

# SARS-CoV-2 Pseudotyped Virus Production Pseudotyped Virus Based Neutralization Assay Service

For COVID-19 related

Neutralizing antibodies

Peptides blockers (peptide inhibitors)

Types of Vaccines

Compounds targeting Spike induced cell-fusion



**GENEMEDI**  
Innovation In Gene Therapy & Biologics

## GeneMedi's Products for Vaccines and Drug Discovery against COVID-19

High-throughput screening (HTS) assay development for  
neutralizing antibodies, peptides, small molecule compounds against COVID-19

### Page 1

Description of GeneMedi's SARS-CoV-2 Pseudotyped virus (PSV) Production SARS-CoV-2 Pseudovirus-Based Neutralization Assay Service

### Page 2

SARS-CoV-2 (2019nCoV) Spike-RBD antigen & Recombinant hACE2 protein

### Page 3

SARS-CoV-2 (2019nCoV) Non-structure protein (Nsp) Recombinant Antigens

### Page 4-5

Validated SARS-CoV-2 antibodies: NP antibody and spike antibody.

### Page 6

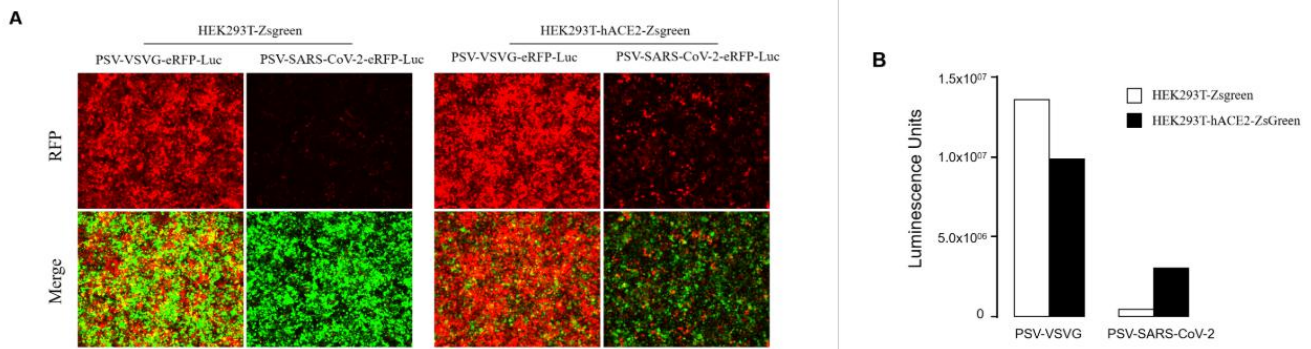
Pre-made gene ORF plasmids for SARS-CoV-2 that can be used for mammalian expression or E.coli expression. Pre-made lentivirus, adenovirus and AAV vectors for the gene ORF plasmids of SARS-CoV-2.

### Pages 7

Pseudotyped virus of SARS-CoV-2 Spike Mutation Variants (D614G, S943P, V367F, G476S, V483A, h39Y, Q239K, A831V, P1263L, D839Y/N/E:D839Y,D839N,D839E)

## 1. GeneMedi's SARS-CoV-2 Pseudotyped virus (PSV) Production SARS-CoV-2 Pseudovirus-Based Neutralization Assay Service

- Screening your candidates in BSL-2 without live SARS-CoV-2



For your candidates functional assay and evaluating:

- 1) Neutralizing antibodies
- 2) Peptides blockers (peptide inhibitors)
- 3) Types of Vaccines (by testing immunized serum from mouse, NHP etc.)
- 4) Compounds targeting Spike induced cell-fusion.

