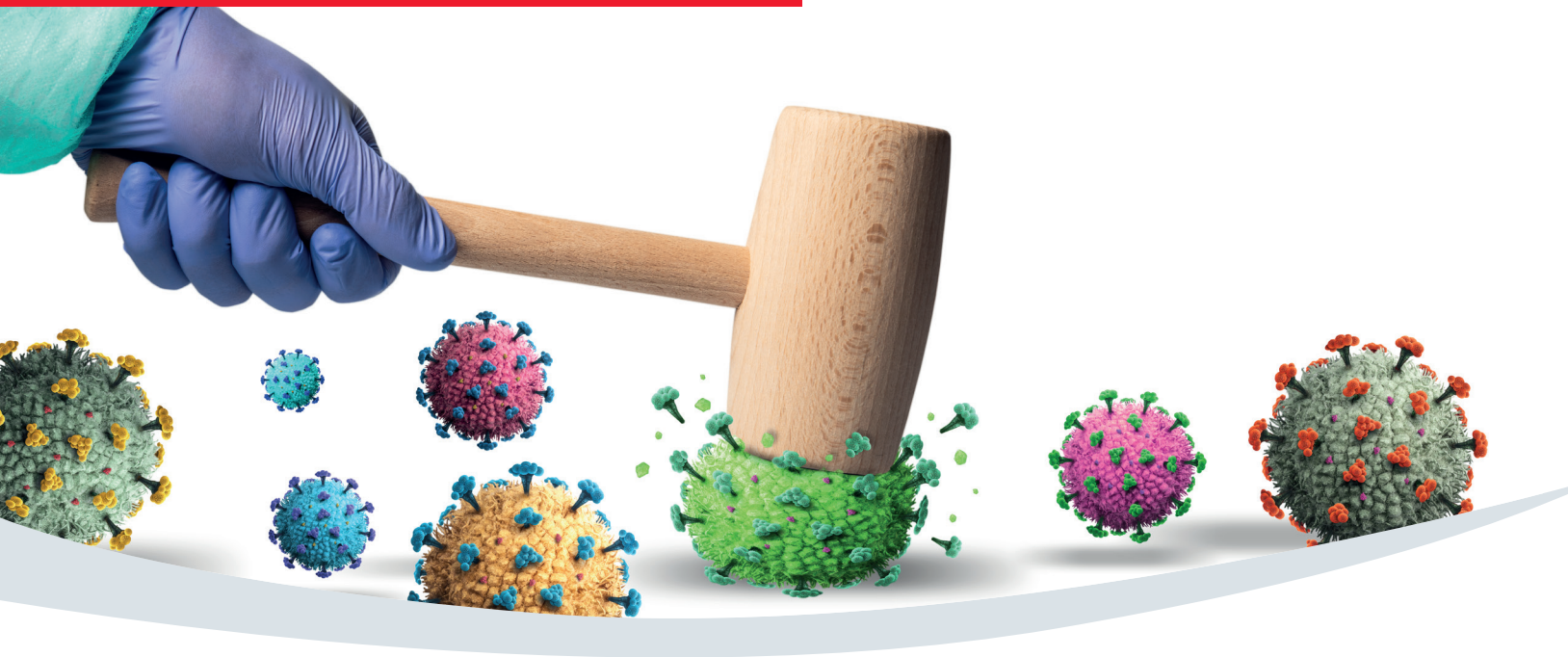


# COVID-19

## SARS-CoV-2 Research



## Defeat the SARS-CoV-2 Variants

- ❖ Cell lines designed for studying SARS-CoV-2 & developing therapeutics
- ❖ Expression plasmids for research on SARS-CoV-2 variants
- ❖ Recombinant proteins for screening assays (ELISA & LIPS)
- ❖ Recombinant antibodies for SARS-CoV-2 Research

The ongoing coronavirus disease-19 (COVID-19) pandemic is caused by the severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2). There is a tremendous need to acquire in-depth knowledge of the virus infection cycle and the mounting of innate and adaptive immunity. InvivoGen offers an **expanding set of tools** to foster research on SARS-COV-2 infection and immune responses.

