BioVendor Group

MBA

BIOVENDOR.GROUP

Microblot-Array

Multiplex diagnostics in microtiter plate format

ENG

Immunoblots evolution: from Western Blot to Multiplex

WESTERN BLOT
Strips with native antigens

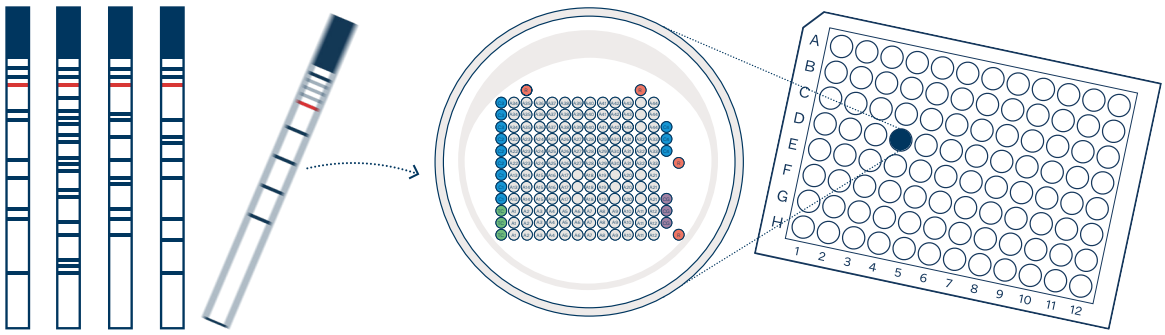
BLOT-LINE
Strips with recombinant antigens

MBA
Wells with recombinant antigens

Step into a new era of diagnostics with Microblot-Array (MBA), a cutting-edge immunoblot. Designed in the well of a microtiter plate format for efficient multiplex diagnostics. Elevate your testing capabilities with its high throughput and automated processing.

Unlock the power of advanced evaluation with the MBA Reader and software. Dive into image analysis, extract valuable insights, and export findings in multiple formats for seamless integration with your LIS.

Up to 5 BLOT test **in 1 MBA well**



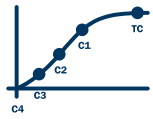
Discover the uniqueness of MBA!

Multiplex testing
up to 44 antigens
in a single well

Wide portfolio
attractive, ever-expanding
range of parameters

ELISA processors–compatible
processing tests with
your existing ELISA analysers

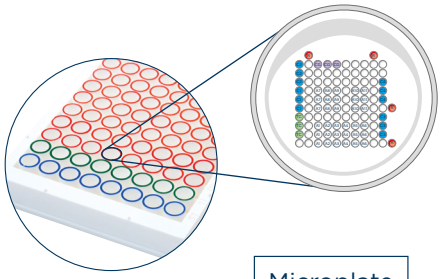
Efficiency
both high-throughput
and individual testing thanks
to brekable wells



Quantitative results
accurate and scalable
thanks to integrated calibrators

Easy-to-use software
comprehensive solution
for test evaluation and reporting

Workflow



Microplate

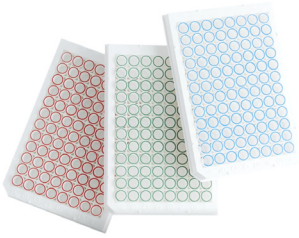
Universal solution

Positive control

Substrate

Conjugate

Automated — **PROCESSING** — **Manual**



Automated processing using open ELISA instruments as ELISA-like plate is used

For manual processing you can use ELISA washer

After processing, allow the plate to dry in the TestLine dryer

SOFTWARE EVALUATION

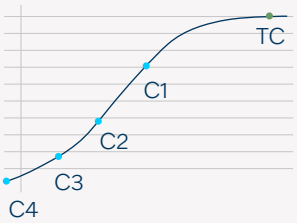
Ensure comprehensive evaluation with Reader and Software. Analyze data in diverse formats, enjoy seamless LIS connectivity, and user-friendly interfaces. Software provides quantitative results and validity control.

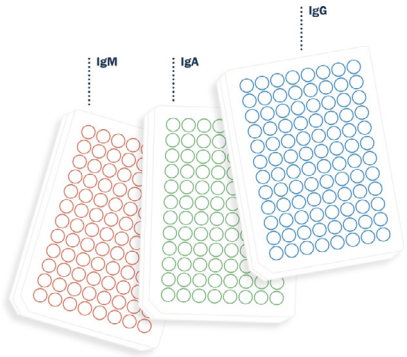
All in one. Perfected!

- **Reference** (SW evaluation)
- **Calibration** (quantitative results)
- **Test control** (validity of the test)
- **Conjugate Control** (validity of conjugate)
- **Antigens** (highly specific and recombinant)

Quantitative Evaluation

With integrated calibrators in each well, calibration curve is created in SW. Only one well is required for quantitative results, as everything is included in one well. You'll save up to 8 wells compared to ELISA.



