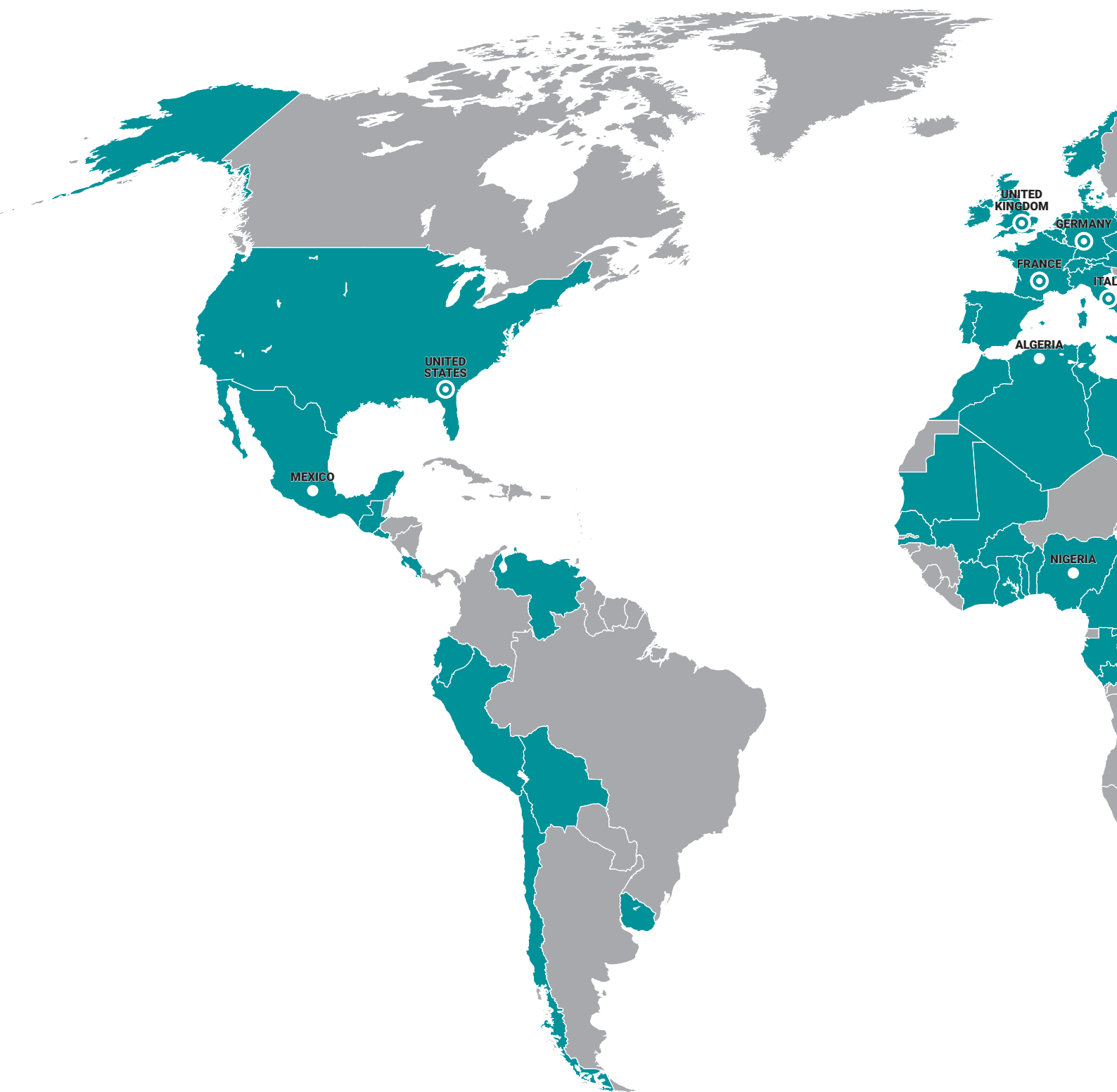
Thorough homogenization of microbial suspension