Choose from our extensive collection of COVID-19 reagents:

Cell Lines & Inhibitors

Antibodies

Genes

Recombinant Proteins

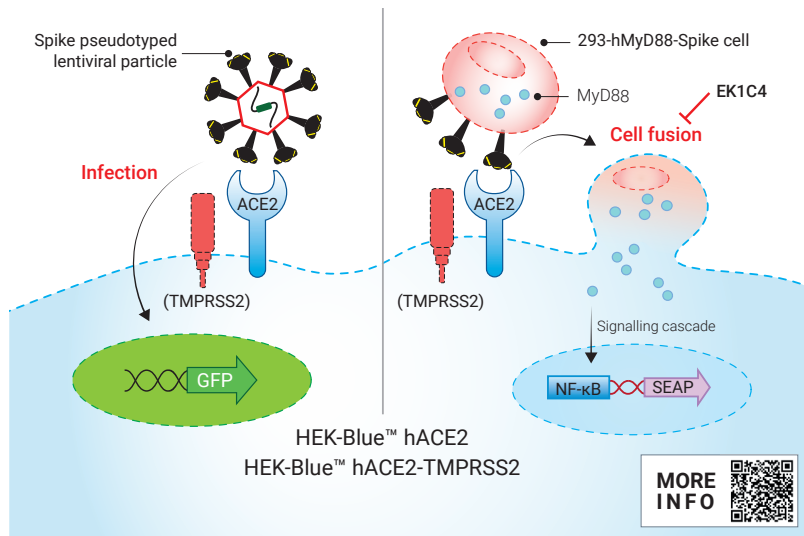
[WWW.INVIVOGEN.COM/COVID-19](http://WWW.INVIVOGEN.COM/COVID-19)

# COVID-19 Related Cell Lines & Inhibitors

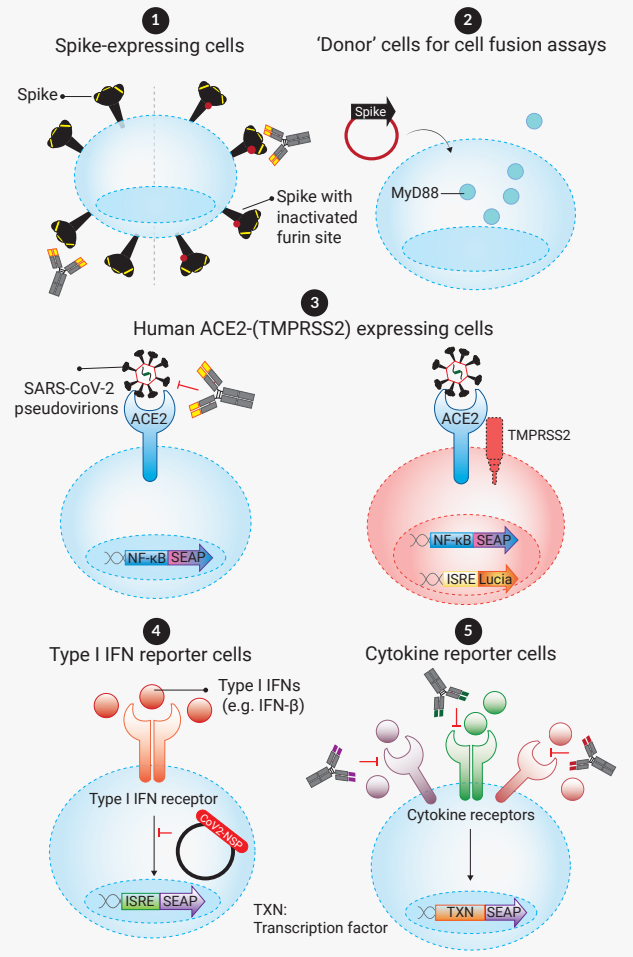
## Designed for studying SARS-CoV-2 & developing therapeutics

InvivoGen has developed families of cell lines, derived from the human embryonic kidney 293 (HEK-293) cell line or the human A549 lung carcinoma cell line, to develop and screen inhibitors of infection and cell fusion. For this, InvivoGen offers Spike-expressing cells, «donor» cells for cell fusion and SARS-CoV-2 cellular receptor/co-receptor expressing cells. Moreover, pro-inflammatory immune responses can be analyzed and quantified through the use of InvivoGen's Type-I IFN or Cytokine reporter cells.