### GeneMedi offers:

- 1) SARS-CoV-2 Pseudotyped virus packaging and production (Cat.GM-2019nCoV-PSV01)
- 2) Effector cells: human ACE2 overexpression stable HEK293T cell lines  
([Cat. GM-SC-293T-hACE2-01](#))
- 3) SARS-CoV-2(2019nCoV) Pseudotyped Virus Based Neutralization Assay Service

[Click for details of SARS-CoV-2\(2019nCoV\) Pseudotyped Virus production and assay service.](#)

## 1. SARS-CoV-2 (2019nCoV) Spike-RBD antigen& Recombinant hACE2 protein

- Competition assay for neutralizing antibodies, peptides inhibitor and vaccines-immunized serums

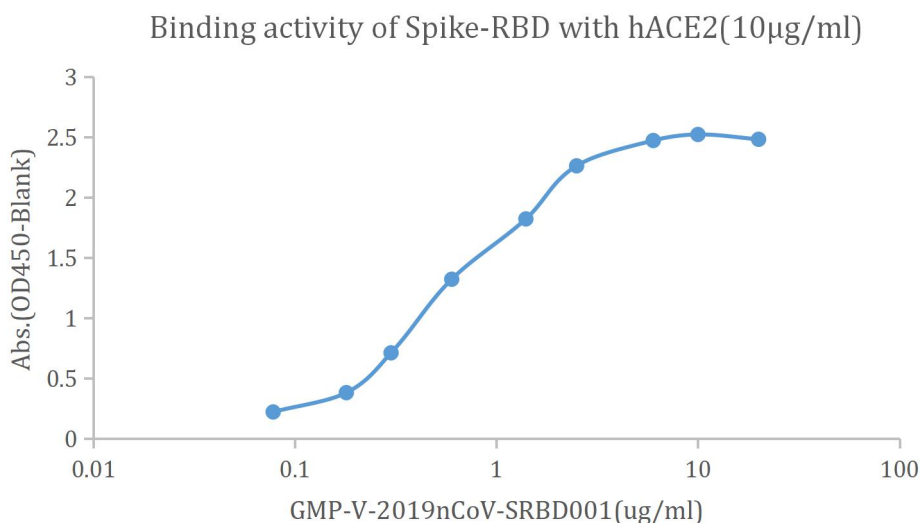







Figure. Immobilized 2019-nCoV S Protein RBD-C-His ([GMP-V-2019nCoV-SRBD001](#)) can bind 10µg/ml of Human ACE-2-Fc ([GMP-H-ACE2002](#)).

### Products List:

Cat No.	Antigen Name of 2019-nCoV(SARS-CoV-2)	Source (Expression Host)	Tag
GMP-V-2019nCoV-SRBD001	<a href="#">Recombinant 2019-nCoV(SARS-CoV-2) Spike Protein (RBD, C-His Tag)</a>	Mamamlian (human cell)	C-His
GMP-V-2019nCoV-SRBD002	<a href="#">Recombinant 2019-nCoV(SARS-CoV-2) Spike Protein (RBD, C-mFc Tag)</a>	Mamamlian (human cell)	C-mFc
GMP-V-2019nCoV-S1001	<a href="#">Recombinant 2019-nCoV(SARS-CoV-2) Spike Protein (S1, His Tag)</a>	Baculovirus-Insect Cells	C-His
GMP-V-2019nCoV-S1S2001	<a href="#">Recombinant 2019-nCoV(SARS-CoV-2) Spike Protein (S1+S2 ECD, His tag)</a>	Baculovirus-Insect Cells	C-His
GMP-H-ACE2001	<a href="#">Recombinant human soluble ACE2 protein (soluble hACE2, extracellular hACE2, C-His)</a>	Mamamlian (human cell)	C-His
GMP-H-ACE2002	<a href="#">Recombinant human soluble ACE2 protein (soluble hACE2, extracellular hACE2, C-Fc)</a>	Mamamlian (human cell)	C-Fc

## 2. SARS-CoV-2 (2019nCoV) Non-structure protein (Nsp) Recombinant Antigens

- Recombinant Proteins Of SARS-CoV-2 (2019nCoV) Drugable Target For High-throughput screening (HTS) assay development of antiviral compounds against COVID-19

