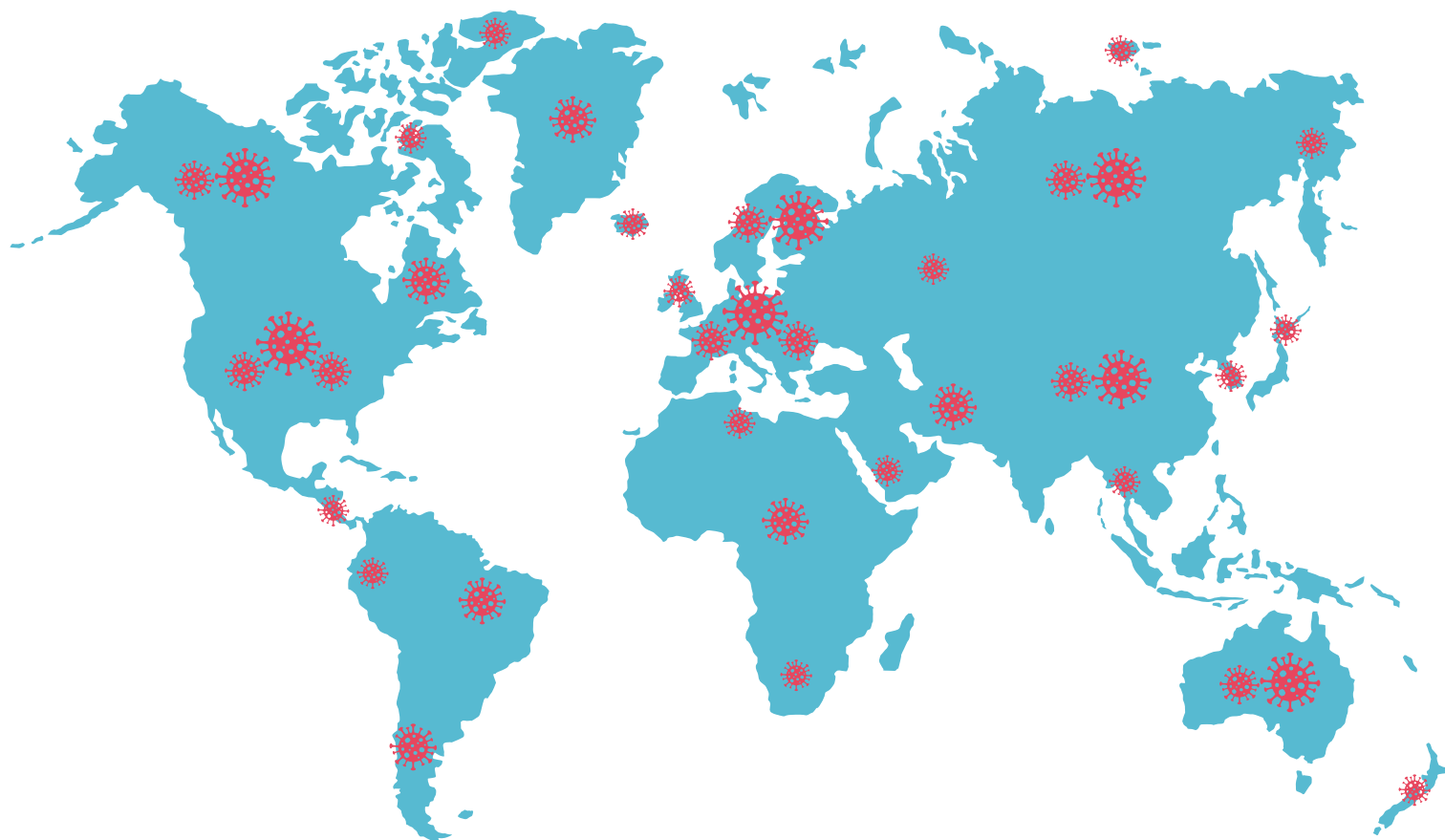


# COVID-19 Research & Diagnostic Solutions

A comprehensive portfolio of off-the-shelf products to speed up SARS-CoV-2 diagnosis, drug discovery and vaccine development.

