vitro
master diagnóstica®

DNA-Flow technology

Molecular diagnostic kits based on one-step multiplex PCR and reverse hybridisation on a membrane.

DNA-Flow technology

Speed

Sensitivity

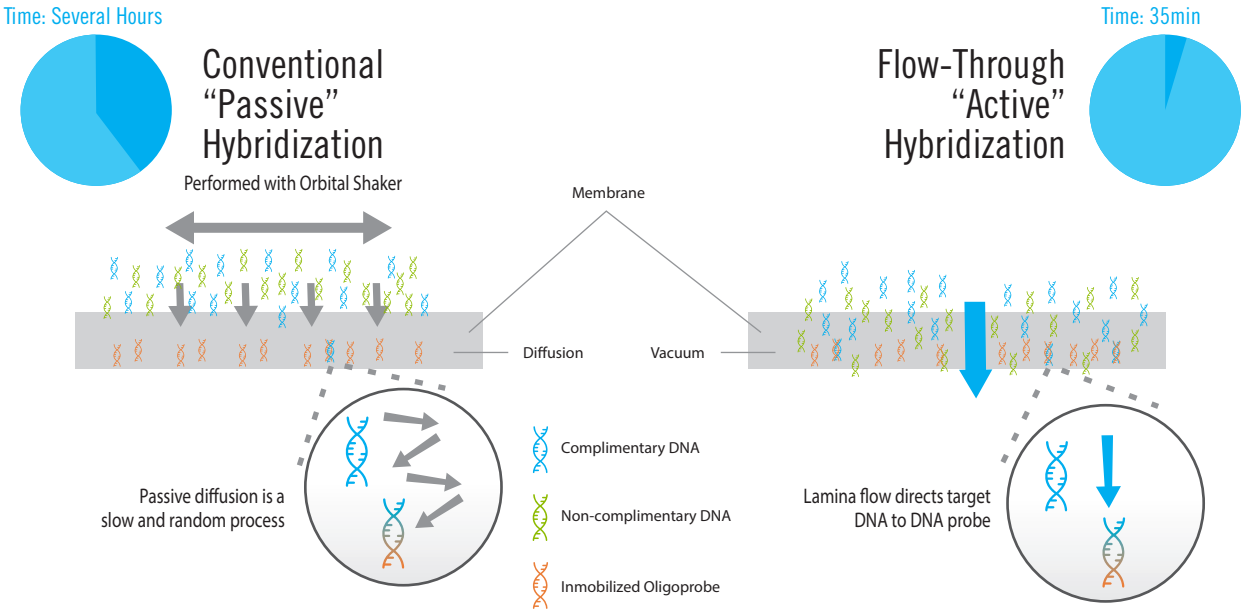
Multiplex

Flexibility

Vitro has a wide range of molecular diagnostic systems for the simultaneous detection of pathogen panels and markers, based on multiplex PCR or RT/PCR amplification and hybridisation using DNA-FLOW technology.

It is an innovative technology that uses automated flow-through reverse hybridisation on porous membrane-based microarrays that contain oligonucleotides specific to each marker. The target DNA molecules cross the membrane through a vertical vacuum flow, facilitating their interaction with the specific and complementary DNA probes immobilised on the porous membrane in a three-dimensional environment, unlike conventional dot blot technology in which hybridisation occurs passively. This accelerates the process and increases sensitivity, reducing reaction volumes and overall processing time from several hours to a few minutes.

Once binding has occurred between the specific amplicons and their corresponding probes, this is visualised by a colorimetric immunoenzymatic reaction with Streptavidin-Alkaline Phosphatase and the BCIP/NBT chromogen, forming insoluble precipitates on the membrane in those areas where hybridisation has occurred. The process is performed automatically in the hybriSpot™ platform and the results are analysed with the hybriSoft™ software.