Name of Non-structure protein of SARS-CoV-2 (2019-nCoV, novel coronavirus)	Name of Gene in Coronavirus	GeneMedi's Recombinant Antigens For Activity Assay	High-throughput screening (HTS) assay development information and protocols
(PLpro) papain-like proteinase	Nsp3	<a href="#">GMP-V-2019nCoV-PLpro001</a>	Download 
Mpro (main protease,3CLpro)	Nsp5	<a href="#">GMP-V-2019nCoV-Mpro001</a>	Download 
Nsp10-CysHis,GFL protein	Nsp10	<a href="#">GMP-V-2019nCoV-Nsp10-01</a>	Download 
RNA-dependent RNA polymerase(RdRP)	Nsp12	<a href="#">GMP-V-2019nCoV-RdRP001</a>	Download 
2'-O-ribose methyltransferase	Nsp16	<a href="#">GMP-V-2019nCoV-Nsp16-01</a>	Download 
Nsp3-X domain(Macro domain)	Nsp3	<a href="#">GMP-V-2019nCoV-Nsp3X-01</a>	

### 3. Validated SARS-CoV-2 antibodies: NP antibody and spike antibody.

#### GeneMedi's SARS-CoV-2 NP Antibody Pair And Stability Validation In Sandwich ELISA

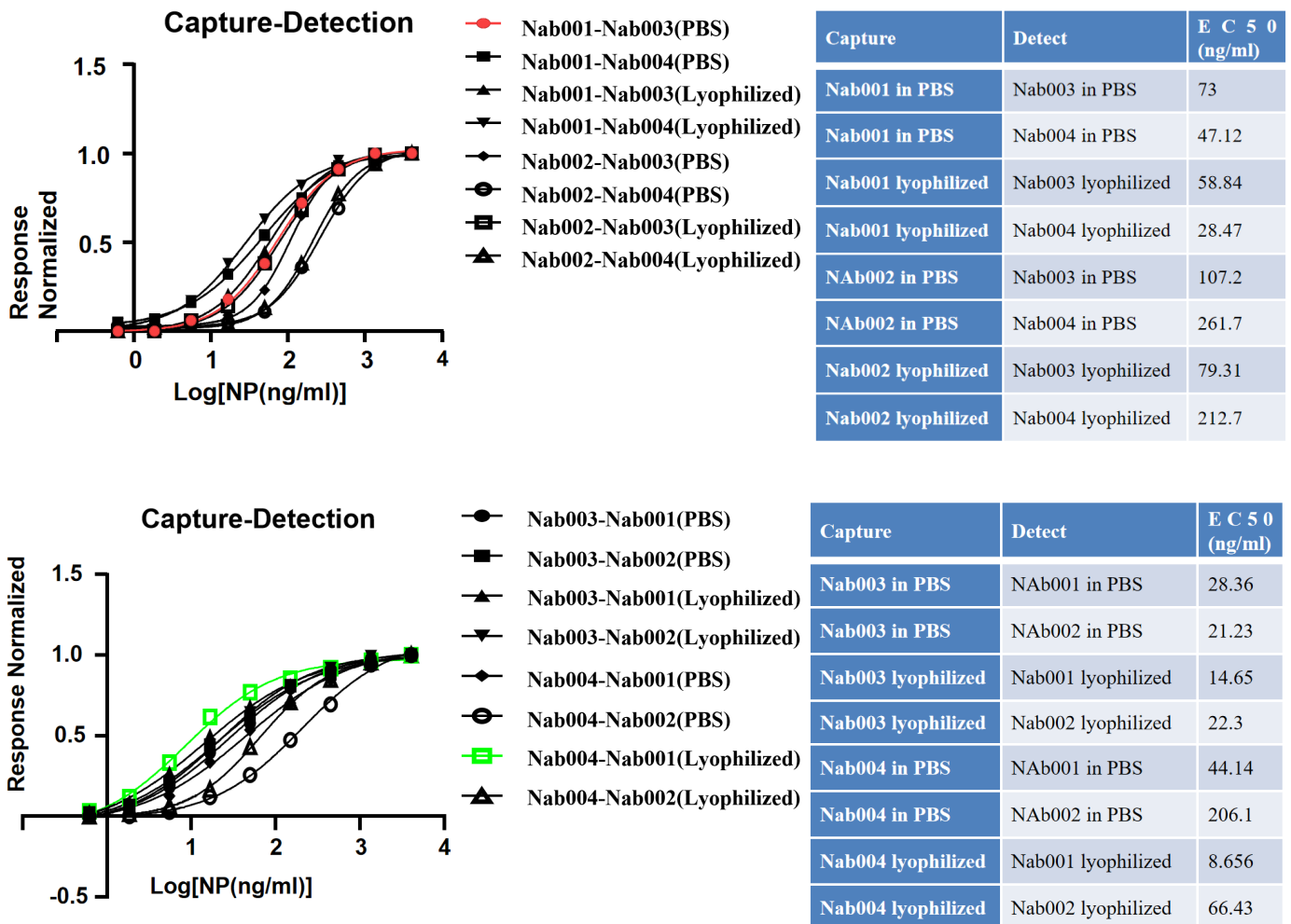


Figure. GeneMedi's SARS-CoV2 NP antibody(Nab) pair validation with NP antigen(GMP-V-2019nCoV-N002) in sandwich ELISA. Nabs were either in PBS solution (stocked in -20 for 7days) or lyophilized (stock at room temperature for 7 days). GeneMedi's lyophilized antibodies presented excellent stability in the room temperature condition.

#### Abbreviation

- [Nab001](#)
- [Nab002](#)
- [Nab003](#)
- [Nab004](#)

PBS

lyophilized

NP

Response Normalized

#### Description

- [GMP-V-2019nCoV-NAb001](#)
- [GMP-V-2019nCoV-NAb002](#)
- [GMP-V-2019nCoV-NAb003](#)
- [GMP-V-2019nCoV-NAb004](#)

liquid in PBS buffer

lyophilized and stock at room temperature for 7 days before reconstitution

[SARS-CoV-2 NP antigen \(GMP-V-2019nCoV-N002\)](#)

Normalized by Max OD450

## Products List:

Cat No.	Antigen Name of 2019-nCoV(SARS-CoV-2)	Isotype	Source	Bioactivity validation