- ★ cPass™ SARS-CoV-2 Neutralization Antibody Test
- ★ Proteins
- ★ Antibodies
- ★ Stable Cell Lines
- ★ Peptide Pools





COVID-19 continues to spread around the world, with nearly 200 countries impacted by the deadly pandemic. As new variants of the SARS-CoV-2 virus rapidly emerge, physicians, scientists, and public health officials are urgently trying to understand their mechanisms of action. What is the transmissibility of each strain? Are the currently authorized vaccines effective for the new viral strains?

## GenScript,

stands by our heroes in combatting COVID-19. From diagnostics to drug discovery and vaccine development, GenScript has developed a comprehensive range of products that scientists can use to accelerate their COVID-19/SARS-CoV-2 research and development.

# DIRECTORY

**cPass™ SARS-CoV-2**  
Neutralization Antibody Test

P1

**Proteins**

P2

**Antibodies**

P4

**Stable Cell Lines**

P6

**Peptide Pools**

P7

# cPass™ SARS-CoV-2 Neutralization Antibody Test

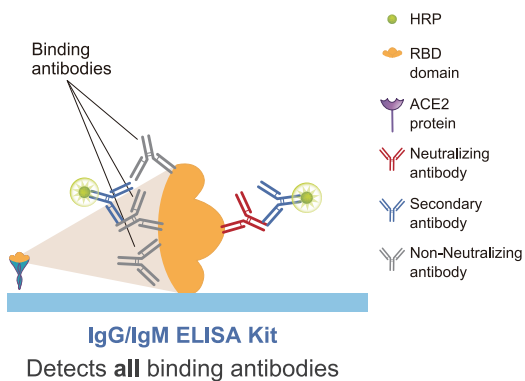


## Features and Applications

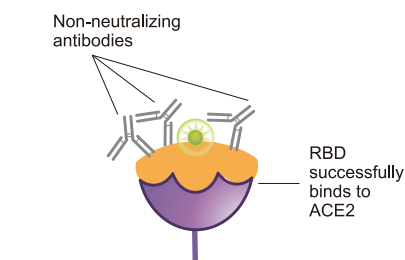
- ★ Species-independent.
- ★ Isotype-independent.
- ★ FDA EUA, CE, and HSA-authorized.
- ★ Detection of SARS-CoV-2 neutralizing (virus blocking) antibodies in the serum or plasma from recovering COVID-19 and vaccinated patients.
- ★ Detection of SARS-CoV-2 neutralizing antibodies in 1 hour.

## Product Principle

### Currently Available Antibody Tests

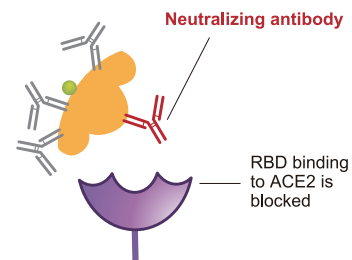


### cPass™ Negative Test



**cPass™ SARS CoV-2 Neutralization Antibody Detection Kit**  
Specifically detects **neutralizing** antibodies

### cPass™ Positive Test



## Related Products

Cat No.	Description	Application
A02087	Neutralizing Antibody Standard	Calibration of the semi-quantitative assay of cPass™ SARS-CoV-2 Neutralization Antibody Test
L00845	SARS-CoV-2 Spike S1-RBD IgG & IgM ELISA Detection Kit	Detection of both IgG and IgM; can be used for IgG and IgM quantitation with a calibration curve
L00846	SARS-CoV-2 NP&RBD Total Antibody ELISA Kit	Detection of total antibody content (IgM/IgG/IgA), evaluation of the immune efficacy of mRNA and inactivated COVID-19 vaccines

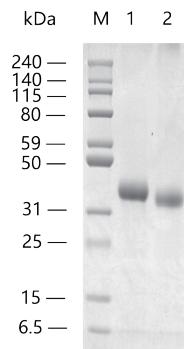


# Proteins

## Features and Applications

- ★ India, Brazil, United Kingdom, South Africa, and more variants available.
- ★ Purity and bioactivity validated.
- ★ High lot-to-lot consistency.
- ★ Designed to be used for development of SARS-CoV-2 detection kits, vaccines and therapeutic drugs.

