

Infectious Diseases

Method ▾

here you **GO!**

- ▶ Fungal Diagnostics
- ▶ Parasite Diagnostics
- ▶ Virus Diagnostics
- ▶ Bacterial Diagnostics



## Infectious disease diagnostics

Detection of viral, bacterial, mycological  
and parasitic infections in humans

Infectious diseases are caused by pathogenic microorganisms, such as bacteria, viruses, parasites or fungi. Some infectious diseases can be passed from person to person; some are transmitted via bites from insects or animals.

# Worldwide rise in infectious diseases

Many infectious diseases seem to be on the rise nowadays, including some newly-circulating ones (Hantavirus, SARS, etc.). This reflects the combined impacts of rapid demographic, environmental, social, technological and other changes in our ways of living.

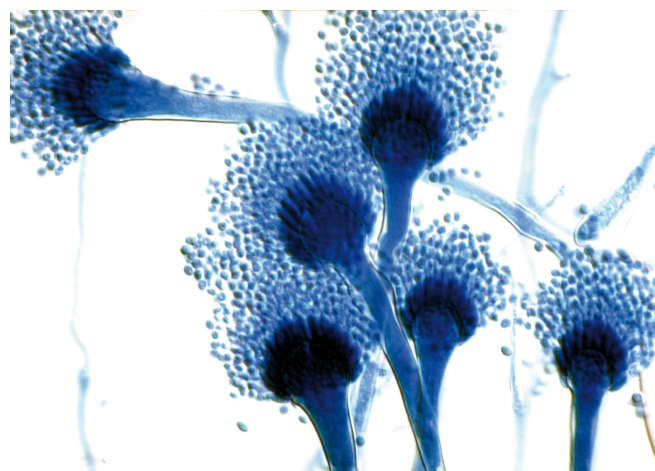
**The complexity of factors that work together to cause the transmission of infectious agents creates a broad infectious disease spectrum for:**

- Vaccine-preventable diseases
- Sexually transmitted diseases
- Gastrointestinal diseases
- Vector-borne diseases and parasitic diseases
- Zoonoses
- Bacterial diseases

IBL International offers a comprehensive test portfolio of routine and niche infectious disease markers. The infectious disease range includes tests for Dengue virus, Hantavirus serotypes (Puumala, Hantaan, Dobrava), the TORCH panel, the Borrelia diagnostic, and kits for the detection of Helicobacter pylori and a variety of other markers.

**Key characteristics of the infectious disease line are:**

- Various antibody classes (IgA, IgG, IgM, and TAB)
- evaluated for various body fluids (serum, plasma liquor)
- State-of-the-art antigens (native or recombinant)
- Interchangeable reagents (buffers, substrates, etc.)
- easy to handle, reliable, with short total processing times
- qualitative and/or quantitative analysis
- calibration to international reference standards (WHO, NIBSC)
- CE-marking according to European guideline 98/79/EC
- Automatization profiles for several ELISA processors



## Fungal diagnostics

Unlike most viral or bacterial infections, fungal diseases typically develop gradually and clear slowly. Normally, inhaled spores are destroyed by macrophages, but if immune control is lost, fungi grow into the surrounding tissue and cause life-threatening infections. They can pose a major health threat

to immune-compromised patients. IBL International offers diagnostics for the two most common fungi known to be infectious to humans: Aspergillus fumigatus and Candida albicans.

### Clinical manifestation

Aspergillosis

Candidosis, candidiasis

### Products

Aspergillus fumigatus IgA, IgG, IgM ELISA

Candida albicans IgA, IgG, IgM ELISA

# Parasite diagnostics

Parasites are organisms that derive protection from other living organisms known as hosts. These organisms live and reproduce within the tissues and organs of infected human and animal hosts, and are often excreted in feces. They may be transmitted from host to host through consumption of contaminated food and water, and are significant causes of food-borne and water-borne illness. Parasites range in type and size from tiny-, single-celled-, microscopic organisms (protozoa) to larger, multi-cellular worms (helminths) that can be seen without a microscope. The size ranges from 1 to 2  $\mu\text{m}$  to 2 m long. Common parasites are *Toxoplasma gondii*, *Trichinella spiralis*, *Plasmodium falciparum/vivax* and *Taenia solium*. Parasitic infections are definitively diagnosed by identifying parasites in host tissue or excreta. Such identification is not generally possible in diseases, whose parasites are located in deep tissue, and invasive techniques involve additional risk to the patient. So the detection of antibodies is very useful as an indicator that an individual has been infected with a particular parasite.