### Studying infection and cell fusion with HEK-Blue™ hACE2 cells.



### InvivoGen's various families of COVID-19-related cell lines



PRODUCT	DESCRIPTION	QUANTITY	CAT. CODE
<b>CELL LINES</b>			
293-SARS2-S Cells	SARS-CoV-2 spike (D614G)-expressing HEK293 cells	3-7 x 10 <sup>6</sup> cells	293-cov2-s
293-SARS2-S-dfur Cells	SARS-CoV-2 spike (D614G)-expressing HEK293 cells	3-7 x 10 <sup>6</sup> cells	293-cov2-sdf
293-hMyD88 Cells	Human MyD88 expressing HEK293 cells	3-7 x 10 <sup>6</sup> cells	293-hmyd
HEK-Blue™ hACE2 Cells	Human ACE2 expressing HEK293 Cells	3-7 x 10 <sup>6</sup> cells	hkb-hace2
HEK-Blue™ hACE2-TMPRSS2 Cells	Human ACE2 & TMPRSS2 expressing HEK293 Cells	3-7 x 10 <sup>6</sup> cells	hkb-hace2tpsa
A549-hACE2 Cells	A549 lung carcinoma cells expressing the SARS-CoV-2 receptor ACE2	3-7 x 10 <sup>6</sup> cells	a549-hace2
A549-hACE2-TMPRSS2 Cells	A549 lung carcinoma cells expressing the SARS-CoV-2 receptors ACE2 and TMPRSS2	3-7 x 10 <sup>6</sup> cells	a549-hace2tpsa
A549-Dual™ hACE2-TMPRSS2 Cells	Dual reporter cells expressing the SARS-CoV-2 receptors ACE2 & TMPRSS2	3-7 x 10 <sup>6</sup> cells	a549d-cov2r
A549-Dual™ KO-MDA5 hACE2-TMPRSS2 Cells	MDA5 knockout dual reporter cells expressing the SARS-CoV-2 receptors ACE2 & TMPRSS2	3-7 x 10 <sup>6</sup> cells	a549d-komda5-cov2r
A549-Dual™ KO-RIG-I hACE2-TMPRSS2 Cells	RIG-I knockout dual reporter cells expressing the SARS-CoV-2 receptors ACE2 & TMPRSS2	3-7 x 10 <sup>6</sup> cells	a549d-korigi-cov2r
HEK-Blue™ ISG Cells	Interferon regulatory factor (IRF)-inducible SEAP reporter HEK293 cells	3-7 x 10 <sup>6</sup> cells	hkb-isg-1
HEK-Blue™ IL-6 Cells - respond to human IL-6	IL-6 Reporter HEK 293 Cells	3-7 x 10 <sup>6</sup> cells	hkb-hil6
HEK-Blue™ IL-1β Cells - respond to human & murine IL-1β	IL-1β Reporter HEK 293 Cells	3-7 x 10 <sup>6</sup> cells	hkb-il1bv2
HEK-Blue™ TNFα Cells - respond to human TNF-α	TNF-α Reporter HEK 293 Cells	3-7 x 10 <sup>6</sup> cells	hkb-tnfmyd
<b>INHIBITORS</b>			
Remdesivir	Viral RdRp inhibitor	1 mg	inh-rem
EK1C4	SARS-CoV-2-Cell fusion inhibitor		Coming soon