GMP-V-2019nCoV-NAb001	<a href="#">Anti-2019-nCoV NP human monoclonal antibody</a>	Human IgG1	Mammalian (human cell)	N protein binding, <b>ELISA validated</b> as capture antibody and detection antibody. Pair recommendation with GMP-V-2019nCoV-NAb002 , GMP-V-2019nCoV-NAb003 , GMP-V-2019nCoV-NAb004.
GMP-V-2019nCoV-NAb002	<a href="#">Anti-2019-nCoV NP humanscFv-Fc antibody</a>	Scfv	Mammalian (human cell)	N protein binding, <b>ELISA validated</b> as capture antibody and detection antibody. Pair recommendation with GMP-V-2019nCoV-NAb001, GMP-V-2019nCoV-NAb003 , GMP-V-2019nCoV-NAb004.
GMP-V-2019nCoV-NAb003	<a href="#">Anti-2019-nCoV NP mouse monoclonal antibody(mAb)</a>	Mouse IgG	Hybridoma	N protein binding, <b>ELISA validated</b> as capture antibody and detection antibody. Pair recommendation with GMP-V-2019nCoV-NAb001, GMP-V-2019nCoV-NAb002, GMP-V-2019nCoV-NAb004.
GMP-V-2019nCoV-NAb004	<a href="#">Anti-2019-nCoV NP mouse monoclonal antibody(mAb)</a>	Mouse IgG	Hybridoma	N protein binding, <b>ELISA validated</b> as capture antibody and detection antibody. Pair recommendation with GMP-V-2019nCoV-NAb001, GMP-V-2019nCoV-NAb002 , GMP-V-2019nCoV-NAb003.
GMP-V-2019nCoV-S1Ab001	<a href="#">Anti-2019-nCoV Spike (S1 protein) monoclonal antibody</a>	Human IgG1	Mammalian (human cell)	S-RBD protein binding, ELISA validated
GMP-V-2019nCoV-S1Ab002	<a href="#">Anti-2019-nCoV Spike (S1 protein) monoclonal antibody</a>	Human IgG1	Mammalian (human cell)	S-RBD protein binding, ELISA validated, Western Blot validated
GMP-V-2019nCoV-S1Ab003	<a href="#">Anti-2019-nCoV Spike (S1 protein) mouse monoclonal antibody (mAb)</a>	Mouse IgG1	Hybridoma	S-RBD protein binding, ELISA validated
GMP-V-2019nCoV-S1Ab004	<a href="#">Anti-2019-nCoV Spike (S1 protein) mouse monoclonal antibody (mAb)</a>	Mouse IgG1	Hybridoma	S-RBD protein binding, ELISA validated

