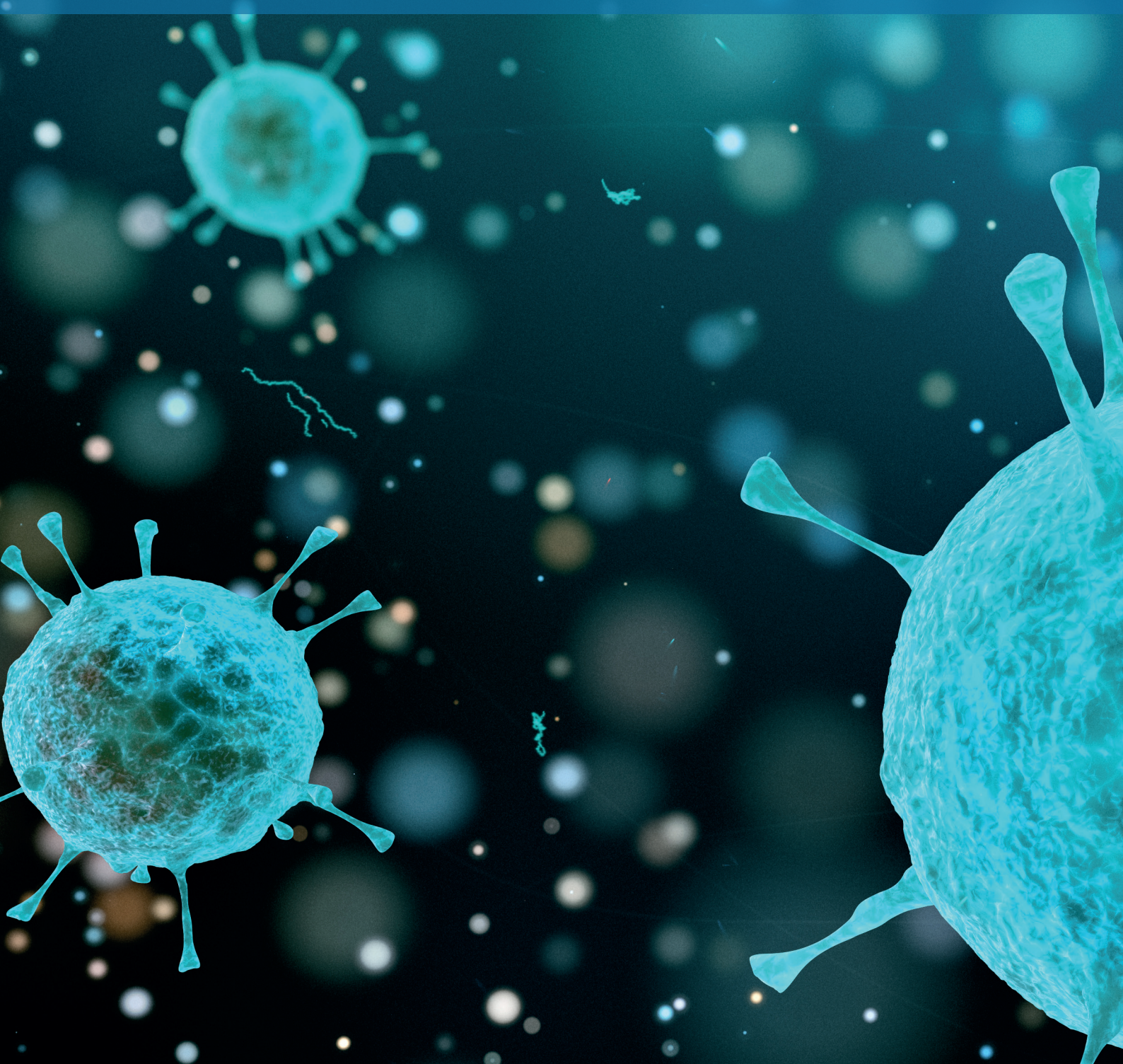


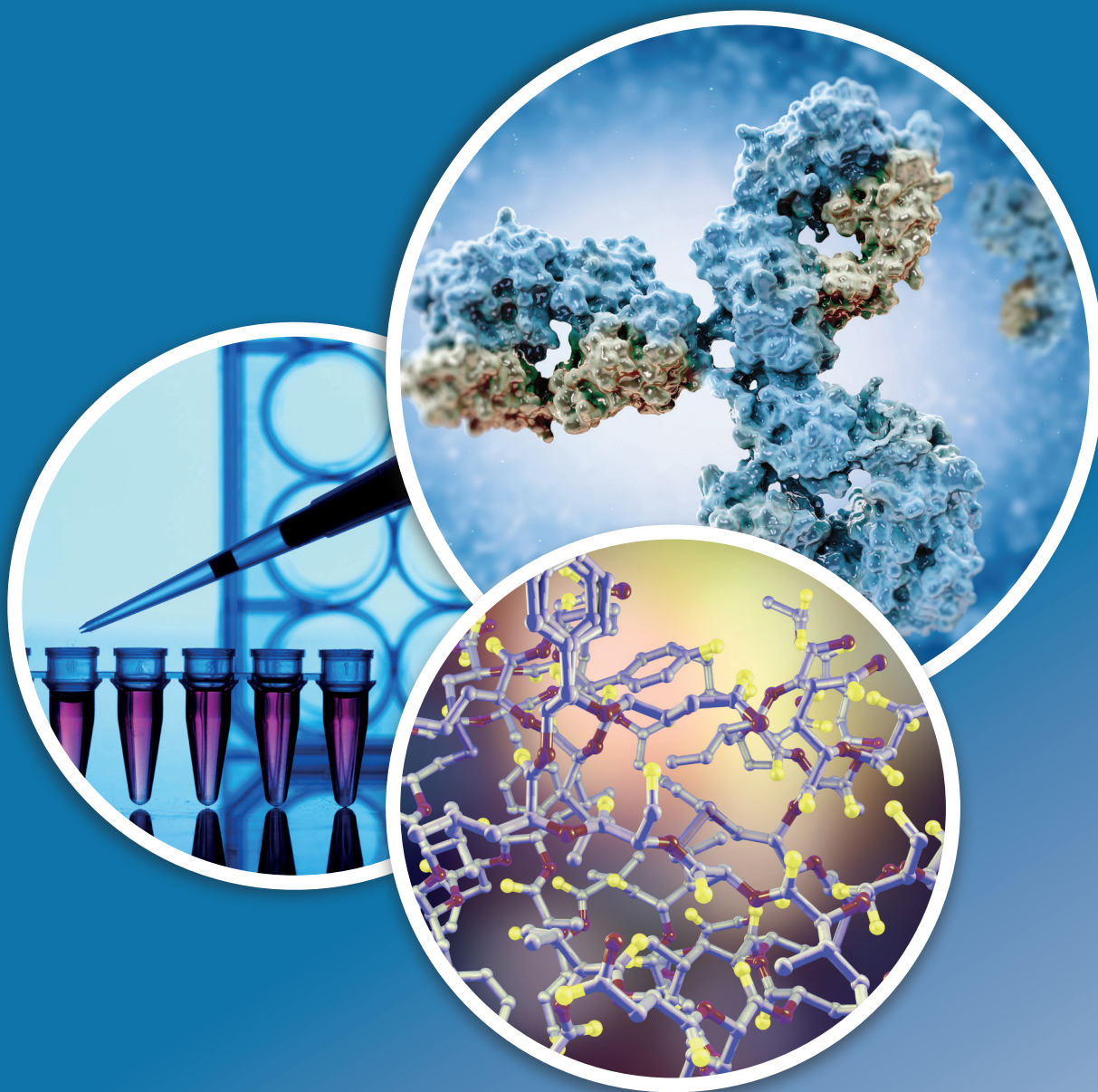
BIOZOL

FIT FOR SCIENCE

BRINGING QUALITY & EFFICIENCY TO RESEARCH



VIROLOGY





Your Partner for Virology

Biozol Diagnostica Vertrieb GmbH are proud to have been providing products and services within the life science arena since 1989. We always aspire to give our customers the fastest response times and high standards of customer service.

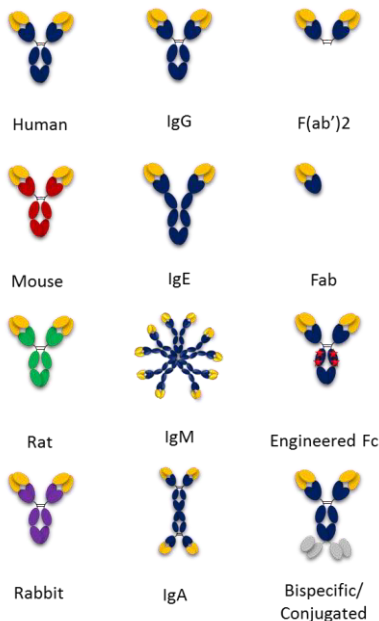
Infectious diseases caused by viral pathogens constitute a considerable public health threat. Viruses such as HIV, dengue virus, influenza and Ebola, are responsible for many cases of potentially fatal diseases, with outbreaks particularly prevalent in tropical regions and the developing world. Pathogens such as herpes simplex virus (HSV), Epstein-Barr virus (EBV), human papillomavirus virus (HPV) and hepatitis C infect millions of people worldwide. Much work is still required by scientists to control outbreaks of existing and emerging viral strains.

The study of viruses and viral infections, known as virology is essential for disease detection, prevention and treatment. BIOZOL offer a wide range of quality reagents to support your virology research. Whether performing basic research, developing vaccines or anti-virus drugs, we have antibodies, antigens, kits and many other reagents to meet your needs.



Recombinant Anti-Virus Antibodies

Absolute Antibody offers a range of recombinant antibodies against viral antigens. The antibodies were generated from a range of sources including classic hybridoma technology, phage-display technology, and the sequencing of (immortalized) B-cells from infected human patients.