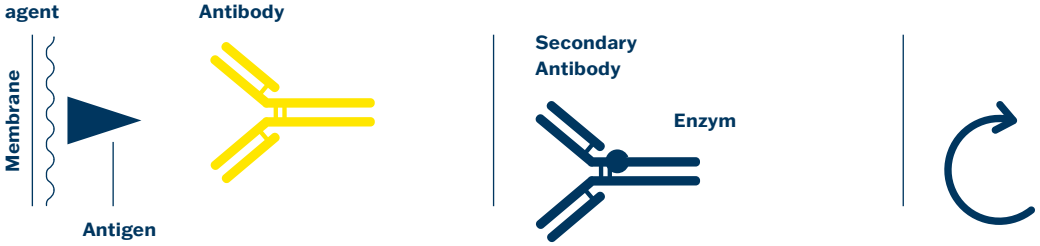


Breakbale wells and spots in triplicate

Recombinant antigens are spotted in triplicate on a nitrocellulose membrane and fixed at the bottom of each well.
The microplate consists of 96 breakable wells, with each well representing one test. On the outside of the bottom of each well is a barcode for automatic identification by the reader.

Protocol Summary

Step No.	Test steps
1.	Pipette Universal Solution – 150 µl
2.	Wells soaking at room temperature for 10 min.
3.	Aspirate off
4.	Dilute samples serum/plasma 1:51 (10 µl + 500 µl) cerebrospinal fluid 1:3 (50 µl + 100 µl) synovial fluid 1:17.5 (10 µl + 165 µl)
5.	Pipette control and diluted samples – 100 µl
6.	Incubate at room temperature for 30 min.
7.	Quick wash using the Universal Solution
8.	Aspirate and wash 3 × 5 min. with 150 µl of Universal Solution
9.	Pipette Conjugate – 100 µl
10.	Incubate at room temperature for 30 min.
11.	Quick wash using the Universal Solution
12.	Aspirate and wash 3 × 5 min. with 150 µl of Universal Solution
13.	Pipette Substrate Solution (BCIP/NBT) – 100 µl
14.	Incubate at room temperature for 15 min.
15.	Quick wash using the distilled water
16.	Aspirate and wash 2 × 5 min. with 200 µl of distilled water
17.	Dry and evaluate



Specific primary antibody binding to protein

Enzyme–conjugated secondary antibody binding to primary antibody

Reaction of substrateand enzyme resulting in coloured insoluble product

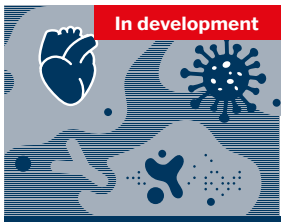
Wide portfolio. In the name of versatility.