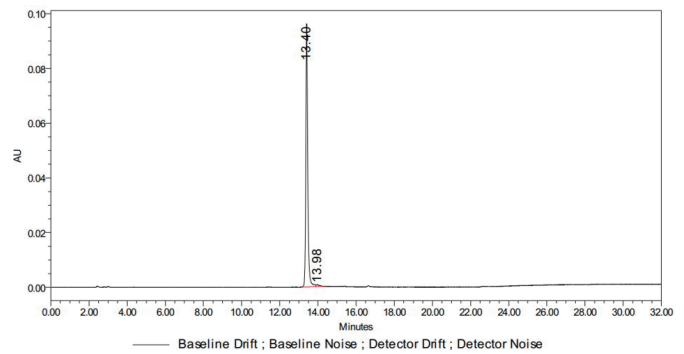
## High Purity



Lane 1: 2µg of SARS-CoV-2 Spike protein (RBD, His & Avi Tag, CHO-expressed) (Z03512), reducing (R).

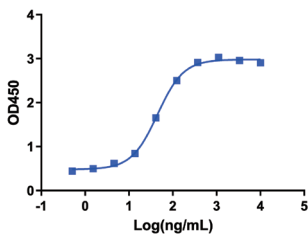
Lane 2: 2µg of SARS-CoV-2 Spike protein (RBD, His & Avi Tag, CHO-expressed) (Z03512), non-reducing (NR).

The purity was determined to be > 95% as analyzed by SDS-PAGE



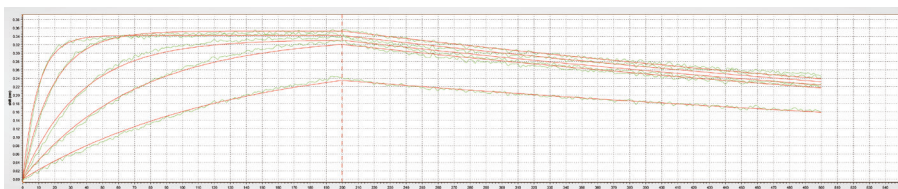
Purity of SARS-CoV-2 Spike protein (RBD, His & Avi tag) (Z03483) determined by HPLC-RP was higher than 95%

## Biological Activity



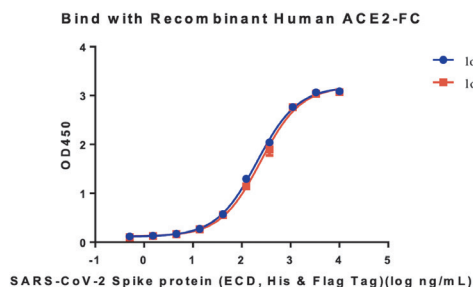
Immobilized ACE-2 Fc Chimera, Human (Cat. No. Z03484) at 2 µg/mL can bind with SARS-CoV-2 Spike protein (RBD, E484K, K417N, N501Y, His & Avi Tag) (Cat. No. Z03537) with a serial dilution.

THE™ His Tag Antibody [HRP], mAb, Mouse (Cat.No.A00612) was used as the secondary antibody( 0.2 µg/mL).



Loaded ACE-2 Fc Chimera, Human (CHO-expressed) Protein (Cat. No. Z03516) on Protein A Biosensor, can bind SARS-CoV-2 Spike protein (RBD, N501Y, His & Avi Tag) (Cat. No. Z03533) with an affinity constant of 2.11 nM as determined in BLI assay.

## High lot-to-lot consistency



Immobilized ACE-2 Fc Chimera, Human (Cat. No. **Z03484**) at 2 µg/mL can bind SARS-CoV-2 Spike protein (ECD, His & Flag Tag) (Cat. No. **Z03481**) with a serial dilution. THE™ His Tag Antibody [HRP], mAb, Mouse (Cat.No.**A00612**) was used as a secondary antibody (0.1 µg/mL).