Why go recombinant?

As a result of their recombinant manufacture all our antibodies benefit from minimal batch-to-batch variability, as well as options for customisation.

With our technology, we can rapidly convert any antibody into any format allowing us to offer each of our antibodies in a range of species, isotypes and subtypes. Our customers can choose the antibody format that best suits their experiment.

- ✓ Choose a format that suits your secondary reagent
- ✓ Choose a format that is compatible with your model organism
- ✓ Choose an isotype to investigate your chosen host immune responses (includes IgM and all IgG subtypes)
- ✓ Choose from a range of custom engineering options such as our Fc Silent™ format with reduced FcR binding, or other such formats found in the literature (e.g. IgG1-LALA, IgG1-D265A).

Anti-Flavivirus Antibodies

Flaviviruses are small, group IV (+)ssRNA viruses commonly transmitted by mosquito or tick bites. These viruses are of widespread clinical importance with the growing incidence of Dengue fever and the recent high-profile outbreak of Zika virus in Central and South America. For researchers working on these viruses, Absolute Antibody offers a pan anti-flavivirus antibody as well as multiple antibodies specific to Zika virus, Dengue Fever, West Nile Virus and Japanese encephalitis.

Anti-Filovirus Antibodies

Filoviruses are filamentous, group V (-)ssRNA viruses which can cause serious haemorrhagic fever in humans and other primates. The group includes Marburg and Ebola viruses. Anti-filovirus antibodies, as well as antibodies specific to various strains of Ebola, are available to researchers in multiple formats as part of Absolute Antibody's catalogue.

Anti-Alphavirus Antibodies

Alphaviruses are group IV (+)ssRNA viruses that infect a range of mammals and birds. Our range includes antibodies with specificities against Chikungunya virus, Ross River virus and Human Venezuelan Equine Encephalitis virus.

Other anti-viral antibodies available include ranges specific to coronaviruses (including MERS and SARS), HIV, CMV, Hepatitis B, Influenza virus (multiple strains), Rabies virus and Vaccinia virus – check out our list overleaf.

Can't see your ideal solution? Our catalogue is growing quickly, and we're always looking to add new products. Let us know what you want and we may still be able to help you. Remember: ***"If you can describe it, we can make it."***



Product Name	Expected Species Reactivity
Anti-DI/DII domain of Dengue E protein [DV18]	Dengue Virus
Anti-DIII domain of Dengue E protein [DV10]	Dengue Virus
Anti-DI/DII domain of Dengue E protein [DV78]	Dengue Virus
Anti-DIII domain of Dengue E protein (DENV-1 and DENV-3) [DV63]	Dengue Virus
Anti-Envelope protein DIII [2D73]	Dengue Virus
Anti-E-protein [DVC21]	Dengue Virus
Anti-E-protein trimer (DENV3) [5J7]	Dengue Virus
Anti-Envelope dimer Epitope 2 [747(4) B7]	Dengue Virus; Zika Virus
Anti-Envelope dimer Epitope 1 [752-2C8]	Dengue Virus; Zika Virus
Anti-Envelope dimer Epitope 2 [747(4) A11]	Dengue Virus; Zika Virus
Anti-Envelope dimer Epitope 1 [753(3) C10]	Dengue Virus; Zika Virus
Anti-Envelope protein [ZKA78]	Dengue Virus; Zika Virus
Anti-Envelope protein DIII [E111]	DENV-1
Anti-E-protein [DV22]	DENV-4
Anti-Flavivirus group antigen [D1-4G2-4-15 (4G2)]	Flaviviridae
Anti-JEV virions (E/PrM) [TJE12B02]	Japanese Encephalitis Virus
Anti-NS1 [22NS1]	West Nile virus
Anti-WNV Envelope protein [9E2]	West Nile virus
Anti-WNV Envelope protein DI-DII [E53]	West Nile virus
Anti-WNV Envelope protein DIII [E16]	West Nile virus
Anti-NS1 [ZKA35]	Zika Virus
Anti-NS1 [ZKA25]	Zika Virus
Anti-Envelope protein [ZKA64]	Zika Virus
Anti-E-protein DIII (C-C') [ZV-48]	Zika Virus
Anti-E-protein DIII (C-C') [ZV-64]	Zika Virus
Anti-E-protein DIII (LR) [ZV-67]	Zika Virus
Anti-Neutralizing Epitope [ZKA185]	Zika Virus
Anti-E-protein DIII (ABDE) [ZV-2]	Zika Virus
Anti-ZIKV soluble envelope protein [z23]	Zika Virus
Anti-Envelope protein (soluble) [Z23]	Zika Virus
Anti-Envelope protein (soluble) [Z3L1]	Zika Virus
Anti-Envelope protein (soluble) [Z20]	Zika Virus
Anti-E2 protein [4J21]	Chikungunya
Anti-E2 protein [Chk265]	Chikungunya; Alphaviruses
Anti-E2 B domain [3b4c-4]	Human Venezuelan Equine Encephalitis Virus
Anti-E2 A domain [F5]	Human Venezuelan Equine Encephalitis Virus
Anti-RRV E2 [D7]	Ross River Virus
Anti-Poxvirus L1 Protein [Fab 7d11]	Poxviruses
Anti-A14 [BB5.2]	Vaccinia virus
Anti-Vaccinia A33 glycoprotein [A2C7]	Vaccinia virus

Product Name	Expected Species Reactivity
Anti-Ebola Nucleoprotein [KZ51]	Ebola Virus (Zaire, Ivory Coast, Reston, Sudan)
Anti-Ebola GP [h-13F6]	EBOV (Zaire)
Anti-Ebola surface glycoprotein [KZ52]	Ebola (Zaire)
Anti-Filovirus GP [Mr78]	Marburg Virus; Ebola Virus
Anti-Influenza A HA [FLD127]	H5N1 Influenza A Virus
Anti-Influenza A HA [FLD21]	H5N1 Influenza A Virus
Anti-Influenza A HA [FLD20]	H5N1 Influenza A Virus
Anti-Influenza A HA [FLD84]	H5N1 Influenza A Virus
Anti-Influenza A HA [FLD93]	H5N1 Influenza A Virus
Anti-HA Tag [16.43]	Human Influenza
Anti-H3N2 antigen from influenza A virus [IF1A11]	Influenza A
Anti-HA [FE17]	Influenza A Virus
Anti-HA [FB75]	Influenza A Virus
Anti-HA [FC41]	Influenza A Virus
Anti-Influenza A HA [HA]	Influenza A Virus
Anti-Hemagglutinin 5 [H5.3]	Influenza virus H5N1 (VN/1203; HK/156; Anhui; Indo)
Anti-pre-fusion confirmation of HRSV F protein [RSB20]	Respiratory Syncytial Virus (RSV)
Anti-pre- and post-fusion confirmation of HRSV F protein [RSB16]	Respiratory Syncytial Virus (RSV)
Anti-pre- and post-fusion confirmation of HRSV F protein [RSB15]	Respiratory Syncytial Virus (RSV)
Anti-pre-fusion confirmation of HRSV F protein [RSB43]	Respiratory Syncytial Virus (RSV)
Anti-RSV [RSHZ19 (Felvizumab)]	Respiratory Syncytial Virus (RSV)
Anti-VP1 [4C4]	Foot-and-mouth disease virus
Anti-Hepatitis A virus capsid [R10]	Hepatitis A Virus
Anti-HepA [HA12]	Hepatitis A Virus
Anti-HepA [HA6]	Hepatitis A Virus
Anti-HepA [HA1]	Hepatitis A Virus
Anti-HBeAg [E6]	Hepatitis B Virus
Anti-HBsAg [5C3]	Hepatitis B Virus
Anti-HBsAg [F124 scFv]	Hepatitis B Virus
Anti-HBsAg [F124]	Hepatitis B virus
Anti-HIV-1 GP120 [HR12]	HIV-1
Anti-HIV-1 GP120 [HR10]	HIV-1
Anti-HIV-1 GP41 [HK20]	HIV-1
Anti-HIV-1 GP120 [HJ16]	HIV-1
Anti-HIV-1 GP120 [HGZ1]	HIV-1
Anti-HIV-1 GP120 [HGN194]	HIV-1
Anti-HIV-1 GP41 [HGF24]	HIV-1
Anti-HIV-1 GP120 [HGD65]	HIV-1
Anti-HIV-1 protease [F11.2.32]	HIV-1
Anti-HIV-1/HIV-2 protease [1696]	HIV-1; HIV-2
Anti-HPV16E6 & HPV18E6 [C1P5]	Human papilloma virus

We have the tools to help you develop new assays

- Vector-borne diseases account for more than 17% of all infectious diseases, causing more than 700 000 deaths annually.
- More than 3.9 billion people in over 128 countries are at risk of contracting dengue, with 96 million cases estimated per year.
- Malaria causes more than 400 000 deaths every year globally, most of them children under 5 years of age.
- Other diseases such as Chagas disease, leishmaniasis and schistosomiasis affect hundreds of millions of people worldwide.

- | | | |
|--|-------------------------------|---------------------------------|
| • Alphavirus | • Japanese Encephalitis Virus | • Nipah Virus |
| • <i>Borrelia burgdorferi</i> (Lyme disease) | • Leishmania | • Tick-borne Encephalitis virus |
| • <i>Borrelia garinii</i> | • Leptospirosis | • West Nile Virus |
| • Chagas | • Malaria | • Yellow Fever Virus |
| • Chikungunya | • Marburg Virus | • Zika Virus |
| • Dengue | • Mayaro Virus | |
| • Ebola | • Newcastle Disease | |

Vector-Borne and tropical diseases occur principally in the tropics with the term 'tropical disease' relating to those that thrive in hot, humid conditions such as leishmania, Chagas, Ebola, Marburg virus and many more. Vector-Borne diseases are further categorised by the fact that they're transmitted between Humans by a vector that is typically a blood-sucking arthropod such as a mosquito, tick or flea. Examples of vector-borne diseases include Dengue fever, West Nile Virus, Lyme disease, and malaria.