**4. Pre-made gene ORF plasmids for SARS-CoV-2 that can be used for mammalian expression or E.coli expression. Pre-made lentivirus, adenovirus and AAV vectors for the gene ORF plasmids of SARS-CoV-2.**

2019 nCoV related Gene	Description of 2019 nCoV	Types of Vectors in option for expression
Spike	2019nCoV-Spike protein, Spike S1+S2 protein, Spike-S1 protein, Spik-RBD protein, coden optimized	Lentiviral, Adenoviral, Mammalian, E.coli
N protein	2019nCoV-Nucleocapsid Protein (N protein),coden optimized	Mammalian, E.coli
M protein	2019nCoV-Membrane protein (M protein), coden optimized	Mammalian, E.coli
E protein	pGM-2019nCoV-Envelope Protein (E protein), coden optimized	Mammalian, E.coli
ORF8	2019nCoV-ORF8, coden optimized	Mammalian, E.coli
ORF7	2019nCoV-ORF7a, coden optimized	Mammalian, E.coli
ORF6	2019nCoV-ORF6, coden optimized	Mammalian, E.coli
ORF3a	2019nCoV-ORF3a, coden optimized	Mammalian, E.coli
ORF10	2019nCoV-ORF10, coden optimized	Mammalian, E.coli
ACE2	Human, mouse	Lentiviral, Adenoviral, Mammalian

[Click for details of SARS-CoV-2\(2019nCoV\) genes Pre-made vectors for mammalian and E.coli expression.](#)

**5. Pseudotyped virus of SARS-CoV-2 Spike Mutation Variants (D614G, S943P, V367F, G476S, V483A, h39Y, Q239K, A831V, P1263L, D839Y/N/E:D839Y,D839N,D839E)**

Catalog No.	Pseudotyped virus of SARS-CoV-2 Spike Mutation Variants
GM-2019nCoV-PSV02	Spike D614G mutation SARS-CoV-2(2019nCoV) Pseudotyped virus
GM-2019nCoV-PSV03	Spike S943P mutation SARS-CoV-2(2019nCoV) Pseudotyped virus
GM-2019nCoV-PSV04	Spike V367F mutation SARS-CoV-2(2019nCoV) Pseudotyped virus
GM-2019nCoV-PSV05	Spike G476S mutation SARS-CoV-2(2019nCoV) Pseudotyped virus
GM-2019nCoV-PSV06	Spike V483A mutation SARS-CoV-2(2019nCoV) Pseudotyped virus
GM-2019nCoV-PSV07	Spike H49Y mutation SARS-CoV-2(2019nCoV) Pseudotyped virus
GM-2019nCoV-PSV08	Spike Q239K mutation SARS-CoV-2(2019nCoV) Pseudotyped virus
GM-2019nCoV-PSV09	Spike A831V mutation SARS-CoV-2(2019nCoV) Pseudotyped virus
GM-2019nCoV-PSV10	Spike P1263L mutation SARS-CoV-2(2019nCoV) Pseudotyped virus
GM-2019nCoV-PSV11	Spike D839Y/N/E-D839Y mutation SARS-CoV-2(2019nCoV) Pseudotyped virus
GM-2019nCoV-PSV12	Spike D839Y/N/E-D839N mutation SARS-CoV-2(2019nCoV) Pseudotyped virus
GM-2019nCoV-PSV13	Spike D839Y/N/E-D839E mutation SARS-CoV-2(2019nCoV) Pseudotyped virus