

# BioVendor new products

April, 2020:

Dear customer, we would like to introduce our new products and hope you will find them interesting.

## miRNA

### NEW miREIA KITS

CAT. NO.	NAME	ASSAY FORMAT
<a href="#">RDM0039H</a>	hsa-miR-100a-5p miREIA	miREIA – miRNA enzyme immunoassay
<a href="#">RDM0035H</a>	hsa-miR-192-5p miREIA	miREIA – miRNA enzyme immunoassay
<a href="#">RDM0040H</a>	hsa-miR-203a-3p miREIA	miREIA – miRNA enzyme immunoassay
<a href="#">RDM0041H</a>	hsa-miR-625-5p miREIA	miREIA – miRNA enzyme immunoassay
<a href="#">RDM0042H</a>	hsa-miR-5100 miREIA	miREIA – miRNA enzyme immunoassay

### miREIA - miRNA Enzyme Immunoassay

#### » FEATURED PRODUCT: hsa-miR-625-5p miREIA

miR-625 has been found in various tumors, and it also exhibits diverse functions in cardiovascular diseases and pulmonary diseases.



#### Oncology

- responsible for the regulation of metastasis in gastric tumor cells
- knockdown of RHPN1-AS1 inhibited the proliferation, migration and invasion activity of glioma cells via regulating miR-625-5p/REG3A expression
- regulated PKM2 expression on mRNA and protein level in melanoma cells (MC)
- negative relationship between miR-625-5p and PKM2 expression in clinical melanoma samples suggesting miR-625-5p/PKM2 plays a role in MC glucose metabolism

#### Cardiovascular disease

- negative regulator of cardiac hypertrophy
- inhibited cardiac hypertrophy through targeting STAT3 and CaMKII. miR-625-5p directly targeted CaMKII and inhibited its expression
- attenuated Ang II-induced cardiac hypertrophy through CaMKII/STAT3
- expression levels of miR-421, miR-1233-3p and miR-625-5p are lower in TOF patients with symptomatic right heart failure
- downregulation was confirmed in aortic valve stenosis as a major cause of morbidity and mortality

#### Pulmonary disease

- inhibitor of asthma airway inflammation in human bronchial epithelial cells by targeting AKT2
- downregulated in the asthma
- overexpression inhibited interleukin-6 (IL-6) and tumor necrosis factor  $\alpha$  (TNF $\alpha$ ) secretion in 16HBEs

See more about [hsa-miR-625-5p miREIA](#)

For these and more BioVendor miREIA kits, please visit [www.biovendor.com/mirna](http://www.biovendor.com/mirna).

## NEW IMMUNOASSAYS

CAT. NO.		NAME	IVD/RUO	ASSAY FORMAT
<a href="#">RAI009R</a>	Human	Anti-SARS-CoV-2 S1RBD IgG ELISA	RUO	ELISA
<a href="#">G61RHA20</a>	Human	Biocredit Covid-19 Ag Detection Kit	IVD CE	Immunochromatography rapid test
<a href="#">RBG19001R</a>	Human	Brain-derived Neurotrophic Factor ELISA	RUO	Sandwich ELISA
<a href="#">41A227</a>	Human	Positive control: Humanized IgG Monoclonal Antibody against SARS-CoV-2 Nucleocapsid Protein (NP)	RUO	Control Set
<i>Coming soon</i>	Human	Positive control: Humanized IgM Monoclonal Antibody against SARS-CoV-2 Nucleocapsid Protein (NP)	RUO	Control Set
<i>Coming soon</i>	Human	Positive control: Humanized IgG Monoclonal Antibody against SARS-CoV-2 S1RBD	RUO	Control Set
<a href="#">RGP028R</a>	Human	Interleukin-6R (CD126) ELISA	RUO	Sandwich ELISA
<a href="#">466175</a>		Nanopia KL-6 Reagent 1 ELISA	RUO	Immunoturbidimetric assay
<a href="#">466199</a>		Nanopia KL-6 Reagent 2 ELISA	RUO	Immunoturbidimetric assay
<a href="#">1N38C2</a>	Human	Rapid 2019-nCoV IgG/IgM Combo Test	IVD CE	Immunochromatography rapid test
<a href="#">41A225</a>	Human	SARS-CoV-2 NP Ab ELISA	IVD CE	ELISA
<a href="#">41A222</a>	Human	SARS-CoV-2 NP IgG ELISA	IVD CE	ELISA
<a href="#">41A224</a>	Human	SARS-CoV-2 NP IgM ELISA	IVD CE	ELISA
<a href="#">41A228</a>	Human	SARS-CoV-2 Nucleocapsid protein (NP) High-sensitivity Quantitative ELISA	RUO	ELISA