Mosquito. A vector for tropical diseases such as Dengue and malaria.



Deer tick (Ixodes scapularis) a vector for Lyme disease.

In practise, these diseases are most prevalent in some of the poorest regions of the world in peoples who live in remote, rural areas, urban slums or conflict zones. The geographical location of these diseases makes it further difficult to treat and control outbreaks of these diseases, manage the underlying infection route and vaccinate, where possible. It is therefore essential that we can develop low-cost sensitive means of diagnosis, with low-cross reactivity to other infectious diseases, so early diagnosis is possible and treatment most effective.

To assist in this endeavour, Biorbyt offer a wide range of antigens and antibodies to assist researchers in the development of tests such as solid-phase, dip-sticks (ELISA), particle agglutination and lateral flow.

Tips and tricks for working with Flaviviruses in EIA assays

Many Vector borne diseases are caused by viruses from the genus *Flavivirus* of the family *Flaviviridae*. This family comprises over 70 viruses including dengue (DEN) viruses, Japanese encephalitis (JE) virus, St. Louis encephalitis (SLE) virus, and yellow fever (YF) virus - many of which are important human pathogens.

As all Flaviviruses are antigenically related to various degrees, it is essential that when developing an immunoassay, the antibodies used are specific to the disease of interest. High genetic homology between the different Virus species means that development of antibodies with no cross-reactivity to other flavivirus caused diseases is difficult.

Flaviviruses are simple enveloped viruses containing single-stranded RNA associated with a capsid protein. All share symmetry, appearance and their genomes encode a single, large polyprotein that is proteolytically processed to yield structural domains - E (Envelope), prM (precursor of membrane(M)) and Capsid protein. They also contain several non-structural proteins (NS) such as NS1, NS2, NS2b, NS3, NS4a, NS4b and NS5.3

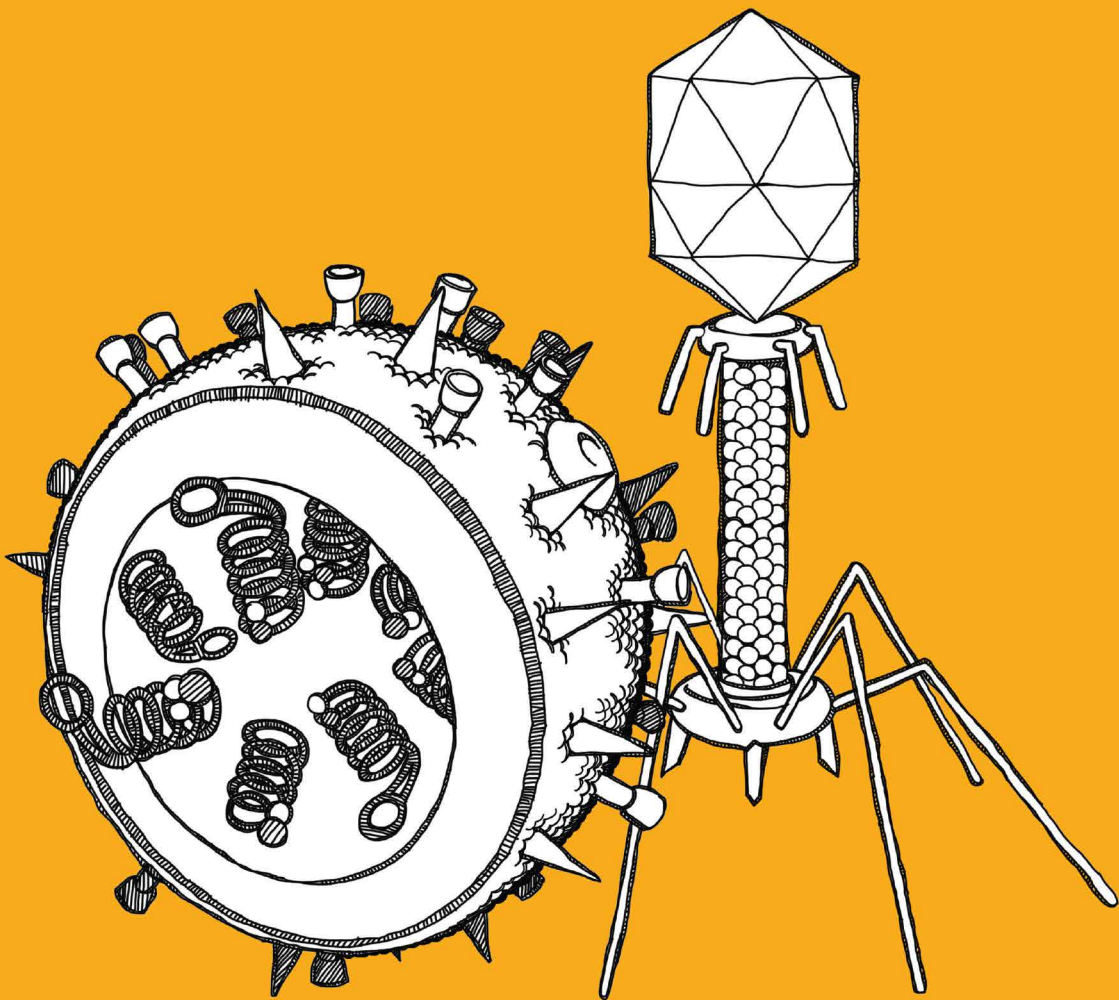
It is important to note that the dominant protein is the Envelope protein (E), which is present on the surface of the virion. It contains highly conserved regions and so antibodies to Envelope proteins are often cross-reactive to other serotypes and diseases. The NS1 protein is a glycosylated, membrane-bound secreted glycoprotein that has replicative and evasive functions. NS1 antigens can be detected early on in infection and are an excellent target for early diagnostic tests. NS1 is serotype-specific and so detection of NS1 antigens can enable virus serotyping by ELISA.

In order to improve the specificity of an assay, it is vital to remove cross-reactive antibodies that can lead to false positives by binding the antigen non-specifically. This can be achieved via defined epitope blocking ELISA's that permit differentiation of flaviviral infections by targeting epitopes on NS1 or E proteins. If low concentrations of unconjugated antigens from the potentially cross-reactive serotypes are included in the assay, these will block binding of the cross-reactive antibodies to the target antigen, thereby increasing assay specificity.

Validated, Matched antibody pairs

Disease	Capture	Detection	Disease	Capture	Detection
Dengue Virus NS1	orb55887	orb55886	Yellow Fever NS1	orb55885	orb55880
	orb55887	orb107981		orb55885	orb55881
	orb107981	orb107978		orb55885	orb55884
	orb107981	orb107979		orb55885	orb55883
	orb107981	orb107980		orb55885	orb402858
Ebola NP	orb421067	orb421068		orb55880	orb55884
Japanese Encephalitis Virus NS1 (JEV NS1)	orb525776	orb52577		orb55880	orb55881
	orb525776	orb525778		orb55880	orb402858
	orb525776	orb525779		orb55880	orb55883
	orb544441	orb52577		orb402858	orb55884
	orb544441	orb525778		orb402858	orb55883
	orb544441	orb525779		orb402858	orb55881
Malaria HRP-2	orb316676	orb316675		orb55881	orb55884
Malaria pLDH	orb316685	orb316686		orb55881	orb55883
	orb316684	orb316686		orb55883	orb55884
Malaria (Specific P. falciparum HRP-2)	orb23592	orb23594	Zika Virus NS1	orb371979	orb371980
	orb23592	orb23593		orb378455	orb378456
	orb316687	orb316688		orb378456	orb378456
				orb378455	orb383474
Nipah Virus G protein	orb421078	orb421077		orb378456	orb383475
				orb383474	orb378456