HybriSpot Systems

Automatic systems

- Fully automated amplification, denaturation and hybridisation.
- Minimal handling.
- UV lamp for residual DNA/RNA decontamination.
- Automatic scanning of reagent barcodes.
- Barcode scanner compatible with any type of label.
- HybriSpot software for sample management, automatic image capture and automatic analysis of results.
- Connects to the LIS in the laboratory.

hybriSpot24 AUTO

REFERENCE: VIT-HS24A

hybriSpot 12 pcr auto

REFERENCE: VIT-HS12A

Manual system

- Hybridisation process guided via the instrument's display.
- 12 samples in 45 minutes.
- HybriSpot software for sample management, automatic image capture, automatic analysis of results.
- Compact size (350x230x200 mm) and weighs 4 kg.
- Suitable for laboratories with small numbers of samples.

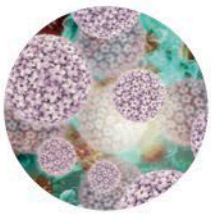
hybriSpot 12

REFERENCE: VIT-HS12

KITS

HPV DIRECT FLOW CHIP KIT

Detects and identifies HPV virus and simultaneously genotype 35 types of low- and high-risk HPV types



B	33	58	42	71	16	52	B	
B	35	59	43	72	18	53	6	69
C	39	66	44/55		26	56	11	70
U	45	68	54	84	31	58	40	71
16	51	73	61	B	33	59	44/55	72
18	52	82	62/81	C	35	66	54	
26	53	6	67	U	39	68	61	84
31	56	11	69	42	45	73	62/81	
	B	40	70	43	51	82	67	

Genotypes

High-risk: 16, 18, 26, 31, 33, 35, 39, 45, 51, 52, 53, 56, 58, 59, 66, 68, 73, 82.

Low-risk: 6, 11, 40, 42, 43, 44, 54, 55, 61, 62, 67, 69, 70, 71, 72, 81, 84.

Sample types:

- ✓ Liquid-based cytology
- ✓ Paraffin-embedded tissues
- ✓ Cytology swabs

Single lyophilised master mix ready for use

Uses a direct sample: DNA extraction is not necessary

REFERENCE:
MAD-003930MU-HS24-24
MAD-003930MU-HS24-48

FORMAT:
24 TEST
48 TEST

REFERENCE: MAD-003938M-HS I 24 TEST

STD DIRECT FLOW CHIP KIT

Simultaneous detection of 12 pathogens that cause sexually transmitted diseases

Pathogens

Chlamydia trachomatis (serovars A-K),

Chlamydia trachomatis (serovars L1-L3),

Haemophilus ducreyi,

Herpes simplex virus 1,

Herpes simplex virus 2,

Mycoplasma genitalium,

Mycoplasma hominis,

Neisseria gonorrhoeae,

Treponema pallidum,

Trichomonas vaginalis,

Ureaplasma (urealyticum/parvum).

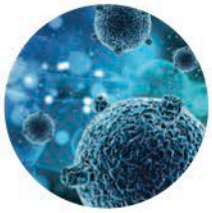
Sample types:

- ✓ Urine.
- ✓ Semen.
- ✓ Endocervical, pharyngeal, perianal, urethral and vaginal swabs.
- ✓ Liquid-based cytology.

Single lyophilised master mix ready for use.

Uses a direct sample: DNA extraction is not necessary.

B	MG				CTS-1		B	
B		MH				CTS-2		
CI	TV		UU-P		MG		UU-P	
BG		HD				MH		
	HSV-1/ HSV-2		NG	B	TV		NG	
		HSV-1		CI		HD		
	CTS-1		TP	BG	HSV-1/ HSV-2		TP	
		CTS-2				HSV-1		
	B		pcCT				pcCT	



REFERENCE: MAD-003946M-HS I 24 TEST

MDR FLOW CHIP KIT

Simultaneous detection of 5 bacterial species and 56 resistance markers

Sample types:

- ✓ Blood cultures.
- ✓ Rectal and nasal swabs and rectal and nasal swabs as a single sample.
- ✓ Bacterial colonies.