IMMUNOLOGY


Autoimmune gastroenteritis

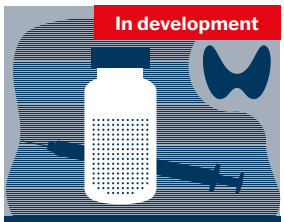

Autoimmune liver diseases


Rheumatic diseases



ANCA

Autoimmune neurological diseases

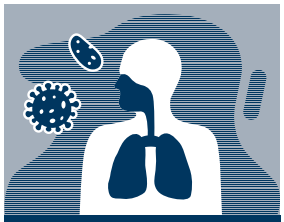


Endocrine antibodies

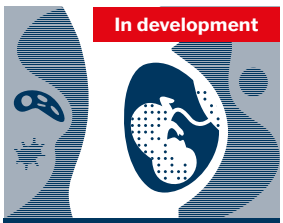
INFECTIOUS SEROLOGY


Gastroinfections

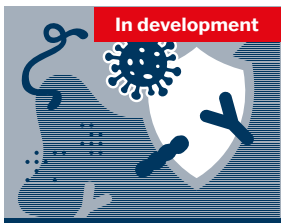

Herpetic infection


Respiratory infections

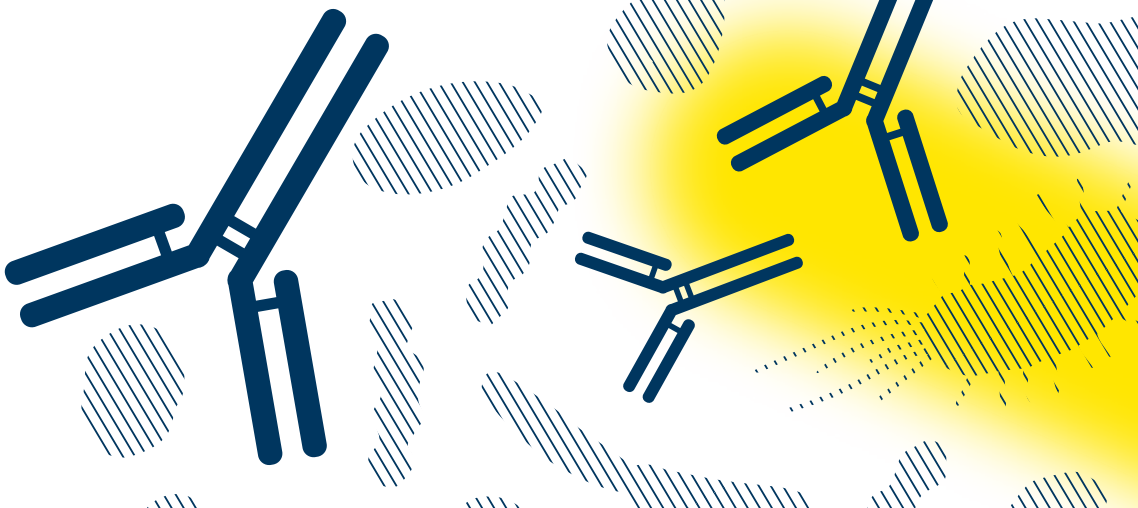

Vector transmitted infections

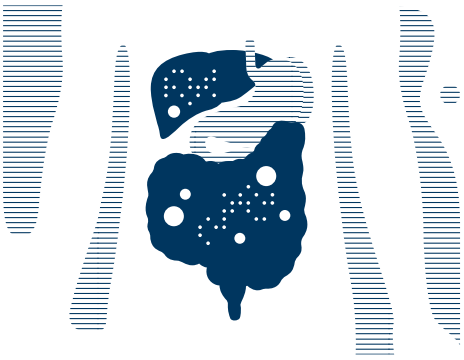


TORCH



Tropical diseases





Autoimmune liver diseases

Microblot-Array Liver profile

Diagnostics of Autoimmune hepatitis (AIH), Primary biliary cholangitis (PBC), and Primary sclerosing cholangitis (PSC)

Association	Antigens	Description
Autoimmune hepatitis	LKM-1	**Liver Kidney microsomal type 1** – Associated with AIH2 and HCV – In AIH2, lower titers, especially important in pediatric patients
	LC-1	**Liver cytosol-1** – Highly specific for AIH2 (30% of patients) – one of the diagnostic criteria for AIH2 – Associated with higher disease activity
	SLA/LP	**Soluble liver antigen/liver pancreas antigen** – Associated with AIH3 or AIH1 (in about 25% of patients with chronic AIH) – Their presence depends on ethnicity
Primary biliary cholangitis	ASGPR	**Asialoglycoprotein receptor** – An important diagnostic marker of PBC – Also present in other liver diseases of viral origin – The level of antibodies correlates with the severity of the disease – Antibodies may disappear during immunosuppressive therapy
	gp210	**Glycoprotein 210** – Associated with nuclear membrane – High specificity for PBC, especially in AMA negative patients (30–50%) – Association with a more severe PBC and a higher risk of developing cholangitis – May also be associated with PSC
	sp100	**Speckled protein 100 kDa** – Associated with multiple nuclear dots – High specificity for PBC, probable association with progressive PBC and risk of fibrosis – Incidence in 30–50% of AMA negative patients
	PML	**Promyelocytic Leukemia Protein** – Incidence in approximately 12–19% of PBC patients, association with PBC in AMA negative patients (predominantly in coexistence with anti-Sp100)

Association	Antigens	Description	
Primary biliary cholangitis	**Nup62**	**Nucleoporin 62** – High specificity for PBC, often simultaneously with anti-gp210 – Association with later stage disease and worse prognosis	
	M2	**Intramitochondrial protein** – Binds anti-mitochondrial antibodies (AMA), highly sensitive – Typical for PBC, only in about 5-10% of PBC patients AMA is not formed – Overlapping syndromes with AIH – Rare occurrence in ANA patients (progressive SS, SjS or SLE)	
	3E(BPO)	Fusion protein (BCOADC E2 + PDC E2 + OGDC E2)	– M2 subunits – PDC-E2 is the dominant subunit (approx. 85–90% of cases)
	OGDC-E2	2-oxo-glutarate dehydrogenase complex	
	PDC-E2	Pyruvate dehydrogenase complex	
	Ro52	**TRIM21** – Probable marker for PBC (occurs in approx. 28% of patients) – Associated with AIH1 (occurrence in approx. 38% of patients) – Diagnostic marker of SLE, SSc, specifically associated with myositis	