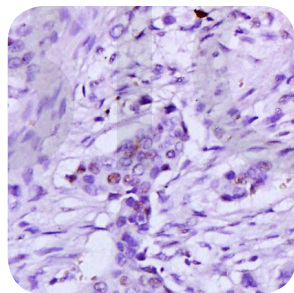
VIRUS & BACTERIA



VIRUS & BACTERIA

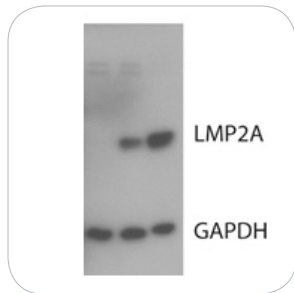
bioassusa.com 

HPV16 E6 protein | bs-0990R



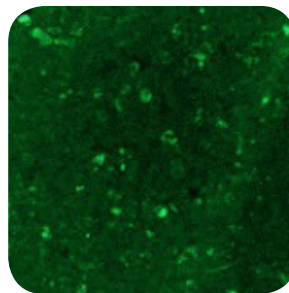
IHC-P | Human tumor

LMP2A | bs-4700R



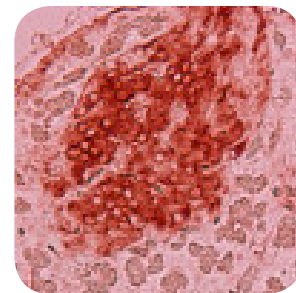
WB | Human 293T cells

Kilham Rat Virus/KRV-VP1/KRV-VP2 | bs-4642R



IF (IHC-P) | Rat spleen

Kilham Rat Virus/KRV-VP1/KRV-VP2 | bs-4642R



IHC-P | Rat pancreas

TARGET	CATALOG
Adeno-Associated Virus Capsid Protein VP1 Polyclonal Antibody	bs-10180R
Adenovirus 5 E1A Polyclonal Antibody	bs-6136R
Adenovirus Hexon Protein Polyclonal Antibody	bs-12354R
AEV Polyprotein Polyclonal Antibody	bs-4696R
Borrelia burgdorferi Outer Surface Protein A Polyclonal Antibody	bs-12879R
BRLF1 Polyclonal Antibody	bs-4542R
Brucella Polyclonal Antibody	PubM Q ed bs-2229R
Capsid Protein Polyclonal Antibody	bs-10057R
CSFV Envelope Glycoprotein E2 Polyclonal Antibody	bs-4527R
CSFV Polyprotein Polyclonal Antibody	bs-4528R
Cytomegalovirus pp65 Polyclonal Antibody	bs-0271R
Duck Hepatitis A Virus 1 Genome Polyprotein Polyclonal Antibody	bs-2197R
E. coli DH-5 Alpha Polyclonal Antibody	bs-2033R
E. coli K88-K99 Polyclonal Antibody	PubM Q ed bs-6994R
E. coli LPS Polyclonal Antibody	PubM Q ed bs-2351R
E. coli O157:H7 Polyclonal Antibody	bs-1563R
EBNA 3A Polyclonal Antibody	bs-0820R
EBNA 3B Polyclonal Antibody	bs-4698R
EBV Nuclear Antigen Polyclonal Antibody	bs-6938R
ESAT6 Polyclonal Antibody	bs-13107R
EV71 Polyprotein VP1 Polyclonal Antibody	PubM Q ed bs-0983R
H1N1 Hemagglutinin 1 Polyclonal Antibody	PubM Q ed bs-2001R
H1N1 Hemagglutinin 2 Polyclonal Antibody	bs-2004R
H5N1 Hemagglutinin Polyclonal Antibody	PubM Q ed bs-2284R
Haemophilus Influenza B Polyclonal Antibody	bs-15403R
HCMV UL23 Polyclonal Antibody	bs-0896R
HCMV UL49 Polyclonal Antibody	PubM Q ed bs-0808R
HCV-NS3 Polyclonal Antibody	bs-0219R
HCV-NS4a Polyclonal Antibody	bs-0213R
Heatstable Enterotoxin 1 Polyclonal Antibody	bs-8858R
Hemagglutinin Polyclonal Antibody	bs-10320R
Hepatitis A Virus Polyprotein VP1 Polyclonal Antibody	bs-6950R
Hepatitis B Virus X Protein Polyclonal Antibody	bs-2147R
Hepatitis C Virus NS4B Polyclonal Antibody	bs-4857R
Hepatitis C Virus NSSA Polyclonal Antibody	bs-4856R
Hepatitis C Virus RNA-directed RNA Polymerase Polyclonal Antibody	bs-4858R

TARGET	CATALOG
Hepatitis E Virus ORF3 Polyclonal Antibody	PubM Q ed bs-0212R
HGV Polyprotein Polyclonal Antibody	bs-0338R
HHV DNA polymerase Catalytic Subunit Polyclonal Antibody	bs-10489R
HHV8 ORF50 Polyclonal Antibody	bs-0746R
HIV1 Gag Protein Polyclonal Antibody	bs-4981R
HIV1 gp120 Polyclonal Antibody	bs-0241R
HIV1 p55+p24+p17 Polyclonal Antibody	bs-4942R
HPV L2 Polyclonal Antibody	bs-8547R
HPV16 E6 Protein (2E3) Monoclonal Antibody	bsm-0990M
HPV16 E6 Protein Polyclonal Antibody	bs-0990R
HPV16 E7 Polyclonal Antibody	bs-10446R
HPV18 E6 protein (2F6) Monoclonal Antibody	bsm-0991M
HPV33 E6 Polyclonal Antibody	bs-2968R
HPV33 E7 Polyclonal Antibody	bs-2969R
HSV 1 Polyclonal Antibody	bs-8605R
Influenza A Nonstructural Protein 1 Polyclonal Antibody	bs-4839R
Influenza A Virus Matrix Protein 2 Polyclonal Antibody	bs-0344R
Influenza A Virus Nucleoprotein Polyclonal Antibody	PubM Q ed bs-4976R
Kilham Rat Virus/KRV-VP1/KRV-VP2 Polyclonal Antibody	PubM Q ed bs-4642R
Large S protein Polyclonal Antibody	PubM Q ed bs-0343R
LCMV Protein Z Polyclonal Antibody	bs-6946R
LMP2 Polyclonal Antibody	bs-4700R
Maltose Binding Protein/MBP Polyclonal Antibody	bs-2967R
Measles Virus Fusion Protein Polyclonal Antibody	bs-0886R
MV Hemagglutinin Glycoprotein Polyclonal Antibody	bs-0887R
Mycobacterium tuberculosis Ag85A/ B Polyclonal Antibody	bs-6460R
NDV HN Protein Polyclonal Antibody	PubM Q ed bs-4529R
ompF Polyclonal Antibody	bs-2086R
RSV Nucleoprotein Polyclonal Antibody	bs-10207R
RSV Polyclonal Antibody	bs-1264R
Rubella Virus E1 Glycoprotein Polyclonal Antibody	bs-0319R
SARS ORF1a Polyprotein Polyclonal Antibody	bs-0132R
SARS S-protein Polyclonal Antibody	bs-0130R
Staphylococcus Enterotoxin B Polyclonal Antibody	PubM Q ed bs-10722R
Streptokinase Polyclonal Antibody	bs-9846R
Tetanus Toxin Heavy Chain Polyclonal Antibody	bs-11772R

Virology Products

Viruses cause contagious diseases like influenza, cold, warts, HIV/ AIDS, smallpox, Ebola as well as many other diseases. These viruses invade normal living cells and multiply producing their own kind and can be treated with antiretroviral drugs. The number of antiviral drugs available compared to antibacterial is relatively small due to difficulty in obtaining selective toxicity against viruses. There are many enzymes and proteins that are only present in these viruses with several virus specific replication steps as targets for various anti-viral drugs. BioVision is pleased to offer more than 30 antiviral agents, Virus purification kits, Recombinant proteins, Assay kits, ELISA kits and Antibodies for your research.

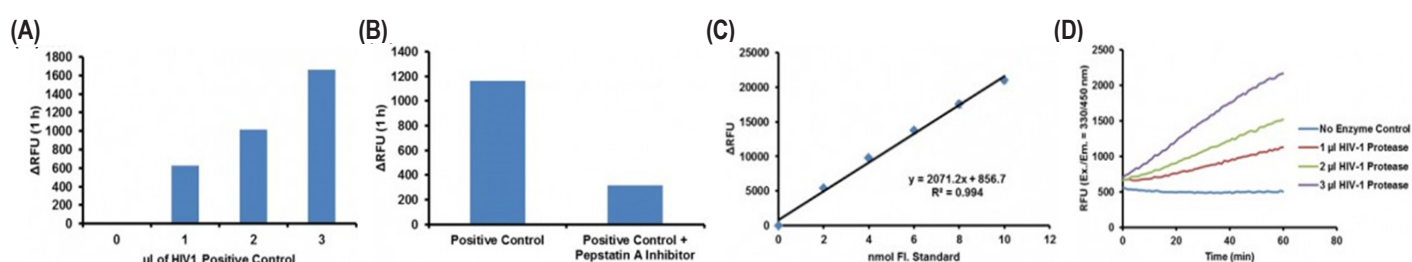


Figure: Measurement of HIV1 Protease activity using HIV-1 Protease as a positive control **(A)** and its inhibition by Pepstatin A inhibitor (**Cat # 1732**) **(B)**. FI. Standard plot **(C)** Progressive activity curves using different amounts of HIV-1 Protease (Positive Control) with time **(D)**. Assays were performed following the **K825-100** kit protocol.

Antibodies

Product Name	Cat. No.	Product Name	Cat. No.
Anti-2009H1N1 Antibody (2B5)	A1026	Anti-TIM3 Antibody	A1390
Anti-CD11b Rabbit Monoclonal Antibody	A1601	Anti-TIM3 Antibody (IHC003)	A1550
Anti-CD47 Antibody	A1387	Anti-V5 epitope tag, Human IgG1 Antibody	A1103
Anti-CD47/MER6 Antibody	A1077	Beclin 1 Antibody	3663
Anti-DDX3 Antibody	A1675	CCL4 Antibody (Center)	6731
Anti-Flavivirus group antigen Antibody	A1146	CD11b FITC Monoclonal Antibody (Clone ICRF44)	6955
Anti-Flavivirus group antigen Antibody	A1147	C-Kit/CD117 Antibody (NT)	6777
Anti-Flavivirus group antigen, Human IgG1 Antibody	A1102	CXCR4 Antibody	5224
Anti-HA (H5N1) Antibody (9F4)	A1240	GPR15 Polyclonal Antibody	5215
Anti-HBsAg Antibody (1C10E2)	A1372	HA (Influenza A Virus Hemagglutinin) Antibody	3924
Anti-HBsAg Antibody (1G1A10)	A1373	KLF4 mAntibody (4G6E11)	5300
Anti-HBsAg Antibody (3G9F6)	A1374	LIGHT Antibody	5607
Anti-HIV/p24 Antibody (1D4)	A1020	Phospho-ALIX Antibody	A1044
Anti-Human CD4 FITC Antibody (OKT4)	A1582	Phospho-AP-1 (Ser63) Antibody	A1249
Anti-HVEM / TNFRSF14 Antibody	A1084	V5-Tag Antibody	3985
Anti-LRH1 Antibody	A1688	Wnt-1 Antibody	3571
Anti-RSV (Felvizumab), Human IgG1 Antibody	A1446	Wnt-2 Antibody	3572R