Two lyophilised master mixes ready for use.

Uses a direct sample: DNA extraction is not necessary.

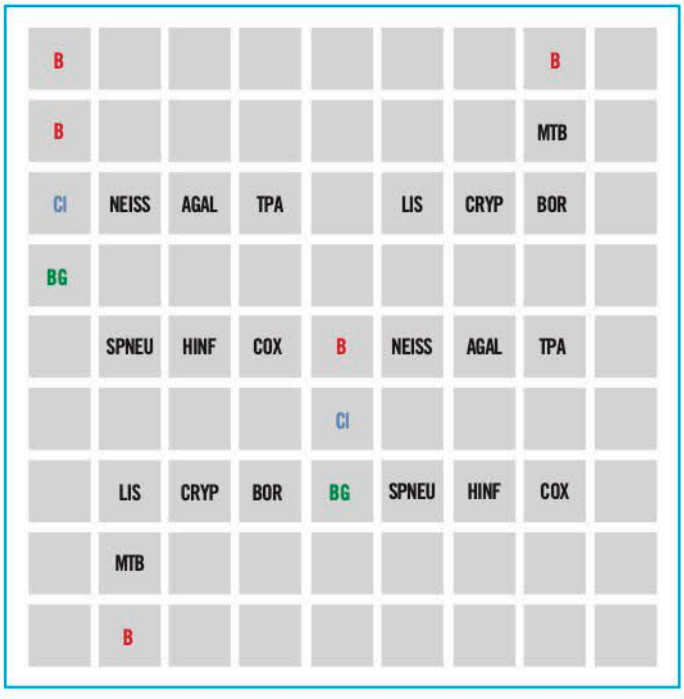
Resistance gene	Subclass
mecA	BETA-LACTAM
mecC	BETA-LACTAM
VanA	VANCOMYCIN
VanB	VANCOMYCIN
blaSHV* (detección de mutaciones fenotipo BLEE) (3)	CEPHALOSPORIN
blaCTX*	CEPHALOSPORIN
KPC*	CARBAPENEM
SME*	CARBAPENEM
NMC/IMI*	CARBAPENEM
GES*	CEPHALOSPORIN/CARBAPENEM
VIM*	CARBAPENEM
OXA_23_like*	CARBAPENEM
SPM*	CARBAPENEM
OXA_51_like*	CARBAPENEM
NDM*	CARBAPENEM
OXA_58_like*	CARBAPENEM
OXA_24_like*	CARBAPENEM
GIM*	CARBAPENEM
OXA_48_like*	CARBAPENEM
SIM*	BETA-LACTAM
IMP_3, 15, 19_like*	CARBAPENEM
cfr	MACROLIDE/LINCOSAMIDE/STREPTOGRAMIN
msrA	MACROLIDE
mef	MACROLIDE
ermA	MACROLIDE
ermB	MACROLIDE
ermC	MACROLIDE
aac(6')-Ib	AMIKACIN/KANAMYCIN/TOBRAMYCIN
armA	GENTAMICIN

Resistance gene	Subclass
rmtB*	AMINOGLYCOSIDE
rmtC	AMINOGLYCOSIDE
rmtF*	AMINOGLYCOSIDE
DHA*	CEPHALOSPORIN
CMY*	CEPHALOSPORIN
sul1	SULFONAMIDE
sul2	SULFONAMIDE
sul3	SULFONAMIDE
Point mutations in the *E.coli* DNA gyrase A subunit (4)	QUINOLONE
Point mutations in the *P. aeruginosa* DNA gyrase A subunit (3)	
Point mutations in the *E.coli* DNA topoisomerase IV A subunit (2)	
qnrA*	QUINOLONE
qnrB*	QUINOLONE
qnrS*	QUINOLONE
oqxA*	PHENICOL/QUINOLONE
oqxB*	PHENICOL/QUINOLONE
mcr1*	COLISTIN
mcr2*	COLISTIN
catB3	CHLORAMPHENICOL