## » FEATURED PRODUCT: Anti-SARS-CoV-2 Antibody and Antigen Detection ELISA Kits

COVID-19 is pandemic as declared by the World Health Organization (WHO). As the disease outbreak has spread within the population, serologic assays complementary to the molecular diagnostic methods are urgently needed. **Validated serologic assays** are necessary for **contact tracing, identifying the viral reservoir, and epidemiologic studies**.

**Patients are developing antibodies from two to about fifteen days after developing symptoms.** The typical reaction, similar to many other pathogens, is: first, a flush of IgM, a generic type of antibody, followed later by the longer-lasting and more-specific IgG antibodies. It has been published that **combining RNA and antibody detections significantly improved the sensitivity of pathogenic diagnosis** for COVID-19, even in the early phase of 1-week since onset. Moreover, a **higher titer of Ab was independently associated with a worse clinical classification**.

Despite the advantages of rapid tests (simplicity, fast result obtaining), validated ELISA tests represent the gold standard in serology.

**Anti-NP Ab, IgM and IgG ELISAs**

The nucleocapsid protein (NP) is the most abundant viral protein and the anti-NP antibodies are the earliest and the most predominant antibodies detectable in the patient's blood samples after coronavirus infection. Among the total Ab, IgM and IgG specific assays, the anti-NP Ab provides the best clinical sensitivity while the anti-NP IgM and NP IgG allow distinguishing specifically the IgM or IgG phase of the immune response.

See more about [Anti-NP Ab, IgM and IgG ELISAs](#)

**Anti-S1RBD IgG ELISA**

For coronaviruses, the most divergent protein is the spike protein. S1 polypeptide contains a receptor-binding domain (S1RBD) crucial for the specific recognition and interaction with the human receptor ACE2, which is the first and the most essential step for the virus infection. The spike protein is the main antigen that elicits neutralizing antibodies, as this protein is the sole protein on the viral surface that is responsible for entry into the host cell.

See more about [Anti-S1RBD IgG ELISA](#)

**NP antigen quantification ELISA**

The highly sensitive assay can recognize and quantify recombinant and native SARS-CoV-2 NP in serum or other samples with an **excellent sensitivity of 5 pg/ml**.

See more about [NP antigen quantification ELISA](#)