Assay Kits

Product Name	Cat. No.	Product Name	Cat. No.
Adeno-associated Virus Maxi Purification Kit	K1303	c-jun (Human) ELISA Kit	K4198
Adeno-associated Virus Maxi Purification Kit	K1311	Dengue Virus IgG ELISA Kit	E4670
Adeno-associated Virus Mini Purification Kit	K1302	Dengue Virus IgM ELISA Kit	E4671
Adeno-associated Virus Mini Purification Kit	K1304	EBV-VCA IgA ELISA Kit	E4687
Adenovirus Maxi Purification Kit	K1301	EBV-VCA IgG ELISA Kit	E4688
Adenovirus Mini Purification Kit	K1300	EBV-VCA IgM ELISA Kit	E4689
AHCY Inhibitor Screening Kit (Fluorometric)	K326	HCV Maxi Purification Kit	K1310
Caspase-8 (Human) ELISA Kit	E4290	HCV Mini Purification Kit	K1309

Assay Kits

Product Name	Cat. No.	Product Name	Cat. No.
HIV-1 Protease Activity Assay Kit (Fluorometric)	K825	Measles (Rubeola) IgM ELISA Kit	E4663
HIV-1 Protease Inhibitor Screening Kit	K826	Mumps IgG ELISA Kit	E4669
HIV-2 Protease Activity Assay Kit (Fluorometric)	K845	Mumps IgM ELISA Kit	E4668
HSV-1 IgG ELISA Kit	E4680	PEG Virus Precipitation Kit	K904
HSV-1 IgM ELISA Kit	E4681	PEG Virus Precipitation Kit	K904
HSV-2 IgG ELISA Kit	E4682	Retrovirus Maxi Purification Kit	K1308
HSV-2 IgM ELISA Kit	E4683	Retrovirus Mini Purification Kit	K1307
QuickDetect™ INF-alpha (Human) ELISA Kit	E4450	Rubella IgG ELISA Kit	E4666
Influenza Neuraminidase Inhibitor Assay Kit	K524	Rubella IgM ELISA Kit	E4667
Lentivirus Maxi Purification Kit	K1306	TEV Protease Activity Assay Kit (Fluorometric)	K842
Lentivirus Mini Purification Kit	K1305	TFR (Human) ELISA Kit	K4185
Measles (Rubeola) IgG ELISA Kit	E4662	TNFRSF14/CD258 (Human) ELISA Kit	K4236

Antiviral Agents

Product Name	Cat. No.	Product Name	Cat. No.
AZ-960	B2065	OG-L002	9406
BAY 57-1293	2556	Oseltamivir Acid	B1886
BMS-663068	B2299	Oseltamivir Phosphate	B1885
Clemizole	2481	Pibrentasvir	B2168
Concanamycin A	B2091	Pritelivir mesylate	B2154
Daclatasvir dihydrochloride	B2224	PSI-7977	2715
Danoprevir	B2184	Rifampicin	B1511
Ganciclovir	1918	RSV-604	B1846
Glecaprevir	B2347	Suramin Hexasodium Salt	1874
Grazoprevir (MK-5172)	B2337	T-705 (Favipiravir)	2778
Ledipasvir	B2338	Telaprevir	B1235
Mefloquine hydrochloride	B2169	Valacyclovir Hydrochloride Hydrate	2201
MK-1439	B1250	Zanamivir	B1900
Nucleozin	B2064		

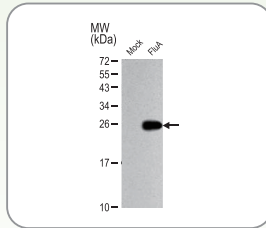
Proteins

Product Name	Cat. No.	Product Name	Cat. No.
CD111 / Nectin-1 / PVRL1, human rec	7379	Rec-Japanese Encephalitis Virus Envelope	P1112
CD155, human recombinant	7462	Recombinant Chikungunya Virus E1	P1113
c-Jun (1-79)-GST Fusion Protein	7001	Recombinant Ebolavirus BDBV	P1061
CXADR /CAR, human recombinant	7441	Recombinant Ebolavirus BDBV	P1059
FGR, Active	7724	Recombinant Murine Interleukin-27/p28 (IL-30)	4187
Glycoprotein B, HCMV Recombinant	P1240	Recombinant West Nile Virus Envelope Protein	P1065
HAVCR1 / KIM1 / TIM1, human recombinant	7494	Recombinant Zika Envelope Protein	P1063
HIV-1 (CN54) GP120	P1003	Recombinant Zika virus NS1 Protein	P1064
Human Recombinant FKBP4	6343	Src1, Active	7750
HVEM/TNFRSF14, human recombinant	7466	SUMO-GFP (Multi-Protease Control Protein)	M1072
IL-10, human recombinant	4155	EZCut™ TEV Protease, Recombinant	7847
IL-10, rat recombinant	4157	Tim-1, Fc Tag, Human Recombinant	P1352
IL-15, human recombinant	7273	Tim-1, Fc Tag, Mouse Recombinant	P1353
IL-27 / EBI-3, murine recombinant	4377	Tim-1, Human Recombinant	P1351
IL-27b / EBI-3, human recombinant	4376	Tim-1, Mouse Recombinant	P1354
Influenza A Hemagglutinin, Recombinant	P1005	TIM-3 / HAVCR2, Cynomolgus Recombinant	P1391
Influenza A virus / Neuraminidase (NA)	7508	Tim-3, (Fc-Tag Mouse), Mouse Recombinant	P1360
Influenza A Virus Hemagglutinin (HA) BP	3924BP	Tim-3, Human Recombinant	P1357
LAIR1 / CD305, Fc Tag, Human rec	P1239	Tim-3, Human Recombinant, (Fc-Tag Mouse)	P1358
LAIR1 / CD305, Human Recombinant	P1242	Tim-3, Mouse Recombinant	P1359
Lck, Active	7733	TIM3/ KIM3/HAVCR2, Fc Tag, Human Rec	7495
LIGHT, Human Recombinant	P1291	TIM3/HAVR2 Protein, Human Recombinant	P1002
LIGHT, Murine Recombinant	P1292	TPO, Human Recombinant	6483
Nectin-2 / CD112, Human Recombinant	P1371	TPO, human recombinant	4351
p53 Mutant, human recombinant	4832	TurboTEV Protease, Recombinant	9205
Pim 1, Active	7742	Vaccinia Virus B18R	8016
RANTES, human recombinant	4321	VAPB, Human recombinant	P1135
Rec EBOV Envelope Glycoprotein 1	P1060	Zika virus NS1 Protein	P1062

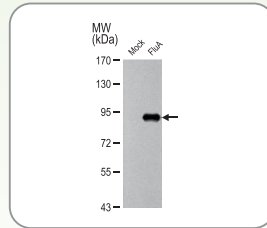


● Influenza A Virus

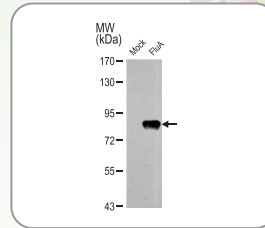
Citation Support



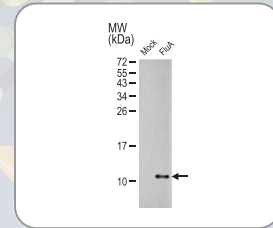
Influenza A virus M1 (matrix protein) antibody (GTX125928)



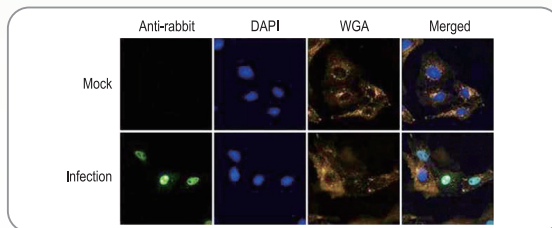
Influenza A virus PB1 protein antibody (GTX125923)



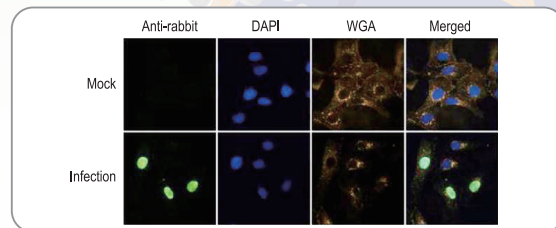
Influenza A virus PB2 protein antibody (GTX125926)



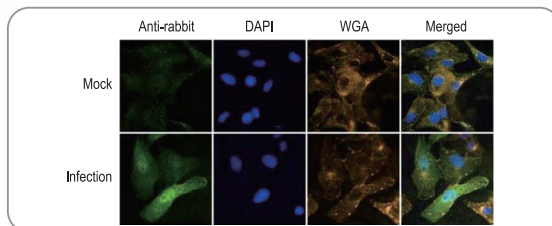
Influenza A virus NS2 (nonstructural protein) antibody (GTX125953)



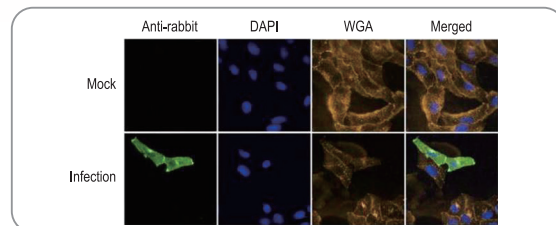
Influenza A virus NS1 antibody (GTX125990)



Influenza A virus NP antibody (GTX125989)



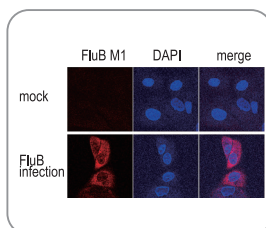
Influenza A virus PA antibody (GTX118991)



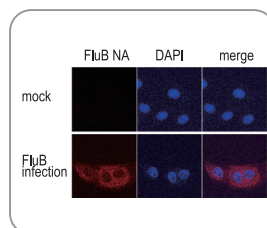
Influenza A virus M2 antibody (GTX125951)