## Product Overview

### SARS-CoV-2 Protein Mutations

Lineage	B.1.1.7 (United Kingdom)	B.1.351 (South Africa)	P.1 (Brazil)	B.1.429/7 (US, California)	B.1.1.207 (Nigeria)	B.1.617 (India)
Mutation Site	N501Y, del(69-70), D614G, P681H, N439K, del Y144, A222V, A570D	N501Y, E484K, K417N	E484K, K417T, N501Y	W152C, L452R, D614G	Q52R, del(69-70), E484K, Q677H, D614G	E484Q, L452R
S1 Protein	√	√	√	√	√	√
S-RBD	√	√	√	√	/	√
S-RBD HRP*	√	√	√	Coming Soon!	/	Coming Soon!

### SARS-CoV-2 Proteins Wild type

N protein	S-ECD	S-RBD / S-RBD HRP*
S1 protein	N & S-RBD Fusion	ACE-2

\*S-RBD HRP (wild type) is one of the components in the SARS-CoV-2 Surrogate Virus Neutralization Test (sVNT) Kit (Cat.No. **L00847-A**). S-RBD HRP (variants) is recommended as a replacement of it in the kit. Users can modify and optimize the variant sVNT assay.

# Antibodies

## Features and Applications

- ★ Validated for ELISA, WB, FACS, and SARS-CoV-2 virus neutralization assay.
- ★ Control antibodies and various antibody pairs available for ELISA-based detection.
- ★ Neutralizing Antibody Standard to calibrate quantitative assay of SARS-CoV-2 neutralizing antibodies in samples.

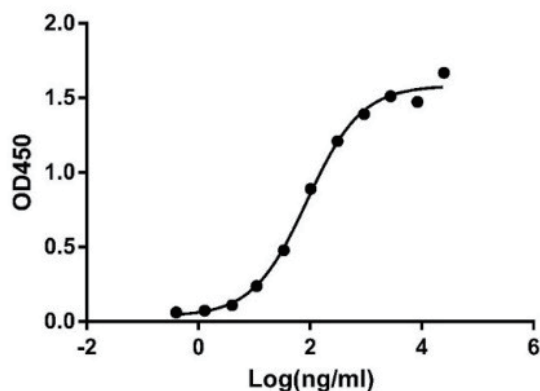
## Recommended Products

### Control antibodies

Positive control antibodies available for detection of different isotypes; validated for use in ELISA assays.

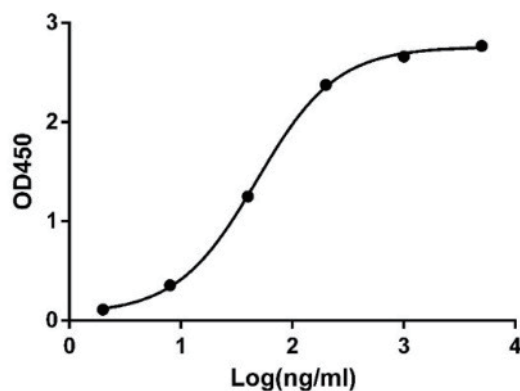
Type	Spike S1 Control Ab	Nucleocapsid Control Ab
Chimeric mAb, IgG	A02038	A02039
Chimeric mAb, IgM	A02046	A02059
Chimeric mAb, IgA	A02071	A02090

**A02038 (HC2001) binds with SARS-CoV-2 Spike Protein S1 RBD**



SARS-CoV-2 Spike S1 Antibody (HC2001), Human Chimeric (GenScript, **A02038**) was used to bind with recombinant SARS-CoV-2 Spike Protein S1 RBD(**Z03483**) on an ELISA plate. The coating antigen was recombinant SARS-CoV-2 Spike Protein S1 RBD, 0.5 µg/ml. The dilution of SARS-CoV-2 Spike S1 Antibody (HC2001), Human Chimeric (GenScript, **A02038**) started from 25 µg/ml.  
EC50= 0.088 µg/ml.