Read more about SARS-CoV-2 and our products in our scientific insights

THE RACE AGAINST  
SARS-CoV-2 VARIANTS

SCAN US

MOUSE ANTI-MOUSE MABs &  
COVID-19-RELATED CELL LINES



# COVID-19 Related Antibodies

## Recombinant mAbs for SARS-CoV-2 Research

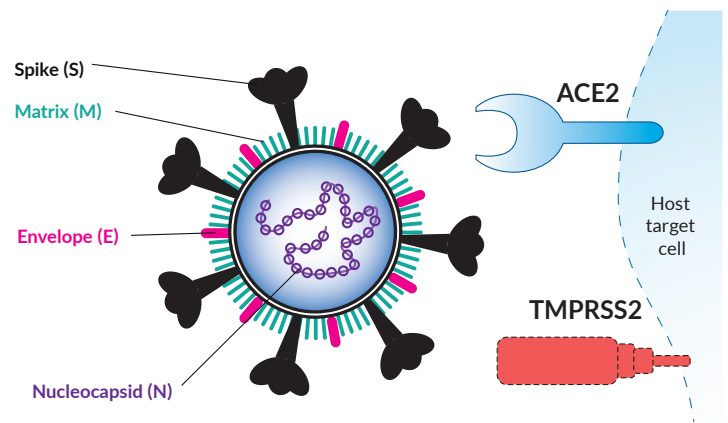
Monoclonal antibodies (mAbs) against SARS-CoV-2 antigens are under therapeutic investigation for fighting COVID-19. InvivoGen offers isotype families of recombinant mAbs related to COVID-19 research.

PRODUCT	DESCRIPTION	QUANTITY	CAT. CODE
Anti-SARS-CoV Spike mAbs (CR3022-derived)	CR3022-derived Anti-SARS-CoV2 RBD mAbs, human & mouse isotypes	100 µg	srbd-mab'X'
Anti-SARS-CoV-2 Spike mAb (H4-derived)	H4-derived Anti-SARS-CoV2 RBD mAbs, human & mouse isotypes	100 µg	cov2rbdc1-mab'X'
Anti-SARS-CoV-2 Spike mAb (B38-derived)	B38-derived Anti-SARS-CoV2 RBD mAbs, human & mouse isotypes	100 µg	cov2rbdc2-mab'X'
Anti-SARS-CoV-2 Spike mAbs (REGN-10933 & REGN-10987-derived)	REGN-CoV-derived Anti-SARS-CoV-2 RBD mAbs, human & mouse isotypes	100 µg	srbdc3-mab'X'
Anti-SARS-CoV-2 Spike mAbs (LY-CoV555 & LY-CoV016-derived)	LY-CoV2-derived Anti-SARS-CoV-2 RBD mAbs, human & mouse isotypes	100 µg	srbdc5-mab'X'
Anti-SARS-CoV Nucleocapsid mAb (CR3018-derived)	CR3018-derived Anti SARS-CoV-2 Nucleocapsid hlgG1 antibody	100 µg	covn-mab1
Anti-hACE2 mouse IgG2b	Anti-human ACE2 mouse monoclonal antibody	100 µg	mabg-hace2

# COVID-19 Related Genes

## Plasmids for SARS-CoV-2 Research

To assist with the worldwide research effort in understanding and fighting the Coronavirus Disease 2019 (COVID-19), InvivoGen has launched a collection of SARS-CoV-2-related plasmids, encompassing the coding sequences of the virus proteins and human receptors involved in the infection.