● Influenza B Virus

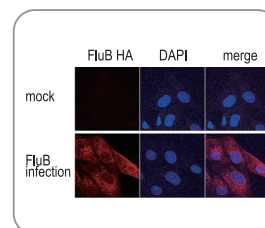
Citation Support



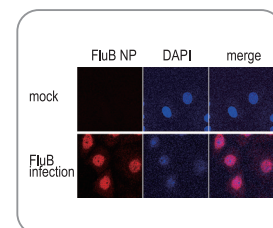
Influenza B Virus M antibody (GTX128537)



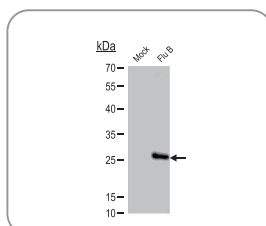
Influenza B Virus NA antibody (GTX128540)



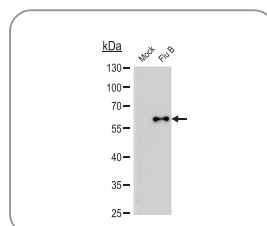
Influenza B Virus HA antibody (GTX128542)



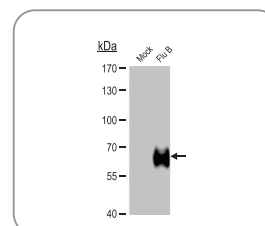
Influenza B Virus NP antibody (GTX128538)



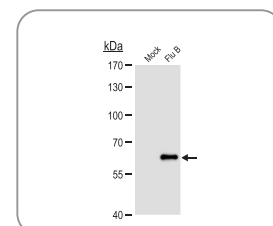
Influenza B Virus M antibody (GTX128536)



Influenza B Virus NP antibody (GTX629882)



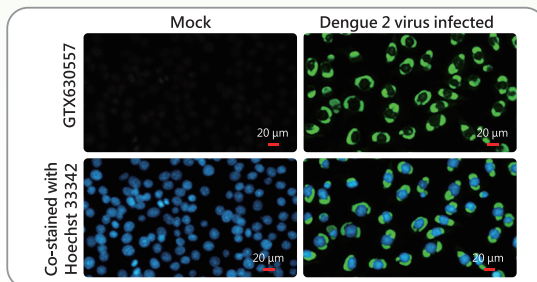
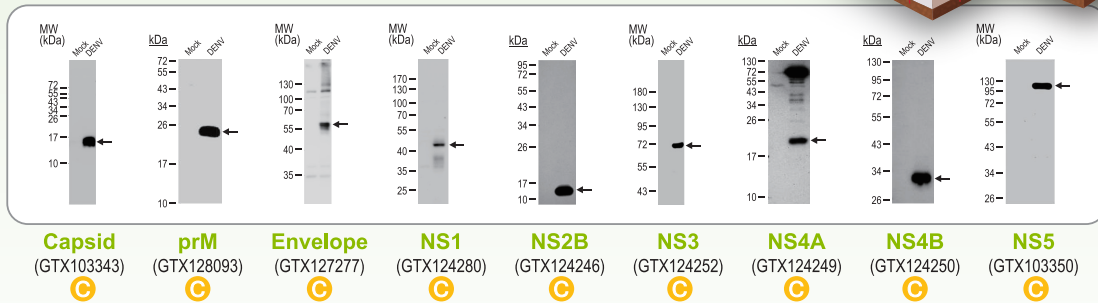
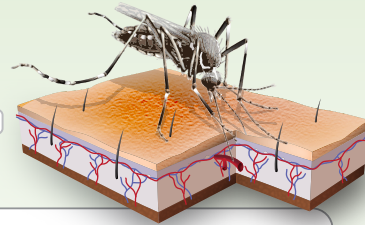
Influenza B Virus HA antibody (GTX128543)



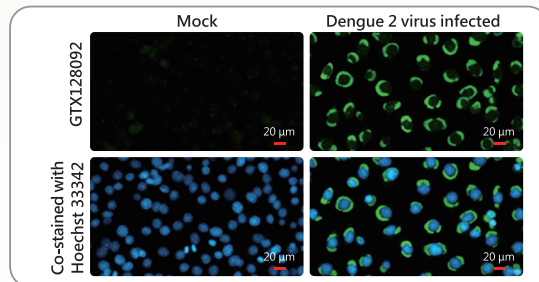
Influenza B Virus antibody (GTX128544)

● Dengue Virus

Citation Support

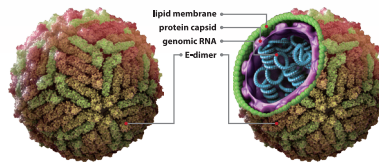


Dengue virus NS1 protein antibody (GTX630557)

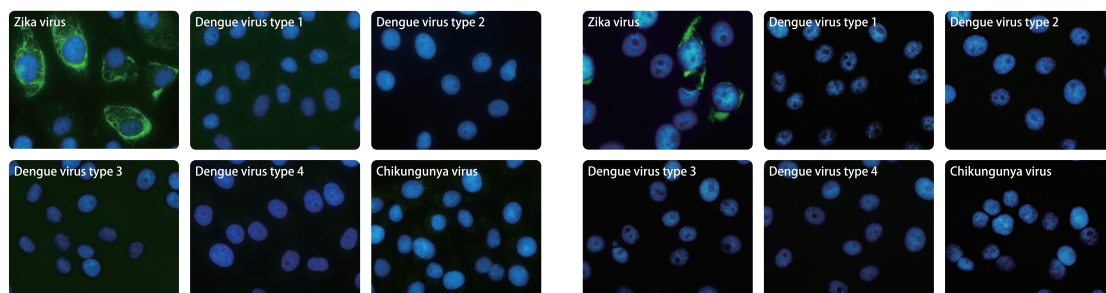
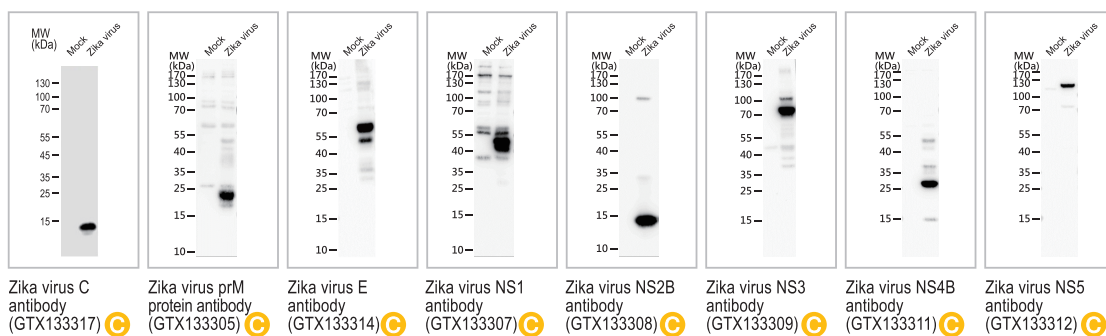
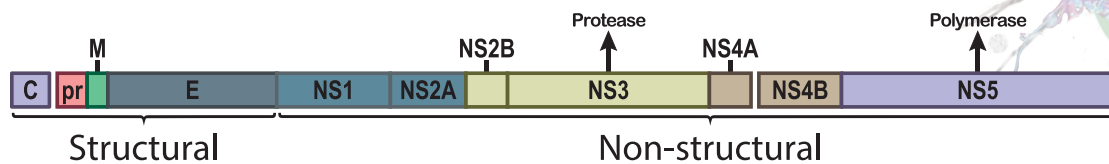


Dengue virus prM protein antibody (GTX128092)

● Zika Virus



Citation Support



Zika virus prM protein antibody (GTX133305)

Zika virus Envelope protein antibody (GTX133314)

Established in 1993, MBL International Corporation (MBLI) is a subsidiary of Medical and Biological Laboratories Co, Ltd (MBL), one of the leading biotechnology companies in Japan. Focused on providing high-quality, innovative, solutions-based products for both life science research and clinical diagnostics, MBLI supports research related to allergy, apoptosis, autophagy, cancer, epigenetics, immunology, neuroscience and more. The company's wide-ranging portfolio includes:

- Monoclonal and polyclonal antibodies
- MHC tetramers
- Fluorescent and recombinant proteins
- ELISA kits
- Flow cytometry products
- Exosome research products
- 3D cell culture products

MHC tetramers support virology research

Widely-used by virologists, MBLI's MHC tetramers are complexes of four major histocompatibility complex (MHC) molecules, which are associated with a specific peptide and bound to a fluorochrome-conjugated streptavidin. Most-commonly used for detection of antigen-specific T-cells, an $\alpha 3$ mutation affords superior sensitivity.

Advantages of MHC tetramers over traditional T-cell-based assays include:

- Direct detection of antigen-specific T-cells, independent of cell function
- Quantitative staining
- Rapid staining – suitable to analyse fresh blood or tissue-derived samples
- Superior throughput
- Applicable to multiplexing – including simultaneous assessment of multiple T-cell specificities and used in conjunction with intracellular staining
- Labeled cells remain viable - can be sorted by flow cytometry

Both Class I and Class II MHC tetramers are available, as well as over 60 alleles. It is recommended that customers perform a literature search to determine the best peptide/allele combination to detect the specific T-cells of interest.