PSC – Primary sclerosing cholangitis | **AIH1,2,3** – autoimmune hepatitis type 1, 2, 3 | **HCV** – hepatitis C virus | **PBC** – primary biliary cholangitis | **AMA** – antimitochondrial antibodies

Rheumatic disease

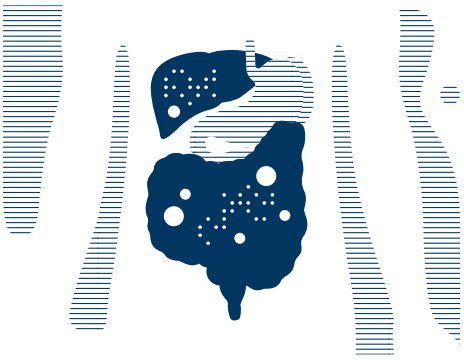
Microblot-Array ANA plus

Diagnostics of Myositis, Scleroderma, and Other connective tissue diseases

Antigens	Description	Probable association
Jo-1	Hystidyl tRNA synthetase	ASS, PM, DM
PL-7	Threonyl tRNA synthetase	ASS, PM, DM, Raynaud‘s phenomenon
PL-12	Alanyl tRNA synthetase	ASS, PM, DM, Raynaud‘s phenomenon
EJ	Glycyl tRNA Synthetase	ASS
OJ	Isoleucyl tRNA synthetase	ASS, ILD
KS	Asparaginyl tRNA synthetase	ILD, PM, DM, ASS
YARS	Tyrosyl tRNA synthetase (Ha)	ASS
ZoA	Phenylalanyl tRNA synthetase	ASS
ZoB	Phenylalanyl tRNA synthetase	ASS
HMGCR	3-hydroxy-3methylglutaryl-coenzyme A reductase	IMNM, Statins-induced NM
SAE-1	Small ubiquitin-like modifier activating enzyme	ASS, CDM
SAE-2		ASS, CDM
SRP54	Signal recognition particle	IMNM, PM, DM, ASS
Mi-2	Helicase protein—nuclear transcription	Juvenile DM, DM
TIF1γ	Transcription Intermediary Factor 1	DM, CDM, Juvenile DM, DM
MDA5	Melanoma differentiation associated protein 5 (CADM-140)	Amyopathic DM with ILD progression
NXP2	Nuclear matrix protein 2 (p140, MJ)	Juvenile DM
PMScl 70	Human exosome complex	Diffuse SSc, PM / SSc
PMScl 100	Human exosome complex	Diffuse SSc, PM / SSc
Scl70	DNA-topoisomerase I	Diffuse SSc, SSc with the risk of the development of pulmonary fibrosis
CENP A	Centromere A	SSc, CREST syndrome
CENP B	Centromere B	SSc, CREST syndrome
POL3A	RNA polymerase III	Diffuse SSc
NOR90	Nucleolar transcription factor 1 (Ubtf1)	SSc, Raynaud‘s phenomenon, SLE, SjS

Antigens	Description	Probable association
Th/To	Ribonuclease P protein subunit 25 (Rpp25)	SSc with the risk of the development of pulmonary fibrosis
PDGFR-β	Platelet-derived growth factor receptor beta	SSc with the risk of the development of pulmonary fibrosis, muscular dystrophy and muscle fibrosis
Fibrillarin	U3 RNP - fibrillarin	SSc with the risk of the development of hypertension
Ro52	TRIM21	DM with ILD progression, Raynaud‘s phenomenon, SLE, neonatal LE, SSc
Ro60	Sjögren’s-syndrome-related antigen A (SS-A)	SjS, neonatal LE, SLE
La	Sjögren’s-syndrome-related antigen B (SS-B)	SjS, neonatal LE, SLE
RNP A	U1 small nuclear ribonucleoprotein A	SLE, MCTD, Raynaud‘s phenomenon
RNP C	U1 small nuclear ribonucleoprotein 68/70 kDa	SLE, MCTD, Raynaud‘s phenomenon
RNP 68/70	U1 small nuclear ribonucleoprotein C	SLE, MCTD, Raynaud‘s phenomenon
SmB	Smith antigen B	SLE
SmD	Smith antigen D	SLE
PCNA	Proliferating cell nuclear antigen	SLE
P0	Ribosomal protein P0	SLE
Ku	Ku (p70/p80)	SLE, MCTD, PM/SSc
Nucleolin	Nucleolin	SLE
Histons	Histone	Detox LE, SLE
Nucleosome	Nucleosome	SLE with the risk of the development of lupus nephritis
dsDNA	Double-stranded DNA	SLE
M2	Mitochondrial M2 (AMA-M2)	Primary biliary cirrhosis, SSc with PBC progression
DFS70	Dense fine speckled 70 antigen	Atopic dermatitis, SjS, alone - biomarker to exclude SARD