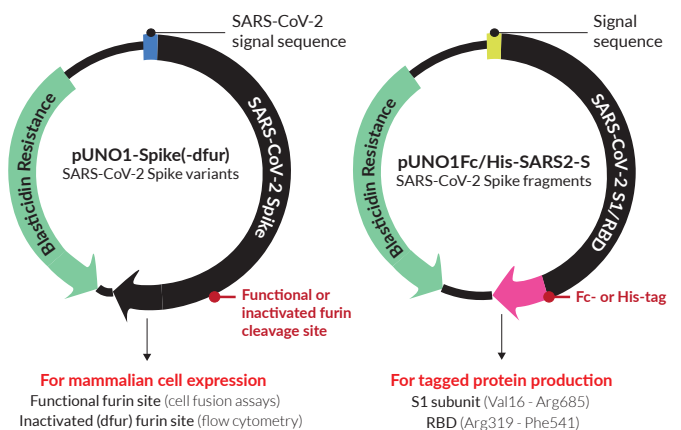


PRODUCT	DESCRIPTION	QUANTITY	CAT. CODE
Human ACE2 Expression Vector	Human ACE2 gene	20 µg	puno1-hace2
Human TMPRSS2 Expression Vectors	Human TMPRSS2 genes for isoforms 1 and 2	20 µg	puno1-htps2(a/b)
Human ACE2 & TMPRSS2a Expression Vector	Human ACE2 and TMPRSS2a genes	20 µg	pduo2-hace2tpsa
Tagged Nucleocapsid Production Vectors	SARS-CoV-2 nucleocapsid sequence with His- or Fc-tag in C-term	20 µg	p1(his/fc)-cov2-n
Spike (S) Expression Vectors	SARS-CoV-2 full Spike - functional or inactivated furin (dfur) (All Variants available, see below)	20 µg	p1-spike-v'X'
Spike (S1) Expression Vectors	Tagged Spike S1 Production Vectors - functional or inactivated furin (dfur)	20 µg	p1(his/fc)-cov2-s1
Spike (RBD) Expression Vectors	Tagged Spike RBD Production Vectors	20 µg	p1(his/fc)-cov2-rbd
Envelope (E) Expression Vector	SARS-CoV-2 E gene	20 µg	puno1-cov2-e
Matrix/Membrane (M) Expression Vector	SARS-CoV-2 M gene	20 µg	puno1-cov2-m
Nucleocapsid (N) Expression Vectors	SARS-CoV-2 N gene	20 µg	puno1-cov2-n

Original | Wuhan (Clade 19)  
G614 variant (Clade 20)  
Alpha | B.1.1.7 variant | United Kingdom (Clade 20I)  
Beta | B.1.351 variant | South Africa (Clade 20H)  
Epsilon | B.1.429 variant | California (Clade 21C)  
Gamma | P.1 variant | Brazil (Clade 20J)  
Iota | B.1.526 variant | New York (Clade 21F)  
Kappa | B.1.617.1 variant | India (Clade 21B)  
Delta | B.1.617.2 variant | India (Clade 21B)  
Lambda | C.37 variant | Perou (Clade GR/452Q.V1)  
Mu | B.1.621 variant | Colombia (Clade 21H)

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### VARIOUS SARS-COV-2 VARIANTS



CAT. CODE: 'X' refers to the in-house number of the antibody isotype (hlgG1, hlgG1Nq, hlgM, hlgA1, mlgG2a, mlgG2b or mlgG1e3) or Spike variant.

# COVID-19 Related Recombinant Proteins

SARS-CoV-2 (2019-nCoV) proteins, as well as the virus cellular receptor ACE2 (angiotensin-converting enzyme 2) protein, are of great interest in investigating therapeutic strategies to treat and prevent Coronavirus Disease-2019 (COVID-19).

The potential applications for these proteins include:

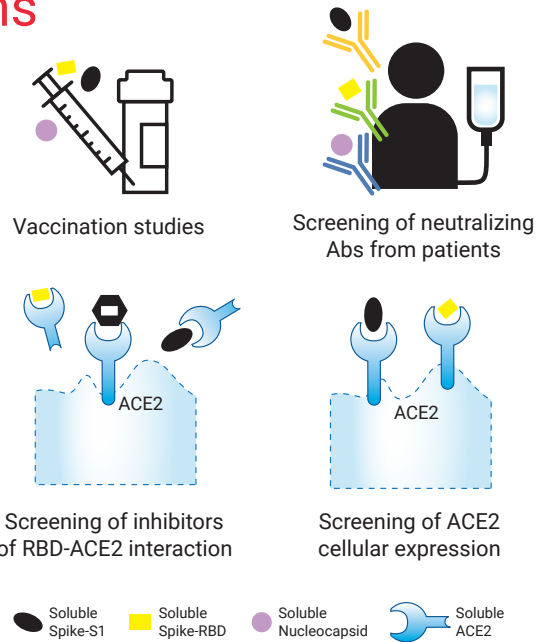
- Vaccination studies
- Screening of neutralizing antibodies
- Blockade of the interaction of the Spike receptor-binding domain (RBD) to ACE2.