IBL International's parasite product line includes species-selective ELISAs for the most common parasites.



## Clinical manifestation

- Ascariasis
- Hydatid disease
- Amoebiasis
- Visceral leishmaniasis
- Malaria
- Schistosomiasis (bilharziosis)
- Taeniasis, cysticercosis
- Toxocariasis
- Toxoplasmosis
- Trichinosis
- Chagas disease
- Giardiasis

## Products

- Ascaris lumbricoides IgG ELISA
- Echinococcus IgG ELISA
- Entamoeba histolytica IgG ELISA
- Leishmania infantum IgG ELISA
- Malaria-Ab ELISA
- Schistosoma mansoni IgG ELISA
- Taenia solium IgG ELISA
- Toxocara canis IgG ELISA
- Toxoplasma gondii IgG, IgM ELISA
- Trichinella spiralis IgG ELISA
- Chagas (Trypanosoma cruzi) IgG ELISA
- Giardia lamblia ELISA

# Virus diagnostics

Viral illnesses are proving the most common type of infectious disease and are one of the biggest threats in the 21st century. Many viral illnesses of wide-ranging severity may occur during a lifetime, including influenza, viral gastroenteritis, chickenpox, viral pneumonia, aseptic meningitis, viral encephalitis, infectious mononucleosis, measles, viral hepatitis, dengue, fifth disease and AIDS. In addition to well-known common viruses, many more localized and climate-limited viruses have conquered new territories, becoming a threat for the population in new areas.

These emerging infectious diseases have recently become endemic in new regions of the world; or physicians notice them when travellers present with symptoms after becoming infected in endemic areas.

IBL International offers routine and special diagnostic tests for viruses such as Hantavirus, tick-borne encephalitis virus, Chikungunya virus, and Dengue virus.

## Clinical manifestation

Various manifestations  
Chikungunya fever  
Cytomegaly  
Break-bone fever  
Infectious mononucleosis  
Infectious mononucleosis  
Infectious mononucleosis  
Nephropathia epidemica  
Hemorrhagic fever with renal syndrome  
Hemorrhagic fever with renal syndrome  
Various manifestations  
Genital herpes syndrome  
Diverse manifestations  
Influenza A infection  
Influenza B infection  
Measles, Rubeola  
Parotitis  
Various manifestations  
Fifth disease  
Poliomyelitis  
Various manifestations  
Embryopathia rubeolosa  
Encephalitis, meningitis, meningo-encephalitis  
Encephalitis

## Products

Adenovirus IgA, IgG, IgM ELISA  
Chikungunya IgG, IgM ELISA  
Cytomegalovirus IgG, IgM ELISA  
Dengue virus IgG, IgM ELISA  
Epstein-Barr virus EA IgA, IgG, IgM ELISA  
Epstein-Barr virus EBNA-1 IgA, IgG, IgM ELISA  
Epstein-Barr virus VCA IgA, IgG, IgM ELISA  
Hantavirus Puumala IgG, IgM ELISA  
Hantavirus Dobrava IgG, IgM ELISA  
Hantavirus Hantaan IgG, IgM ELISA  
Herpes simplex virus 1 IgA, IgG, IgM ELISA  
Herpes simplex virus 2 IgA, IgG, IgM ELISA  
Herpes simplex virus 1/2 IgA, IgG, IgM ELISA  
Influenza A IgA, IgG, IgM ELISA  
Influenza B IgA, IgG, IgM ELISA  
Measles virus IgA, IgG, IgM ELISA  
Mumps virus IgA, IgG, IgM ELISA  
Parainfluenza 1/2/3 IgA, IgG, IgM ELISA  
Parvovirus B19 IgG, IgM ELISA  
Poliovirus ELISA  
Respiratory syncytial virus IgA, IgG, IgM ELISA  
Rubella virus IgG, IgM ELISA  
TBE virus (FSME) IgG, IgM ELISA  
West Nile virus IgG, IgM ELISA



## Zoonoses

### e.g. Hantavirus (Serotype diagnostics)

Hantaviruses are enveloped negative-strand RNA viruses carried by rodents and transmitted to humans. The term hantavirus refers to a genus covering several tens of species or genotypes globally.