ASS – Antisynthetase syndrome | **PM** – Polymyositis | **DM** – Dermatomyositis | **ILD** – Interstitial lung disease | **IMNM** – Immune-mediated necrotizing myopathy | **NM** – Necrotizing myopathy | **CDM** – Cancer-associated myositis | **IBM** – Inclusion body myositis | **SLE** – Systemic lupus erythematosus | **MCTD** – Mixed connective tissue disease | **SSc** – Systemic sclerosis | **SjS** – Sjögren´s syndrome | **PBC** – Primary biliary cirrhosis | **SARD** – Systemic autoimmune rheumatoid disease | **IIM** – Idiopathic inflammatory myopathy



Gastrointestinal Diseases

Microblot-Array Autoimmune gastroenteritis panel IgA, IgG*

Diagnostic of inflammatory bowel disease (IBD), celiac disease, and pernicious anemia

Association	Antigens	Description
IBD Crohn's disease Ulcerative colitis	**ASCA**	**Anti-Saccharomyces cerevisiae antibodies** – Interacts with Mannan of the cell wall of Saccharomyces cerevisiae – Differential diagnosis of IBD (specific marker for Crohn's disease – detection in 60–80% of patients) – Detected in 5-15% of patients with ulcerative colitis – The level of antibodies may be increased in patients with celiac disease
	MPO	**Myeloperoxidase** – Subtype of p-ANCA, forming a perinuclear fluorescence image – Differential diagnosis of IBD (specific marker for ulcerative colitis) – Diagnosis of rapidly progressive nephritis, necrotizing glomerulonephritis, Churg-Strauss syndrome, microscopic polyangiitis and other vasculitis
Celiac disease	**DAG**	**Deamidated gliadin** – Deamidation refers to the modification of gliadin by the enzyme tissue transglutaminase – Important marker for celiac disease – Antibody levels can be monitored over time to assess gluten-free diet
	tTG	**Tissue transglutaminase** – An enzyme found in various tissues, including the small intestine – Ability to convert gliadin to deamidated gliadin – An important marker for celiac disease, IgA antibodies are predominant – Antibody levels can be monitored over time to assess the gluten-free diet
Pernicious anemia	**IF**	**Intrinsic factor** – Glycoprotein produced by parietal cells (important for the absorption of vitamin B12) – Diagnosis of pernicious anemia, inability to absorb vitamin B12
	APCA	**Anti-parietal cell antibodies** – Autoantibodies to parietal cells – Diagnosis of autoimmune gastritis and related conditions (decrease in the production of IF necessary for the absorption of vitamin B12, which can lead to pernicious anemia)

IBD – inlfammatory bowel disease | **ANCA** – antinucelar antibodies

*Validation kits only

Microblot-Array Helicobacter IgA, IgG

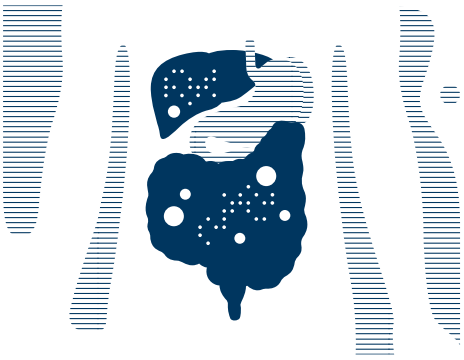
Diagnostics of *Helicobacter pylori*

Antigen	Description
CagA, p120	Cytotoxin associated gene A, highly specific, virulence factor
VacA, p87	Vacuolating cytotoxin A, highly specific, virulence factor
UreA, p29	Light subunit of urease, specific, virulence factor
NAP	Neutrophil-activating protein, virulence factor, potential biomarker of gastritis
HpaA	Helicobacter pylori adhesin A, surface lipoprotein, potential biomarker of gastritis and gastric ulcer
HcpC	Helicobacter cystein-rich protein, virulence factor
GroEL	Chaperonin, heat shock protein (Hsp 60), virulence factor, considered as a marker of chronic infection

Microblot-Array Yersinia IgA, IgG

Diagnostics of *Yersinia enterocolitica*

Antigen	Description
YopB	Yersinia outer protein, transmembrane protein
YopD	Yersinia outer protein, transmembrane protein
YopM	Yersinia outer protein
YopN	Yersinia outer protein
LcrV	Low calcium response Virulence, important for YopD a YopB secretion
Ail	Attachment-invasion locus protein early phase, involved in the adhesion and invasion process, allows yersinia to survive outside the host cell, a significant virulence factor
Invasin	Surface adhesin binding to β1 integrins on surface of target cells; important in the first stage of infection, a virulence factor
YscM-Y.Ent	Yop proteins translocation protein M