As a guarantee of quality, our proteins are validated by ELISA.

Depending on your applications, you may choose from:

## • His- or Fc-tagged proteins

His- and -Fc-tagged proteins have been produced in HEK293 cells and CHO cells, respectively, and have been purified by affinity chromatography.

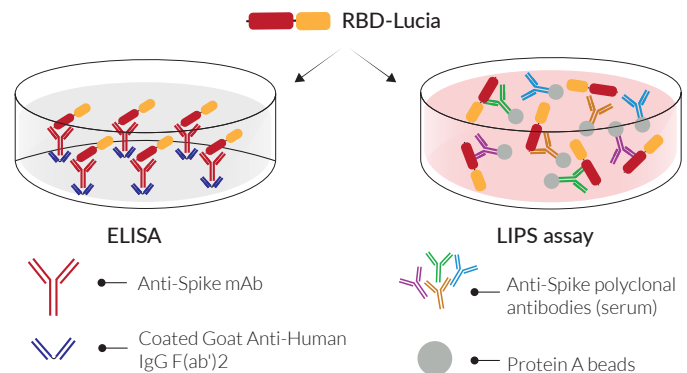


Potential applications of soluble spike and human ACE2 proteins

PRODUCT	DESCRIPTION	QUANTITY	CAT. CODE
SARS-CoV-2 Spike S1 Proteins	SARS-CoV-2 Spike S1 subunit with C-term His- or Fc-tag	50 µg	his/fc-sars2-s1
SARS-CoV-2 Spike RBD Proteins	SARS-CoV-2 Spike RBD with C-term His or Fc tag	50 µg	his/fc-sars2-rbd
SARS-CoV-2 Nucleocapsid Proteins	SARS-CoV-2 Nucleocapsid with C-term His- or Fc-tag	50 µg	his/fc-sars2-n
Human ACE2 Protein	SARS-CoV-2 cellular receptor: ACE2 with C-term Fc tag	50 µg	fc-hace2

## • Luciferase-tagged proteins

InvivoGen has developed a collection of luciferase-tagged SARS-CoV-2 proteins (RBD region of Spike variants). They can be used to assess the binding affinity of anti-SARS-CoV-2 antibodies using either ELISA or LIPS (Luciferase immunoprecipitation system) assays.



PRODUCT	DESCRIPTION	QUANTITY	CAT. CODE
Original RBD-Lucia	Recombinant RBD fusion protein (Original strain - Wuhan origin) for ELISA & LIPS	50 µg	rbd-lucia
Alpha (B.1.1.7) RBD-Lucia	Recombinant RBD fusion protein (B.1.1.7 variant - UK origin) for ELISA & LIPS	50 µg	rbd-lucia-v2
Beta (B.1.351) RBD-Lucia	Recombinant RBD fusion protein (B.1.351 variant - South African origin) for ELISA & LIPS	50 µg	rbd-lucia-v3
Epsilon (B.1.429) RBD-Lucia	Recombinant RBD fusion protein (B.1.429 variant - Californian origin) for ELISA & LIPS	50 µg	rbd-lucia-v4
Gamma (P.1) RBD-Lucia	Recombinant RBD fusion protein (P.1 variant - Brazilian origin) for ELISA & LIPS	50 µg	rbd-lucia-v5
Iota (B.1.526) RBD-Lucia	Recombinant RBD fusion protein (B.1.526 variant - New York origin) for ELISA & LIPS	50 µg	rbd-lucia-v6
Kappa (B.1.617.1) RBD-Lucia	Recombinant RBD fusion protein (B.1.617.1 variant - Indian origin) for ELISA & LIPS	50 µg	rbd-lucia-v7
Delta (B.1.617.2) RBD-Lucia	Recombinant RBD fusion protein (B.1.617.2 variant - Indian origin) for ELISA & LIPS	50 µg	rbd-lucia-v8

FOR MORE INFORMATION, PLEASE VISIT: [WWW.INVIVOGEN.COM/COVID-19](http://WWW.INVIVOGEN.COM/COVID-19)

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