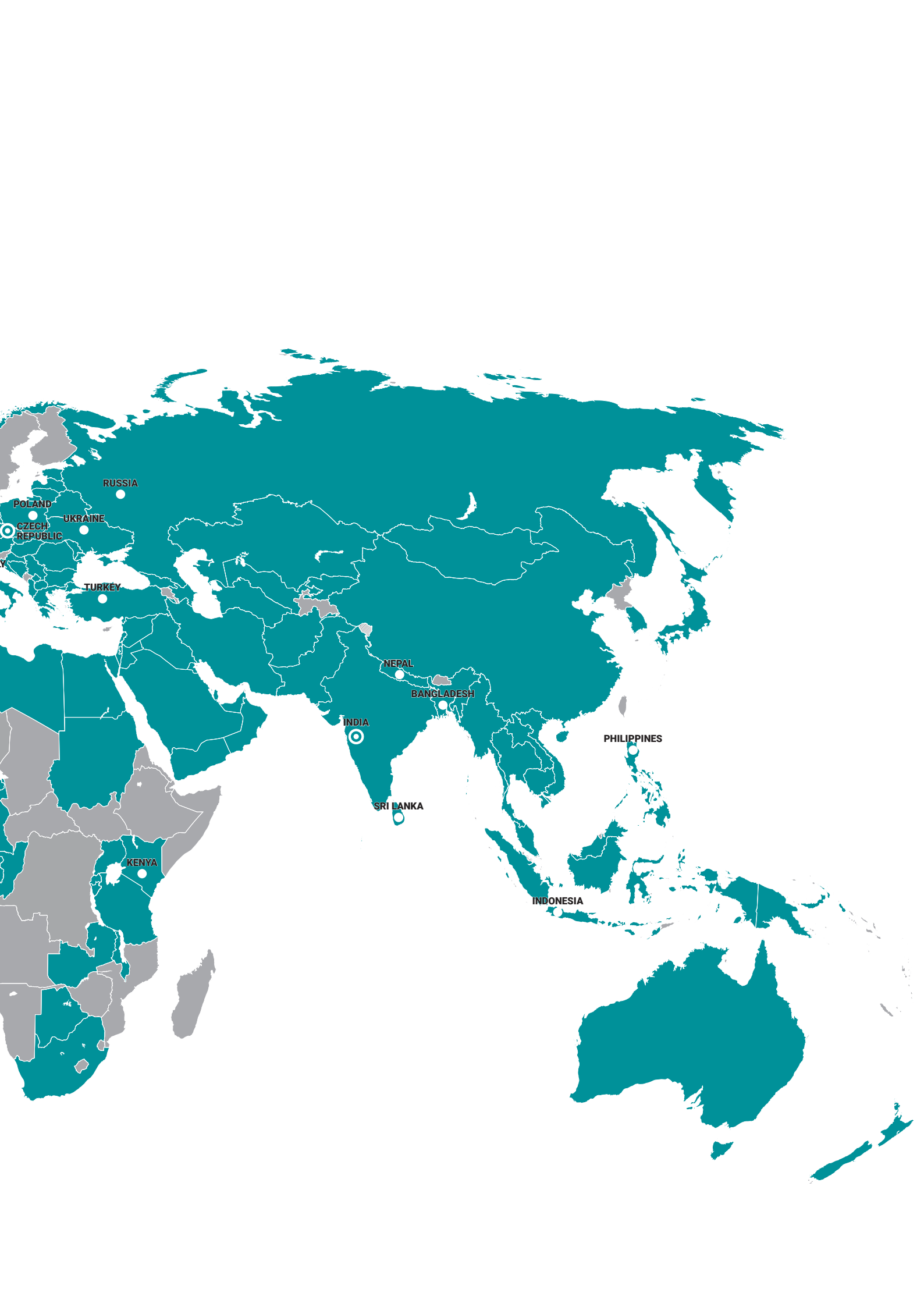
The device operates in a speed control range of 750-3000 rpm. Maximum mixing volume 30 ml, dimensions 90 x 150 x 80 mm (W x D x H) and weight 0.8 kg make the Vortex ideal for suspension homogenization.

Cat. nr.	Product	Qty
INS00062	DENSILAMETER II	1 pc
50001530	Tubes for DENSILAMETER II	20 pcs
50001715	Vortex	1 pc
INS00069	ErbaFill	1 pc
MLT00074	Suspension medium MIC 200	200 ml
MLT00075	Suspension medium MIC G+ 200	200 ml
50004456	ErbaDip	1 pc
50004297	VIAFLO Vision pipette 50-1250ul	1 pc
50004298	VIAFLO Vision adapter	1 pc
50004299	VIAFLO Vision tips 1250ul, sterile	5x96 pcs
50004316	VIAFLO Vision stand	1 pc



Dedicated to healing







MLT20180901EN

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