## NEW PROTEINS

CAT. NO.		NAME	SIZE	SOURCE
<a href="#">RP1791121050</a>	Human	ACE2 (18-615)	0.05 mg	CHO cells
<a href="#">RP1791122050</a>	Human	ACE2 (19-740)	0.05 mg	CHO cells
<a href="#">RD173035100</a>	Human	Connective Tissue Growth Factor	0.1 mg	<i>E. coli</i> Tag free
<a href="#">RD175015100</a>	Human	Interleukin-6	0.1 mg	HEK293
<a href="#">RD172349100</a>	Human	MxA Protein	0.1 mg	<i>E. coli</i>
<a href="#">RD175486100</a>	Human	NT-proBNP	0.1 mg	HEK293
<a href="#">RP9720150050</a>	SARS	SARS-CoV-2 (2019-nCoV) Nucleocapsid Mosaic Protein	0.05 mg	<i>E. coli</i>
<a href="#">RP9720150250</a>	SARS	SARS-CoV-2 (2019-nCoV) Nucleocapsid Mosaic Protein	0.25 mg	<i>E. coli</i>
<a href="#">RP9720151000</a>	SARS	SARS-CoV-2 (2019-nCoV) Nucleocapsid Mosaic Protein	1 mg	<i>E. coli</i>
<a href="#">RP9720130050</a>	SARS	SARS-CoV-2 (2019-nCoV) Nucleocapsid Protein	0.05 mg	<i>E. coli</i>
<a href="#">RP9720130250</a>	SARS	SARS-CoV-2 (2019-nCoV) Nucleocapsid Protein	0.25 mg	<i>E. coli</i>
<a href="#">RP9720131000</a>	SARS	SARS-CoV-2 (2019-nCoV) Nucleocapsid Protein	1 mg	<i>E. coli</i>
<a href="#">RP9720110050</a>	SARS	SARS-CoV-2 (2019-nCoV) Spike Glycoprotein-S1 Protein	0.05 mg	HEK293
<a href="#">RP9720110150</a>	SARS	SARS-CoV-2 (2019-nCoV) Spike Glycoprotein-S1 Protein	0.15 mg	HEK293
<a href="#">RP9720110250</a>	SARS	SARS-CoV-2 (2019-nCoV) Spike Glycoprotein-S1 Protein	1 mg	HEK293
<a href="#">RP9720120050</a>	SARS	SARS-CoV-2 (2019-nCoV) Spike Glycoprotein-S2 Protein	0.05 mg	HEK293
<a href="#">RP9720120150</a>	SARS	SARS-CoV-2 (2019-nCoV) Spike Glycoprotein-S2 Protein	0.15 mg	HEK293
<a href="#">RP9720120250</a>	SARS	SARS-CoV-2 (2019-nCoV) Spike Glycoprotein-S2 Protein	1 mg	HEK293
<a href="#">RP9720140050</a>	SARS	SARS-CoV-2 (2019-nCoV) Spike-E-M Mosaic Protein	0.05 mg	<i>E. coli</i>
<a href="#">RP9720140250</a>	SARS	SARS-CoV-2 (2019-nCoV) Spike-E-M Mosaic Protein	0.25 mg	<i>E. coli</i>
<a href="#">RP9720141000</a>	SARS	SARS-CoV-2 (2019-nCoV) Spike-E-M Mosaic Protein	1 mg	<i>E. coli</i>
<a href="#">RI973598100</a>	SARS	SARS-CoV-2 Nucleocapsid protein (NP)	0.1 mg	<i>E. coli</i>
<a href="#">RI973599100</a>	SARS	SARS-CoV-2 Spike Protein S1 Receptor-Binding Domain (S1RBD)	0.1 mg	<i>E. coli</i>

## PROTEINS

### » FEATURED PRODUCT: SARS-CoV-2 and ACE2 Recombinant Proteins

Coronaviruses (CoVs), within the order Nidovirales, are enveloped, single-strand, positive-sense RNA viruses with a large genome of approximately 30 kbp in length. The new virus is named severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), with the resulting disease known as coronavirus disease 2019 (COVID-19).

SARS-CoV-2 contains four structural proteins: **Spike (S)** protein consisting of two **subunits, S1 and S2**, **envelope (E)** protein, **membrane (M)** protein, and **nucleocapsid (N)** protein. BioVendor offers a broad spectrum and variants of recombinant SARS-CoV-2 proteins.

Besides the coronavirus proteins, human **ACE2** (Angiotensin-converting enzyme 2) enzyme/receptor presented on the cell surface of many organs (e.g. intestines, arteries, lungs, heart and kidney) is a key protein in developing COVID-19 infection in the human body. SARS-CoV-2 binds the cellular receptor ACE2 through the receptor-binding domain (RBD) of the S1 subunit of the coronavirus Spike protein (S). This interaction enables the virus to enter the host cell.