Total: 56 resistance markers. *generic detection of these markers covering most allelic variants described to date

Bacteria

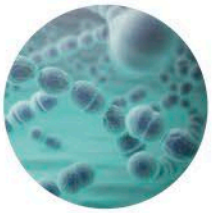
Staphylococcus aureus
Escherichia coli
Klebsiella pneumoniae
Pseudomonas aeruginosa
Acinetobacter baumannii



REFERENCE: MAD-003935M-HS I 24 TEST

BACTERIAL CNS FLOW CHIP KIT

Simultaneous detection of bacteria and fungi that cause central nervous system infections



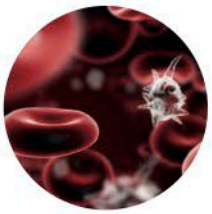
Bacteria and fungi

Mycobacterium tuberculosis complex, *Streptococcus pneumoniae, Streptococcus agalactiae, Haemophilus influenzae, Listeria monocytogenes, Treponema pallidum, Neisseria meningitidis, Coxiella burneti, Borrelia burgdorferi* and *Cryptococcus neoformans.*

Sample types:

- ✓ Purified DNA from cerebrospinal fluid.

Single master mix ready for use.



REFERENCE: MAD-003936M-HS I 24 TEST

SEPSIS FLOW CHIP KIT

Simultaneous detection of 36 bacterial species and 20 resistance markers

Sample types:
- ✓ Blood cultures.
- ✓ Rectal swabs.
- ✓ Bacterial colonies.

Two lyophilised master mixes ready for use.

Uses a direct sample: DNA extraction is not necessary.

Gram+ bacteria

Streptococcus spp.
Streptococcus pneumoniae
Streptococcus pyogenes
Streptococcus agalactiae
Coagulase-negative *staphylococcus*
Staphylococcus aureus
Listeria monocytogenes
Enterococcus spp.
Neisseria meningitidis

Gram- bacteria

Acinetobacter baumannii
Serratia marcescens
Klebsiella pneumoniae
Escherichia coli
Pseudomonas aeruginosa
Enterobacter spp.
Proteus spp./ Morganella morganii

Fungus

Candida spp.
Candida albicans

Resistance

Methicillin: mecA

Vancomycin: vanA and vanB

Carbapenemase: KPC, SME, NMC/IMI

GES, VIM, GIM, SPM, NDM, SIM, IMP3, 15, 19_like, OXA23_like, OXA24_like, OXA48_like, OXA51_like, OXA58_like

ß-lactamase: SHV and CTX-M

B		LIS	kpc	spm		ECOLI	vanB		B
B	ABAU	ENTEROC	sme	ndm		ENTEROB	vanA	ges	oxa23
CI	SMAR/ KLEB	PAER	nmc/imi	sim			mecA	vim	oxa24
BG	SAGAL	KLEB	SPYOG	imp	SMALTO	CALB		gim	oxa48
	STAPHYL	STREP	blaSHV		CAND		PROT/ MOR	kpc	oxa51
SPENU	SA	NEISS	blaCTX		B	ABAU	LIS	spm	oxa58
	ECOLI	PROT/ MOR	ges	oxa23	CI	SMAR/ KLEB	ENTEROC	sme	ndm
SMALTO	ENTEROB		vim	oxa24	BG	SAGAL	PAER	mmc/imi	sim
CAND		mecA	gim	oxa48		STAPHYL	KLEB	SPYOG	imp
	CALB	vanA		oxa51	SPNEU	SA	STREP	blaSHV	
	B	vanB		oxa58			NEISS	blaCTX	

REFERENCE: MAD-003937M-HS I 24 TEST

AMR DIRECT FLOW CHIP KIT

Detection of 20 antibiotic resistance genes present in Gram-negative and Gram-positive bacteria

Sample types:
- ✓ Blood cultures.
- ✓ Rectal/nasal swabs and rectal and nasal swabs as a single sample.
- ✓ Bacterial colonies.