Herpetic infections

Microblot-Array CMV IgG, IgM

Diagnostics of cytomegalovirus infection

Antigen	Description
p150	Tegument protein UL32 A strong immunogen of the late stage of infection (late antigen); it does not develop in the early stage. Detectable in the IgG class in higher titres even in reactivation.
IEA (p72)	Immediate early antigen, capsid protein UL123 Plays a role in the early phase of the replication cycle of human CMV Important function in defence mechanisms against CMV infection
p65	Tegument protein UL83 In the IgM class – one of the markers of the early stage of infection In the IgG class – rather typical for the late stage or infection reactivation
p52	CM2 protein; UL44 In the IgM class – an important marker of the early stage of primary infection In the IgG class – reactivity rather in the late stage, or infection reactivation
p28	Tegument protein UL99 A strong immunogen: it may develop in late stages of infection
gB	Membrane glycoprotein B Antibody response in IgG class – approximately 50–100 days after primary infection

Microblot-Array EBV IgA, IgG, IgM

Diagnostics of Epstein-Barr virus and EBV-associated diseases

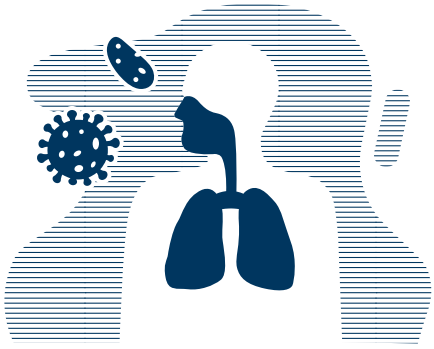
Antigen	Description
EBNA-1	Epstein-Barr nuclear antigen 1 IgG: an important diagnostic marker of the late phase or reactivation of the infection IgM: the antibodies are detectable 2–4 months after primary EBV infection, they may also appear during reactivation
EBNA-2	Epstein-Barr nuclear antigen 2 IgG: high antibody titres are present during chronic infection or in the post-acute phase The absence of IgG anti-EBNA-2 antibodies and the presence of anti-EBNA-1 antibodies rules out primary infection

Antigen	Description
VCA p18	Viral Capsid Antigen p18; IgA: marker of primary infection; high titres persist in patients with nasopharyngeal carcinoma IgM: marker of primary infection; they may also be present during infection reactivation IgG: an important marker of the late phase of the infection, antibodies do not occur in primary infections
VCA p23	Viral Capsid Antigen p23 Antibodies against this antigen can be detected during all phases of the infection (both IgG and IgM), they persist in the body for a long time
EA-D p54	Early Antigen Diffuse p54; BMRF1 IgA: produced during primary infection; high titres during reactivation; high titres persist in patients with nasopharyngeal carcinoma An additional marker of acute EBV infection, detectable even in the latent phase of primary infection (both IgG and IgM)
EA-D p138	Early Antigen Diffuse p138 IgA: produced during primary infection; high titres during reactivation; high titres persist in patients with nasopharyngeal carcinoma An additional marker of acute EBV infection, detectable even in the latent phase of primary infection (both IgG and IgM)
EA-R	Early Antigen Restricted protein p85; IgG: antibodies usually occur at a later stage; they are practically absent during the acute phase except in children; high levels in patients with reactivation or in immunocompromised patients
Rta	Replication and transcription Activator (BRLF1); A very early antigen IgG: a potential diagnostic marker of a nasopharyngeal carcinoma
ZEBRA	Z Epstein-Barr replication activator protein; Trans-activator protein BZLF1 IgM: it is a very early indicator of an acute infection IgG: it is an early stage marker but it is also detectable during the late stages of the infection Serological marker of EBV reactivation, marker of EBV-associated diseases
gp85	Probable membrane antigen gp85 (BDLF3);
gp350	Epstein-Barr virus envelope glycoprotein gp350 (BLLF1); IgM: high titres in patients with infectious mononucleosis IgG: the titre increases only a few months after the primary infection Specific immune response for EBV-associated diseases
LMP1	Latent membrane protein 1 Frequent in latent infections Linked to EBV-associated malignancies (nasopharyngeal carcinoma)