**A02039 (HC2003) binds with SARS-CoV-2 Nucleocapsid Protein**

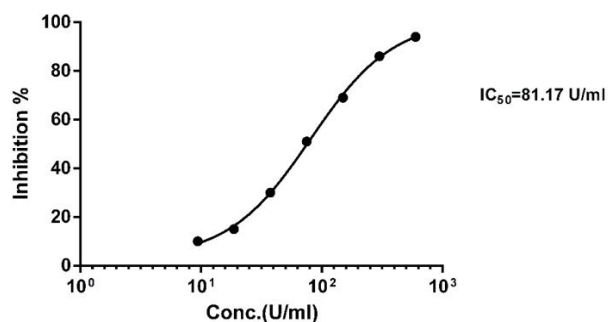


SARS-CoV-2 Nucleocapsid Antibody (HC2003), Human Chimeric (GenScript, **A02039**) was used to bind with recombinant Nucleocapsid Protein (**Z03480**). The coating antigen was recombinant Nucleocapsid Protein, 0.5 µg/ml. The dilution of SARS-CoV-2 Nucleocapsid Antibody (HC2003), Human Chimeric (GenScript, **A02039**) started from 25 µg/ml.  
EC50= 0.048 µg/ml.

## Neutralizing antibody standard

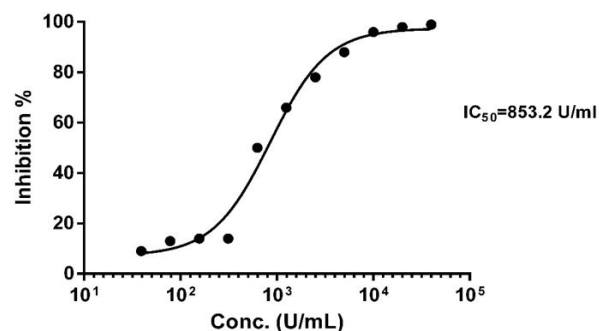
Cat No.	Description	Recommend Applications
A02087	Neutralizing Antibody Standard	Calibrate quantitative assay of SARS-CoV-2 neutralizing antibody (sVNT, PRNT, pVNT)

NAb standard (GenScript, A02087) dose response curve on sVNT



Surrogate Virus Neutralization Test of SARS-CoV-2 RBD-hACE2 interaction with the SARS-CoV-2 Neutralizing Antibody Standard (GenScript, **A02087**). The SARS-CoV-2 Neutralizing Antibody Standard (GenScript, **A02087**) dilutions started from 600 U/ml.  
IC<sub>50</sub>=81.17 U/ml

NAb standard (GenScript, A02087) dose response curve on pVNT

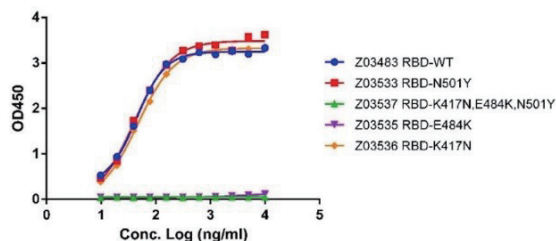


Pseudovirus Neutralization Test of SARS-CoV-2 pseudovirus-hACE2 interaction with the SARS-CoV-2 Neutralizing Antibody Standard (GenScript, **A02087**). Control: HEK293/ACE2 cells infected with SARS-CoV-2 pseudovirus. The SARS-CoV-2 Neutralizing Antibody Standard (GenScript, **A02087**) dilutions started from 40,000 U/ml.  
IC<sub>50</sub> = 853.2 U/ml

## Site specific Neutralizing antibodies

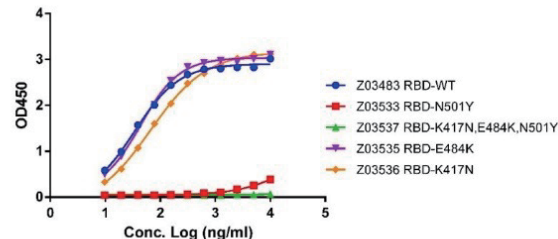
Cat No.	Specific Site	Application Note
A02109	E484	Not recognize E484 mutant
A02110	N501	Not recognize N501 mutant

SARS-CoV-2 Spike (E484) NAb (COV2109) binds with wild-type SARS-CoV-2 S1-RBD and RBD mutants



ELISA binding of the SARS-CoV-2 Spike (E484) Neutralizing Antibody (COV2109) (GenScript, **A02109**) with wild-type SARS-CoV-2 S1-RBD and SARS-CoV-2 S1-RBD mutants. Coating antigen: wild-type SARS-CoV-2 S1-RBD and SARS-CoV-2 S1-RBD mutants, 2 µg/ml. The dilution of SARS-CoV-2 Spike (E484) Neutralizing Antibody (COV2109) (GenScript, **A02109**) started from 10 µg/ml.