Single lyophilised master mix ready for use.

Uses a direct sample: DNA extraction is not necessary.

Organism/Resistance

Staphylococcus aureus

Methicillin: mecA

Vancomycin: vanA and vanB

Carbapenemase: KPC, SME, NMC/IMI

GES, VIM, GIM, SPM, NDM, SIM, IMP3, 15, 19_like, OXA23_like, OXA24_like, OXA48_like, OXA51_like, OXA58_like

ß-lactamase: SHV and CTX-M

B			kpc	spm			vanB	blaSHV-S	B
B			sme	ndm			vanA	ges	oxa23 _like
CI			nmc/imi	sim			mecA	vim	oxa24 _like
BG				imp_like				gim	oxa48 _like
			blaSHV	blaSHV-S				kpc	oxa51 _like
	SA		blaCTX	blaSHV -SK	B			spm	oxa58 _like
			ges	oxa23 _like	CI			sme	ndm
			vim	oxa24 _like	BG			nmc/imi	sim
		mecA	gim	oxa48 _like				blaSHV -SK	imp_like
		vanA		oxa51 _like		SA		blaSHV	
	B	vanB		oxa58 _like				blaCTX	

REFERENCE: MAD-003939M-HS I 24 TEST

RESPIRATORY FLOW CHIP KIT

Simultaneous detection of the main agents (13 pathogens) that cause acute respiratory infections

B	FluA	PIV-1	CoV-OC43		RNaseP	RSV-A	B	
B	FluA-H1N1	PIV-2	BP		BG	RSV-B	CoV-229E	
CI-1	FluA-H3	PIV-3	BPP			RhV	CoV-HKU1	
CI-2	FluB	PIV-4	MP			PIV-1	CoV-NL63	
RNaseP	MPV	AdV	EV	B	FluA	PIV-2	BPP	
BG	RSV-A	Bov	CoV-2	CI-1	FluA-H1N1	PIV-3	MP	
	RSV-B	CoV-229E	SARS	CI-2	FluA-H3	PIV-4	EV	
	RhV	CoV-HKU1		CoV-OC43	FluB	AdV	CoV-2	
	B	CoV-NL63		BP	MPV	Bov	SARS	

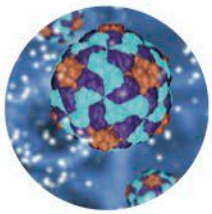
Pathogens

Influenza virus: FluA, FluA H1N1 20009, FluA H3 y FluB,
Adenovirus,
Bocavirus,
Coronavirus (including SARS-CoV-2),
Metapneumovirus,
Parainfluenza virus (types 1, 2, 3 and 4),
Respiratory syncytial virus (type A and type B),
Rinovirus,
Enterovirus,
Bordetella pertussis,
Bordetella parapertussis,
Mycoplasma pneumoniae.

Sample types:

- ✓ Purified RNA/DNA from bronchial lavages and nasopharyngeal swabs.

Two lyophilised master mixes ready for use.



REFERENCE: MAD-003940M-HS I 24 TEST

TICK-BORNE BACTERIA FLOW CHIP KIT

Simultaneous detection of 7 arthropod-borne bacterial species

B			FR				B	
B	GR				EH		BOR	
CI	TG		BAR		AN			
BG	SFG						COX	
			BAR-2	B				FR
				CI				
	EH		BOR	BG	GR			BAR
	AN				TG			BAR-2
	B		COX		SFG			

Bacteria

Rickettsia,
Rickettsia Typhus group,
Rickettsia Spotted fever group,
Erhlichia,
Anaplasma,
Francisella,
Bartonella,
Borrelia,
Coxiella.

Sample types:

- ✓ Purified RNA/DNA from serum, biopsies, blood, cerebrospinal fluid, arthropods that carry the bacteria in question and animal reservoir samples.

Two lyophilised master mixes ready for use.

vitro
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