Three human pathogenic Hantavirus serotypes are of significant importance in Europe and Asia:

- Puumala virus (PUUV)
- Dobrava virus (DOBV)
- Hantaan virus (HTNV)

PUUV and DOBV have caused the vast majority of human cases in Europe. They circulate together in central Europe. In western and northern Europe only PUUV infections have been reported.

The Hantaan Hantavirus (HTNV) is found pre-dominantly in Asia, Russia, and southern Europe. Compared to the nephropathia epidemica (NE) caused by PUUV, Hemorrhagic



fever with renal syndrome (HFRS) caused by HTNV is generally a severe infection accompanied by uremia, respiratory paralysis, and hemorrhagia with typical shock syndrome, and is often fatal.

The Hantavirus ELISAs are serotype-specific tests designed for the determination of IgG and IgM antibodies against the PUU, DOB or HTN virus in human serum. The use of recombinant nucleocapsid N-terminal antigens achieves the highest possible sensitivity and specificity for differential diagnosis.

## Vector-borne diseases

### e.g. Dengue fever; Chikungunya, West Nile

Nearly half of the world's population is infected by vector-borne diseases, resulting in high morbidity and mortality. They are prevalent in the tropics and subtropics and relatively rare in temperate zones. Global trends have resulted in a re-emergence of epidemic vector-borne diseases affecting both humans and animals over the past 30 years. Outbreaks of dengue fever, chikungunya and West Nile



virus infections in endemic areas are reflected in increased infections in travelers returning from these areas. The timely implementation of diagnostic, therapeutic and infection control measurements requires physicians to include these diseases in their differential diagnosis.

## Vaccination management

### e.g. Measles, Mumps, Rubella (MMR)

Measles, Mumps and Rubella (German measles) are systemic viral infections caused by paramyxovirus or rubella virus (togaviridae). The illness is spread by droplets from infected people, which makes it highly infectious. Symptoms include a flu-like illness, rashes, fever and swollen glands.

Several countries around the world have introduced a two-dose routine vaccination program with a combined trivalent measles, mumps and rubella vaccine for children. In order to monitor the effect of these national vaccination campaigns



the MMR titer has to be determined. Cases of measles and mumps have been rising in recent years and outbreaks occur when vaccination coverage is reduced. Careful surveillance including serological follow-up is therefore very important.

The Mumps, Measles, Rubella ELISAs are sensitive tests to check the immune status, to identify any suspected cases of infection and to distinguish among clinically similar diseases.

# Bacterial Diagnostics

Bacterial diseases include any type of illness or disease caused by bacteria, a type of microbe. Microbes are tiny organisms that cannot be seen without a microscope. Pathogenic bacteria can enter the body through inhalation into the nose and lungs, ingestion in food or through sexual contact. Bacterial diseases are contagious and can result in many serious or life-threatening complications, such as blood poisoning (bacteremia), kidney failure, urinary tract infections, syphilis, and toxic shock syndrome. Many bacteria

emit toxins which damage the cells of the body, resulting in characteristic symptoms of a bacterial disease.

In addition to ELISAs for vaccination management practice (Tetanus, Diphtheria, Pertussis, Haemophilus influenza B etc.), IBL International also offers high-quality bacterial diagnostic products for Helicobacter pylori, Lyme borreliosis, chlamydia, and syphilis.