See more about [SARS-CoV-2 and ACE2 Recombinant Proteins](#)

## NEW PCR KITS / ENZYMES / REAGENTS

CAT. NO.	SPECIES	NAME	FORMAT	SIZE
<a href="#">NFIH001</a>	Human	A*STAR Fortitude 2.0 COVID-19 Real-Time RT-PCR Test	RT-qPCR	200 tests (kit)
<a href="#">RR-0479-02</a>	Human	Liferiver Novel Coronavirus (2019-nCoV) Real Time Multiplex RT-PCR Kit	RT-qPCR	25 tests (kit)
<a href="#">DHUV02313</a>	Human	ViroReal® Kit SARS-CoV-2 & SARS	RT-qPCR	100 tests
<a href="#">DHUV02313x5</a>	Human	ViroReal® Kit SARS-CoV-2 & SARS	RT-qPCR	500 tests
<a href="#">DHUV02313x50</a>	Human	ViroReal® Kit SARS-CoV-2 & SARS	RT-qPCR	5000 tests

## PCR KITS / ENZYMES / REAGENTS

### » FEATURED PRODUCT: RT-qPCR: ViroReal® Kit SARS-CoV-2 & SARS

A new coronavirus, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), has recently emerged to cause a human pandemic of COVID-19. Molecular diagnostic tests based on **reverse transcription real-time PCR** (RT-PCR) were rapidly developed and represent the frontline diagnostic tool and established confirmation method.

**ViroReal® Kit SARS-CoV-2 & SARS** detects the nucleocapsid protein gene (N gene) of SARS-CoV-2 as well as SARS-CoV and SARS-related coronavirus. ViroReal® Kit SARS-CoV-2 & SARS is intended to cover possible future changes in the virus sequence, therefore a highly conserved region in all SARS coronavirus clusters of the N gene was chosen as the target region. This approach allows universal detection of all so far known SARS-CoV strains including SARS-CoV-2 and SARS-like CoV without discriminating between strains. The primer and probe design chosen is not identical to the WHO design.

An **internal RNA positive control** (RNA IPC) is detected in Cy5 channel and is used as RNA extraction as well as RT-PCR inhibition control. The target for the RNA IPC is extracted with the sample.

The advantage of the assay design is an easy interpretation of single-gene determination, targeting the conserved region of the N gene ensures high resistance to expected virus mutations.

See more about [RT-qPCR: ViroReal® Kit SARS-CoV-2 & SARS](#)

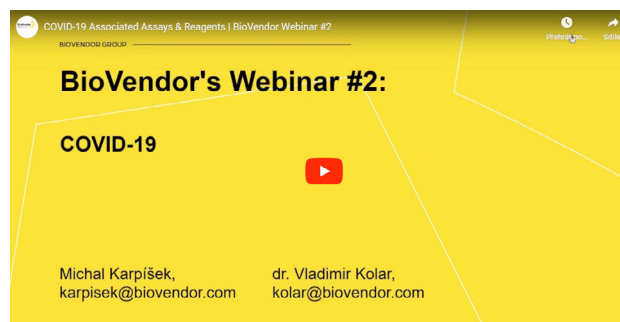
## COVID-19 ASSOCIATED ASSAYS & REAGENTS | BIOVENDOR WEBINAR #2

As a leading developer and manufacturer of IVD and Life Science products, BioVendor is committed to contribute to manage the spread of COVID-19 and to accelerate the research related to the SARS-CoV-2 virus. We share information about our assays and reagents and explain what is their utility in the context of COVID-19 outbreak. From diagnosis through research to diagnostic device development. We are looking forward to the special issue of BioVendor webinar with the BioVendor team.

### Key points covered in this webinar:

- COVID-19: Diagnosis
- COVID-19: Prognosis
- COVID-19: Therapy monitoring / Disease progression
- Research and assay development reagents

Please see the webinar [here](#).



**BioVendor – Laboratorní medicína a.s.**

Phone: +420 549 124 185

Fax: +420 549 211 460

E-mail: [info@biovendor.com](mailto:info@biovendor.com)

[www.biovendor.com](http://www.biovendor.com)