Most MHC tetramers are available in PE, APC, and BV421 formats, with FITC offered on a subset of Class I tetramers. All these products undergo rigorous quality control testing, including spectrophotometric and HPLC analyses, while “premium” tetramers are also tested for functionality by flow cytometry. Diseases and models which have been studied using MHC tetramers include:

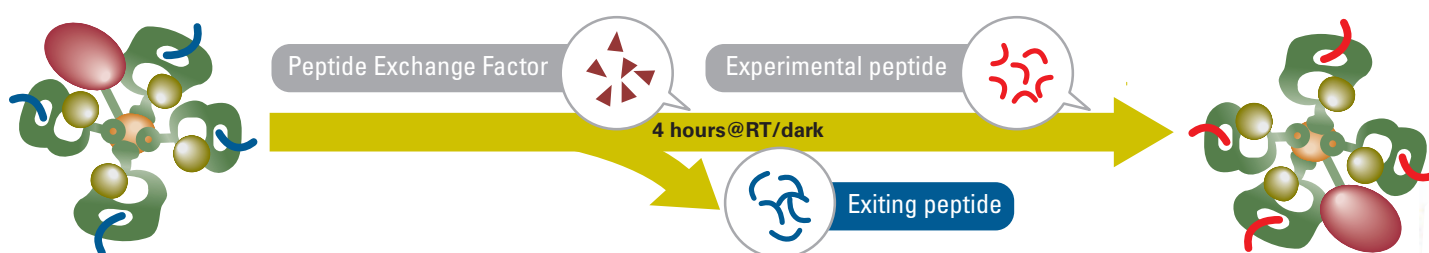
- Infectious diseases: HIV, EBV, CMV, HPV, HBV, HCV, Influenza, Measles, Malaria, TB, RSV
- Cancer: Breast, Prostate, Melanoma, Colon, Lung, Cervical, Ovarian, Leukemia
- Autoimmune diseases: Diabetes, Multiple sclerosis, Rheumatoid arthritis, Autoimmune vitiligo
- Transplantation: EBV and CMV
- Animal Models: OVA, E alpha, SIV

MBL's Top Tetramer Products

Product Name	Product code
iTag Tetramer/PE - HLA-A*02:01 Mart-1 (ELAGIGILTV) MHC tetramer for detecting antigen specific T-cell populations	TB-0009-1
HLA-A*0201 CMV PP65 (NLVPMVATV) MHC tetramer for detecting antigen specific T-cell populations	TB-0010-1
iTag Tetramer/PE - H-2 Kb OVA (SIINFEKL) MHC tetramer for detecting antigen specific T-cell populations	TB-5001-1
T-Select H-2Ld MuLV gp70 Tetramer-SPSYVYHQF-APC MHC tetramer for detecting antigen specific T-cell populations	TB-M521-2
T-Select I-Ab MOG 35-55 Tetramer-PE MHC tetramer for detecting antigen specific T-cell populations	TS-M704-1
iTag Tetramer/PE - HLA-A*02:01 Influenza-M1 (GILGFVFTL) MHC tetramer for detecting antigen specific T-cell populations	TB-0012-1
QuickSwitch™ Quant HLA-A*02:01 Tetramer Kit-PE Tetramer with an irrelevant exchangeable peptide in the MHC groove, a peptide exchange factor for catalyzing the peptide exchange reaction. A high affinity MHC-binding reference peptide used as peptide exchange positive control	TB-7300-K1

QuickSwitch™

Designed for rapid, high-quality creation of custom class I tetramers, QuickSwitch™ is a proprietary technology for exchanging peptides on an MHC tetramer. Using QuickSwitch™ Quant Tetramer Kits, researchers can perform peptide exchange, quantification, cell staining, and flow cytometry analysis all on the same day.



QuickSwitch™ technology for rapid peptide exchange. Peptides are added to ready-to-use tetramers in PE, APC or BV421, along with a peptide exchange factor. QuickSwitch™ Quant kits facilitate quantitation of peptide exchange. The resulting tetramers can be used to identify antigen-specific T-cells to targets of interest.

ISO-accredited since its inception in 2010, The Native Antigen Company has rapidly become one of the world's leading suppliers of infectious disease reagents. Widely acknowledged to be a primary source of reagents and kits for studying emerging diseases, the company delivers a growing product portfolio to support ongoing research into disease prevention and diagnosis.

By developing the highest-quality viral, bacterial and protozoal reagents in quick response to emerging public health threats, The Native Antigen Company aims to reduce the global burden of infectious disease. In addition to an extensive portfolio of reliable, high-purity antigens, The Native Antigen Company also offers highly-specific antibodies and ELISA immunoassays for the development of novel diagnostics and vaccines.

High-quality virus products

With a wide variety of products to support research into preventing and diagnosing endemic and emerging viral diseases, The Native Antigen Company includes within its portfolio a comprehensive range of viral antigens along with antibodies and immunoassays to detect them.

Zika Virus immunoassays

Providing exceptional sensitivity and specificity, both for antigen detection and for serological studies, The Native Antigen Company's range of Zika Virus immunoassay kits are developed using novel assay formats which incorporate proprietary flavivirus proteins to ensure the ultimate performance. Zika Virus immunoassay products include Zika Virus IgG/IgM/IgA ELISA, Zika Virus IgM ELISA and Zika Virus NS1 Capture ELISA.



Zika Virus IgG/IgM/IgA ELISA (ELS61232)

- High specificity (>90%) and sensitivity (>90%)
- Total assay time <2 hours
- Minimally cross-reactive with antibodies to Dengue virus (a closely-related flavivirus)
- May be used in any species – suitable to study animal models of Zika infection

Zika Virus antigens

Included within The Native Antigen Company's product portfolio, highly-pure recombinant Zika Virus antigens are driving Zika research. In addition to purified Zika Virus lysate and Zika Virus Vero cell lysate, these include:

- Zika Virus VLP (E, prM/M Proteins)
- Zika Virus Envelope Protein (Suriname Strain)
- Zika Virus NS1 Protein (Suriname Strain)
- Zika Virus NS1 Protein (Uganda strain)

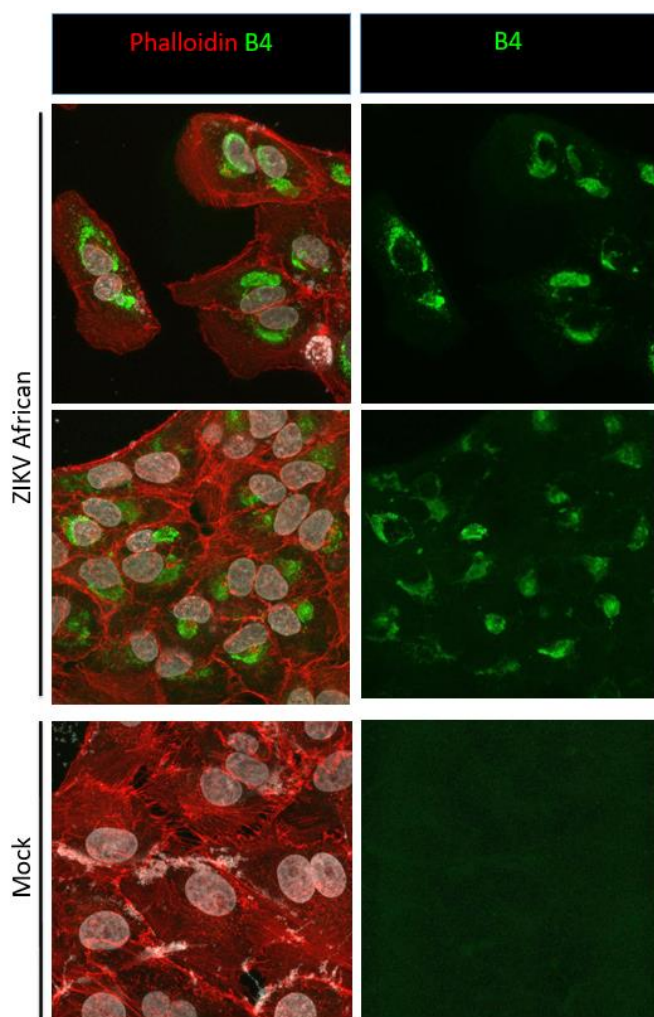
Zika Virus antibodies

With utility in applications such as direct ELISA, sandwich ELISA, Western blotting and immunofluorescence, The Native Antigen Company's Zika Virus antibodies demonstrate negligible cross-reactivity to deliver high-quality data.

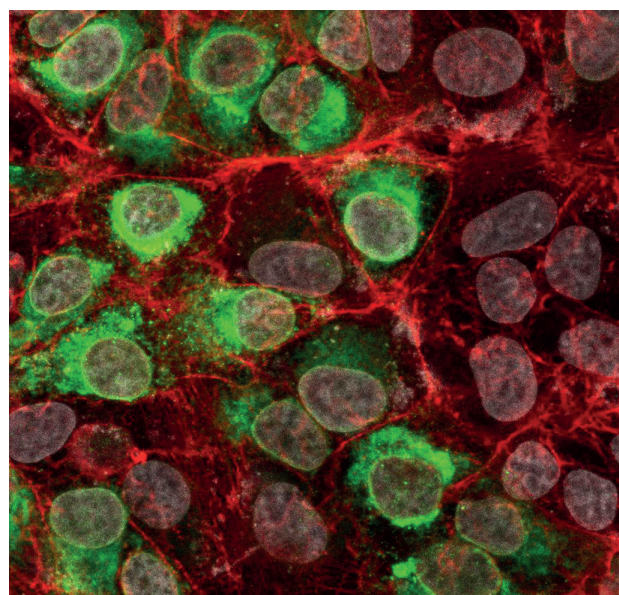
Dengue Virus antigens and antibodies

The Native Antigen Company offers a broad selection of Dengue Virus antigens. These include envelope protein, NS1 protein and VLP from a variety of serotypes. Produced using state-of-the-art expression techniques, exceptional product quality and purity is assured through optimised concentration and purification methods.

To complement the Dengue Virus antigens, The Native Antigen Company has developed highly-specific antibodies against selected Dengue Virus targets.



Immunofluorescence staining of ZIKV (African strain) infected cells using mouse anti-Zika Virus NS1 antibody (B4), catalogue number AbZIKVNS1-B4.



Immunofluorescent staining of Dengue Virus serotype 1 infected cells using mouse anti-Dengue Virus prM protein antibody (CC5), catalogue number MAB12136.