Microblot-Array HSV 1+2 IgG, IgM

Diagnostics of Herpes simplex virus type 1 and type 2

Antigen	Description
HSV 1+2	Native HSV-1and HSV-2 antigen
gC-1 gC-2	Glycoprotein C-1 specific for *Herpes simplex 1 virus*; Glycoprotein C-2 specific for *Herpes simplex 2 virus*; Early antibody production
gD-1 gD-2	Glycoprotein D-1 specific for *Herpes simplex 1 virus*; Glycoprotein D-2 specific for *Herpes simplex 2 virus* Serves to capture and entry of the virus into a potential host cell; stimulates high production of neutralizing antibodies, high similarity between HSV-1 and -2
gG-1 gG-2	Glycoprotein G-1 specific for *Herpes simplex 1 virus*; Glycoprotein G-2 specific for *Herpes simplex 2 virus* Appropriate for differentiating between HSV-1 and -2 infection In the IgG class – indications of previous or probably latent infection; antibodies are formed only in the convalescent phase, they have been found also in patients with reactivation of infection In the IgM class – antibodies are produced only in the convales



Respiratory infections

Microblot-Array Bordetella IgA, IgG, IgM

Diagnostics of *Bordetella pertussis* and *parapertussis*

Pathogen	Antigen	Description
Bordetella pertussis	PT	Pertussis toxin (45 kDa) – basic virulence factor, specific only for *B. pertussis*, the most important pertussis antigen
	FHA	*B. pertussis* filamentous hemagglutinin – adhesive protein, important immunogen; selected part of the sequence with high specificity
	ACT	Adenylate cyclase toxin (CyaA) – significant virulence factor of *B. pertussis* with anti-phagocytic activity
	TCF	Tracheal colonization factor – protein produced only by *B. pertussis*; adhesin; enabling the microorganism to adhere to mucosal surfaces of respiratory tract and colonize ciliated epithelial cells and phagocytes
Bordetella parapertussis	Pertactin	75 kDa; outer membrane protein of virulent *B. parapertussis* strains
	FimN	Fimbriae N – adhesin, non-produced by *B. pertussis*
	EntA	Entericidin A – membrane lipoprotein

Microblot-Array Chlamydia IgA, IgG

Diagnostics of *Chlamydia pneumoniae*, *trachomatis*, and *psittaci*

Pathogen	Antigen	Description
Chlamydia pneumoniae	MOMP Cp	Dominant major outer membrane protein (species specific) – structural protein; metabolic function
	MOMP1	MOMP isoform, produced by posttranslational modification
	OMP2 Cp	Outer membrane protein (species specific) – structural protein of Chlamydia outer membrane complex
	OMP4	Outer membrane protein
	OMP5	Outer membrane protein
	P54	Immunodominant outer antigen, highly specific to *Ch. pneumoniae* – sensitive marker for diagnosis of acute infection

Pathogen	Antigen	Description
Chlamydia trachomatis	MOMP Ct	Dominant major outer membrane protein (species specific) – structural protein; metabolic function
	OMP2 Ct	Outer membrane protein (species specific) – structural protein of *Chlamydia trachomatis* *Chlamydia* outer membrane complex
	HSP60	Heat shock protein (GroEL); marker of chronic infection
Chlamydia psittaci	MOMP Cps	Dominant major outer membrane protein (species specific) – structural protein; metabolic function
	OMP2 Cps	Outer membrane protein (species specific) – structural protein of *Chlamydia* outer membrane complex

Microblot-Array COVID-19 IgA, IgG, IgM

Diagnostics of SARS-CoV-2 and other coronaviruses

Pathogen	Antigen	Description
SARS-CoV-2	Nucleocapsid NP	A potent immunodominant coronavirus antigen that contains diagnostically important epitopes for the diagnosis of SARS-CoV-2 Sensitive detection of anti-SARS-CoV-2 IgG antibodies
	RBD	Receptor-binding domain of the S1 subunit of the spike (S) protein of SARS-CoV-2 Anti-RBD SARS-CoV-2 antibodies are highly subtype specific and protective The presence of anti-RBD antibodies significantly correlates with the formation of neutralizing antibodies IgA: for monitoring the immune response after a positive PCR reaction; indicator of the onset of the immune response IgM, IgG: detection of antibodies from 2 to 4 weeks after infection
	Spike S1	The S1 subunit of the SARS-CoV-2 spike protein contains a receptor-binding domain (RBD), through which the virus binds to the surface of the host cell Anti-S1 antibodies are highly subtype specific, showing high sensitivity against SARS-CoV-2 and are protective
	Spike S2	S2 subunit of the spike protein SARS-CoV-2 Plays an important role in the fusion of the virus with the cell membrane
	Spike S1 α-variant	British mutation , Spike Glycoprotein S1 (B.1.1.7)
	Spike S1 γ-variant	Brazilian mutation, Spike Glycoprotein S1 (P.1)