SARS-CoV-2 Spike (N501) NAb (COV2110) binds with wild-type SARS-CoV-2 S1-RBD and RBD mutants



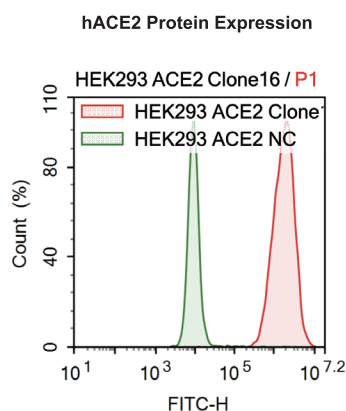
ELISA binding of SARS-CoV-2 Spike (N501) Neutralizing Antibody (COV2110) (GenScript, **A02110**) with wild-type SARS-CoV-2 S1-RBD and SARS-CoV-2 S1-RBD mutants. Coating antigen: wild-type SARS-CoV-2 S1-RBD and SARS-CoV-2 S1-RBD mutants, 2 µg/ml. The dilution of SARS-CoV-2 Spike (N501) Neutralizing Antibody (COV2110) (GenScript, **A02110**) started from 10 µg/ml.

# Stable Cell Lines

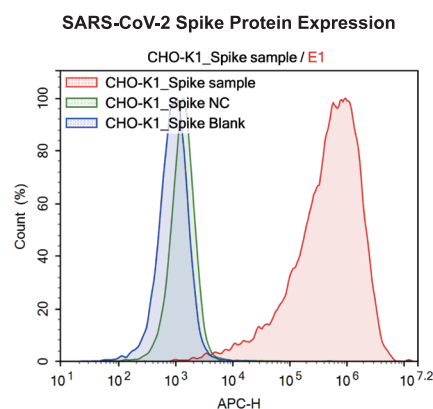
## Features and Applications

- ★ Single clone cell lines with a high S/B ratio.
- ★ Stable expression in passages that guarantees high data reproducibility and reliability.
- ★ Ready-to-use target expressing cells that save 3-6 months of your time.
- ★ The ACE2 stable cell lines are compatible for use in neutralization assays to screen antibodies or other molecules that can block pseudovirus or live virus infection.
- ★ The SARS-CoV-2 Spike protein stable cell lines are compatible for use in in-vitro binding assays or as immunogens.

## Validation Of Target Protein Expression



Flow cytometry-based analysis was used to evaluate ACE2 expression in HEK293/ACE2 stable cell line (Cat. No. **M00770**), stained by S-RBD-His and anti-His-FITC. The results were compared with the negative control.



Flow cytometry-based analysis was used to evaluate Spike protein expression in CHO-K1/Spike cell line (**M00803**) via binding with ACE2 protein. The results were compared with the negative control.

## Product Overview

Target Protein of Expression	Product Name	Catalog Number
ACE2	HEK293/ACE2 Stable Cell Line	M00770
ACE2	CHO-K1/ACE2 Stable Cell Line	M00771
SARS-CoV-2 Spike protein	CHO-K1/Spike Stable Cell Line	M00803
SARS-CoV-2 Spike protein	HEK293T/Spike Stable Cell Line	M00804

# Peptide Pools

## Features and Applications

- ★ The SARS-CoV-2 overlapping peptides mixture includes both structural and non-structural proteins.
- ★ The Spike Glycoprotein peptide pool has >90% purity.
- ★ The peptide pools are ready to be used for stimulation of T cells during ELISPOT and other T cell assays.

## Product Overview

Spike Glycoprotein D614G	Spike Glycoprotein	ORF3a	ORF8
Spike Glycoprotein RBD N501Y	Envelope small membrane protein	ORF6	ORF9B
HCoV-229E Spike Glycoprotein	Membrane protein	ORF7a	ORF10
HCoV-OC43 Spike glycoprotein	Nucleoprotein	ORF7b	Uncharacterized protein 14

**Contact your local sales manager for details  
and information about upcoming products.**



Thank You

# *Thank You* **FRONTLINERS**



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