OZBIOSCIENCES
The art of delivery systems

Founded in 2003 by three internationally recognized experts in molecular delivery systems, gene therapy and vaccines, OZ Biosciences' mission is to provide cutting-edge transfection and transduction reagents to enable life sciences researchers to achieve outstanding success. With a strong focus on technologies to deliver biomolecules for *in vitro* and *in vivo* applications, the company has established a strong position in the field.

Supporting viral applications

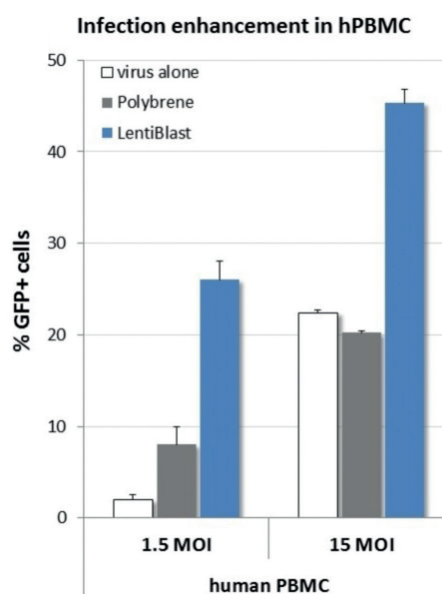
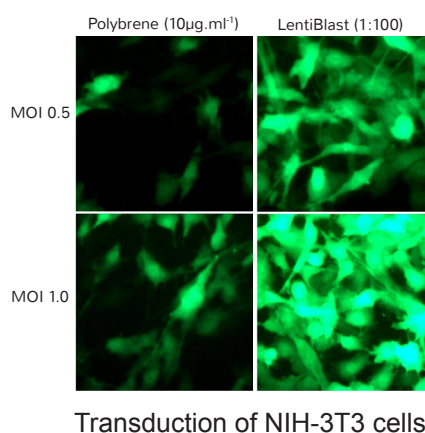
OZ Biosciences has created a comprehensive line of products dedicated to viral applications. These include kits and reagents to facilitate production, capture and concentration of viruses, as well as optimised technologies designed to increase transduction efficiencies.

LentiBlast™

Ideal to enhance lentiviral infection and transduction in any cell type, LentiBlast™ benefits from a patented chemical composition which enhances viral fusion with the cell membrane. Due to a favourable 'membrane permeable effect' which limits potential transmembrane changes, LentiBlast™ is totally compatible with cell viability.

- Enhances infection and transduction efficiency of lentivirus
- Non-toxic
- Compatible with cell lines and primary cells
- Allows using reduced amounts of lentivirus - low multiplicity of infection (MOI)
- Composed of two reagents for higher compatibility and efficiency
- Overcomes common obstacles that prevent successful transduction (cell density, passage number, lentivirus purity, MOI)
- Compatible with the presence of other enhancers, and suitable for sequential transductions

The superior performance of LentiBlast™ is reflected in comparative data and positive customer testimonials.



LentiBlast™ delivers superior performance to Polybrene. Left – transduction of NIH-3T3 cells, right – infection enhancement in hPBMC, “We did a side-by-side comparison on brain tumor stem cells with Polybrene, protamine sulphate, DEAE-Dextran, and ViraDuctin™ (Cell Biolabs). The LentiBlast™ was the clear winner.” Jayne S. - NIH/NCI

Helix-IN™ DNA transfection reagent

A newly-launched product developed to address the issues of classical transfection technologies, Helix-IN™ DNA transfection reagent is a novel cationic hydroxylated amphiphilic multi-block polymer (CHAMP™ technology). Designed to revolutionise polyfection, the bifunctional co-polymer is biocompatible, ionizable, pH-responsive and biodegradable.

- Broad spectrum transfection reagent for cell lines and hard-to-transfect cells
- High transfection efficiency and increased transgene expression even with low DNA amount
- High intracellular protein production while preserving viability
- High secreted protein production while minimizing cellular stress
- Biodegradable - avoid secondary effects
- Compatible with any culture medium

Helix-IN™ transfection efficiency

Cell type	<20%	20-40%	41-60%	60-80%	>80%
661W					
AC16					
Astrocyte derived					
BV2					
C2C12					
C6					
Cardiomyocyte cell line					
CHO					
CLU-301					
COS					
DC2.4					
HEK-293					
HeLa					
K562					
MCF7					
MDA-MB-231					
MDCK					
MEF					
N13					
NIH-3T3					
RAW264					
RPE					



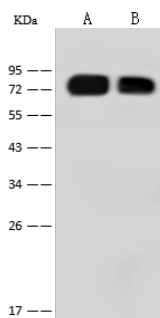
Founded in 2007 and located in Beijing, Sino Biological Inc. is a leading manufacturer of high-quality biological research reagents, all of which are developed and produced in-house. Benefiting from an extensive technology platform, multiple validation platforms, and the capacity for high throughput and rapid manufacture, the company releases over 2000 new products annually to keep up with researchers' varied demands.

Cutting-edge tools for virus research

Recognised as the world's largest virus reagent centre, Sino Biological offers tools for basic research, anti-virus drug development, virus vaccine development, virus detection, and the development of anti-virus antibodies. These include reagents for studying Influenza, HIV, Coronavirus, Respiratory Syncytial Virus, Ebola, and many other viruses.

Influenza

- Over 2200 influenza reagents
- Over 220 influenza strains
- H1N1 – H18N11
- Influenza B



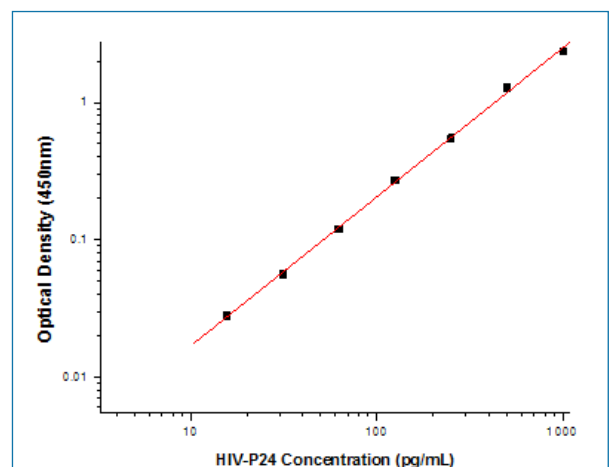
Western blot detection using anti-Influenza A H1N1 (A/California/04/2009) Hemagglutinin / HA rabbit polyclonal antibody (catalogue number 11055-T62).
Sample: Influenza A H1N1 (A/California/04/2009) Hemagglutinin / HA recombinant protein, Lane A: 30ng, Lane B: 10ng.

HIV

- Over 330 HIV reagents
- 10 HIV strains
- 13 HIV molecules
- HIV-1, HIV-2

Coronavirus (CoV)

- Over 180 CoV reagents
- MERS CoV, SARS CoV, HCoV-HKU1, DcCoV
- Viral molecules including Spike and nucleoprotein

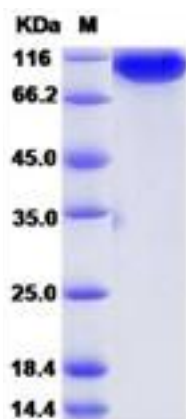


Standard curve generated using Human Immunodeficiency Virus type 1 (HIV-1) p24 / Capsid Protein p24 ELISA Pair Set (catalogue number SEK11695).



HOT Protein products

Product Name	Cat No.
Spike Protein S1 Subunit	40069-V08H
Spike Protein ECD (aa 1-1297)	40069-V08B
Spike Protein S1 (aa 1-725)	40069-V08B1
Spike Protein S2 Subunit	40070-V08B



SDS-PAGE analysis of MERS-CoV (NCoV/Novel coronavirus) Spike Protein S1 aa1-725, His Tag (catalogue number 40069-V08H).

Respiratory Syncytial Virus (RSV)

- Over 100 RSV reagents
- Strains including A2, Long, RSS-2 and B1
- RSV-F, RSV-G

Ebola

- Over 200 Ebola virus reagents
- Zaire, Sudan, Bundibugyo Reston, Tai Forest
- GP, NP, L, VP40, VP24

Other Viruses

AcMNPV	CAV	CHIKV	CMV
CyCMV	DENV	EBV	EV71
EV-D68	HCV	HeV	HPV
HRV	HTNV	NiV	PRRSV
RVFV	SFTSV	SIV	TBEV
Vaccinia	WNV		



Antibodies and reagents for flow cytometry

Exbio entered the antibody market as a spin-off company of the Czech Academy of Sciences in 1990. In cooperation with academic institutions, the company develops and manufactures antibodies, kits and reagents for flow cytometry.

For Virology, Exbio provides antibodies against several viruses.



Diagnostic Antibodies and Kits

Since 1987 the Dutch company IQ Products develops and manufactures antibody-based diagnostic assays. Specialized in flow cytometry, the company also provides high-quality antibodies and ELISA kits. Currently a focus in development lies on woman's health.

For Virology, IQ Products offers detection systems for Viral diseases like the Cytodetect™ Kit (HIV) and the CMV Brite™ Turbo Kit as well as Polyomavirus Antibody for immunohistochemistry.



Antibodies for IHC

LSBio provides high quality antibodies for immunohistochemistry, including >200,000 primary antibodies against >20,000 targets. 11,000 of these antibodies are more intensively validated and marked as IHC-plus™.

For Virology, LSBio offers a huge range of antibodies against several virus antigens.



Antibodies and recombinant proteins

ProSci Inc., located in San Diego, CA, specializes in custom polyclonal, monoclonal, and single domain antibody development and production.

For Virology, ProSci offers antibodies against several virus proteins.



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E-Mail: info@biozol.de

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