Pathogen	Antigen	Description
SARS-CoV-2	Spike S1 δ-varianta	Indian mutation, Spike Glycoprotein S1 (B1.617.2)
	Envelope protein (E)	The smallest major structural protein Important for different stages of viral infection and replication, important role in the life cycle of the virus
	PLpro	Papain-like protease One of the basic SARS-CoV-2 proteins, essential for virus replication; deubiquitination activity Necessary for proteolysis of the viral polyprotein
Human receptor	ACE2	Angiotensin Converting Enzyme (transmembrane glycoprotein) A key component of the renin-angiotensin system Expressed in vascular endothelial cells in the heart, kidneys, but also the testes, liver, intestines, lungs and also the brain Involved in the regulation of cardiovascular and renal function
Other endemic coronaviruses	MERS-CoV S1	Middle East Respiratory Syndrome Coronavirus S1 protein
	SARS-CoV Np	Severe Acute Respiratory Syndrome Coronavirus Nucleocapsid protein
	HCoV 229E Np	Human coronavirus 229E Nucleocapsid protein
	HCoV NL63 Np	Human coronavirus NL63 Nucleocapsid protein

Microblot-Array Mycoplasma IgA, IgG, IgM

Diagnostics of *Mycoplasma pneumoniae*

Antigen	Description
P1	Adhesin; the most important protein, a major virulence factor
p30	Cytadhesin p30; the second most important protein, a major virulence factor
p116	Adhesin, a major virulence factor
p65	Surface protein; proline-rich P65 protein
HMW3	Cytadherence high molecular weigh 3; adhesion-promoting protein
Mgp3	Adhesion-promoting protein

Vector transmitted infections

Microblot-Array Borrelia IgG, IgM

Diagnostics of *Borrelia spp.* and *Anaplasma phagocytophilum*

Pathogen	Antigen	Description
Borrelia spp.	VlsE Ba VlsE Bg VlsE Bs	Expressed part of variable major protein-like sequence, significant for IgG antibody response, species-specific antigen
	p83	Main extracellular protein (product of p100 degradation)
	p58	OppA-2 (Oligopeptide permease 2) – membrane transporter, is considered a marker of disseminated stage of Lyme disease
	p41 Ba p41 Bs	Internal flagellin, highly specific antigen of early antibody response
	p39	BmpA (glycosaminopeptide receptor) – marker of late IgG antibody response
	OspB	Outer surface protein B, marker of late stage of infection, considered a marker of Lyme arthritis
	OspA Ba OspA Bg OspA Bs	Outer surface protein A, highly specific marker of *Borrelia* infection in IgG class
	OspC Ba OspC Bg OspC Bs OspC Bsp	Outer surface protein C – main antigen of early antibody response, immunodominant marker of IgM antibody response
	OspE	Outer surface protein E
	NapA	Neutrophil activating protein A – strong immunogen, main marker of Lyme arthritis pathogenesis
	p17	DbpA (decorin-binding protein A) – outer membrane protein
Anaplasma	p44	*Anaplasma phagocytophilum* – main marker of HGA antibody response
	OmpA	Outer membrane protein A of *Anaplasma phagocytophilum*; peptidoglycan-associated lipoprotein, significant virulence marker
	Asp62	Surface protein – membrane transporter
Treponema	TpN17	Highly specific membrane protein of *Treponema pallidum*
EBV	VCA-p18	Viral Capsid Antigen p18 – important marker of EBV infection

(Ba – *B. afzelii*, Bg – *B. garinii*, Bs – *B. burgdorferi sensu stricto*, Bsp – *B. spielmanii*)

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**AIGAMA48	Microblot-Array Autoimmune gastroenteritis panel IgA	48
**AIGGMA48	Microblot-Array Autoimmune gastroenteritis panel IgG	48

* Check availability in your country
** Validation kit only

INFECTIOUS SEROLOGY

Code	Products	No. of tests
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BpMMA48	Microblot-Array Bordetella IgM	48
BGMA096	Microblot-Array Borrelia IgG	96
BMMA096	Microblot-Array Borrelia IgM	96
CoVAMA96	Microblot-Array COVID-19 IgA	96
CoVGMA96	Microblot-Array COVID-19 IgG	96
CoVMMA96	Microblot-Array COVID-19 IgM	96
CMGMA48	Microblot-Array CMV IgG	48
CMMMA48	Microblot-Array CMV IgM	48
EBAMA96	Microblot-Array EBV IgA	96
EBGMA96	Microblot-Array EBV IgG	96
EBMMA96	Microblot-Array EBV IgM	96
HpAMA48	Microblot-Array Helicobacter IgA	48
HpGMA48	Microblot-Array Helicobacter IgG	48
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HSMMA48	Microblot-Array HSV 1+2 IgM	48
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CGMA096	Microblot-Array Chlamydia IgG	96
MyAMA48	Microblot-Array Mycoplasma IgA	48
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MyMMA48	Microblot-Array Mycoplasma IgM	48
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YGMA048	Microblot-Array Yersinia IgG	48

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