## Clinical manifestation

- Whooping cough
- Borreliosis, Lyme disease
- Brucellosis
- Various manifestations
- Various manifestations
- Tetanus
- Diphtheria
- Various manifestations
- Q-fever
- B-gastritis
- Respiratory tract disease
- Tuberculosis
- Syphilis
- Various manifestations

## Products

- Bordetella pertussis IgA, IgG, IgM ELISA
- Borrelia IgG, IgM ELISA
- Brucella IgA, IgG, IgM ELISA
- Chlamydia pneumoniae IgA, IgG, IgM ELISA
- Chlamydia trachomatis IgA, IgG, IgM ELISA
- Tetanus IgG ELISA
- Diphtheria IgG ELISA
- Haemophilus influenzae B IgG ELISA
- Coxiella burnetii IgG, IgM ELISA
- Helicobacter pylori IgA, IgG, IgM ELISA
- Mycoplasma pneumoniae IgA, IgG, IgM ELISA
- Mycobacterium tuberculosis IgA, IgG, IgM ELISA
- Treponema pallidum IgG, IgM, Screen ELISA
- Yersinia enterocolitica IgA, IgG, IgM ELISA

## Vector-borne diseases

### e.g. Borrelia (Lyme disease)

Lyme disease is the most common tick-borne disease in the Northern Hemisphere. Borrelia is transmitted to humans by the bite of infected ticks belonging to a few species of the genus Ixodes. Lyme borreliosis is a multi-systemic disease with a broad spectrum of clinical symptoms, but can be treated with antibiotics in all stages. Therefore, a safe and sensitive laboratory diagnosis of Lyme borreliosis, which can detect the early stage, as well is of major importance, since early treatment is most valuable.

The Borrelia IgG and IgM ELISAs combine native (OspC) and recombinant (VlsE, flagellin) proteins to achieve superior diagnostic sensitivity and specificity. The kits allow a reliable detection of acute and persistent Lyme borreliosis infections and monitoring of the immune status in serum, plasma, and liquor.

## Sexually transmitted diseases

### e.g. *Treponema pallidum*

Sexually transmitted infections like chlamydia or syphilis are illnesses that have a significant probability of transmission between humans by means of human sexual behavior. *Treponema pallidum* is the causative organism of syphilis, a contagious and infectious systemic disease characterized by periods of active manifestation and years of symptom-less latency. In general, two types of antibody responses occur: non-specific (Anti-cardiolipin, Anti-reagin) and specific (Anti-treponemal). Treponemal specific tests are based on the use of treponemal antigens. They are routinely used for blood screening and to confirm positive results obtained by non-specific tests. Due to further developments and excellent performance as one of the specific methods the ELISA is becoming more and more the gold standard for the diagnosis of syphilis.



The IBL International's ELISA product line includes a sensitive and selective antibody screening assay for syphilis and IgG and IgM ELISAs routinely used in confirmation. The kits use a mix of immune dominant recombinant antigens resulting in excellent performance.

## Vaccination management

### e.g. Diphtheria, Tetanus, Pertussis

Tetanus, commonly called lockjaw, is a bacterial disease that affects the nervous system. It is contracted through a cut or wound that becomes contaminated with tetanus bacteria. Diphtheria and pertussis (also called Whooping cough), are serious infections that spread easily from person to person. Vaccination against diphtheria, tetanus, and pertussis has been routinely given to children since the 1940s by standard vaccines. Though DTaP vaccination is one of the recommended childhood immunizations, the disease has not yet been eradicated. Low immunization rates in the past have reduced the number of individuals in the population who have immune protection and led to endemic outbreaks. Serological tests verify the presence of protective antibodies, and are used in deciding whether a basic immunization or boosters are needed.

IBL International ELISAs are WHO-calibrated-, quantitative tests for the accurate determination of protective antibody levels against diphtheria, pertussis, and tetanus.





#### **Head Office**

IBL International GmbH  
Flughafenstrasse 52a  
D-22335 Hamburg  
Germany

Phone: +49 (0)40-53 28 91-0  
Fax: +49 (0)40-53 28 91-11  
Email: [IBL@IBL-International.com](mailto:IBL@IBL-International.com)

#### **USA/Canada**

IBL International Corp.  
194 Wildcat Road  
Toronto, ON, M3J 2N5  
Canada

Phone: +1 416-645-1703  
Fax: +1 416-645-1704  
Email: [sales@ibl-international.com](mailto:sales@ibl-international.com)

Supplied by:



Tel: +44(0)1235 431390  
[sales@oxfordbiosystems.com](mailto:sales@oxfordbiosystems.com)  
[www.oxfordbiosystems.com](http://www.oxfordbiosystems.com)