



ANTIBODIES FOR CORONAVIRUSES

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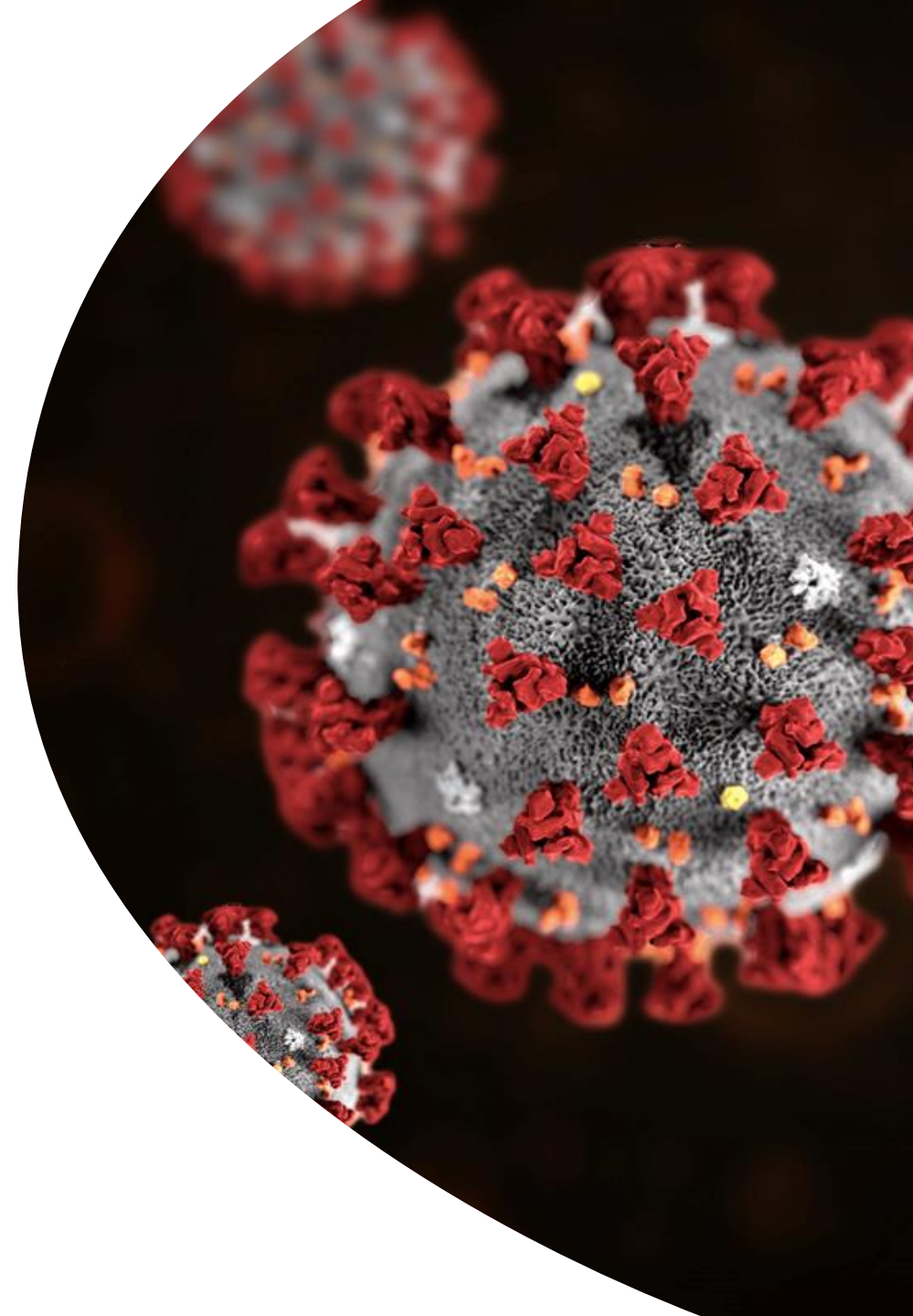
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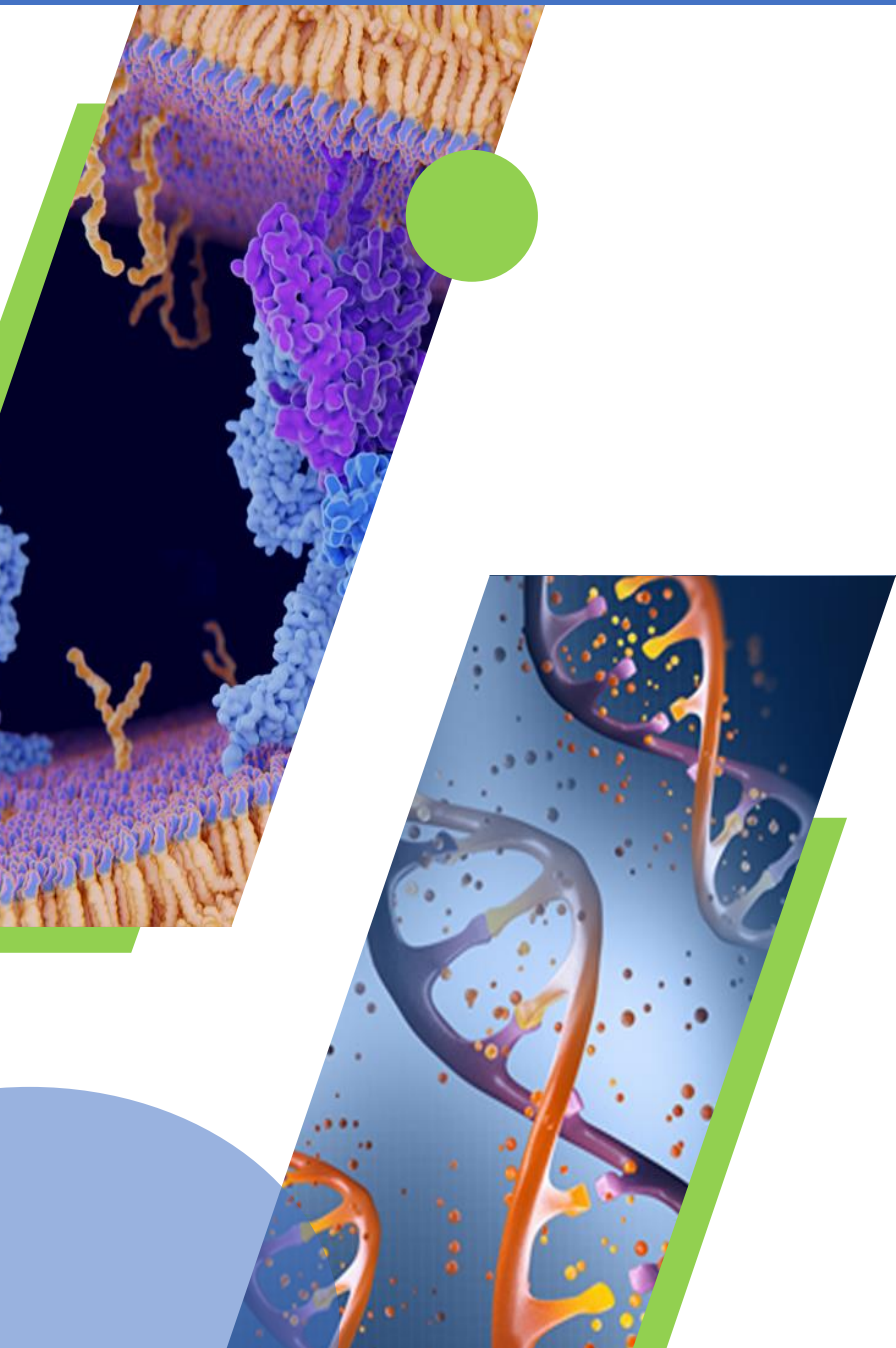
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Coronavirus (CoV)

Coronaviruses belong to the subfamily of *Orthocoronavirinae* in the family *Coronaviridae*, in the order *Nidovirales*. They are enveloped viruses with a positive-sense single-stranded RNA genome and a nucleocapsid of helical symmetry.

To date, six CoVs have been identified to infect humans: HCoV-229E, HCoV-OC43, HCoV-NL63, HCoV-HKU1, severe acute respiratory syndrome coronavirus (SARS-CoV), and the Middle East respiratory syndrome coronavirus (MERS-CoV).

The first case of novel coronavirus (SARS-CoV-2)–infected pneumonia (NCIP) occurred in Wuhan, Hubei Province, China, in December 2019. NCIP is the seventh coronavirus.

Overview of SARS

SARS is a viral respiratory disease of zoonotic origin caused by SARS-CoV that firstly infected humans in the Guangdong province of southern China in 2002. Between November 2002 and July 2003, an outbreak of SARS in Guangzhou, southern China caused 8,098 cases, resulting in 774 deaths reported in 17 countries (9.6% fatality rate). SARS-CoV was transmitted from civet cats to humans.

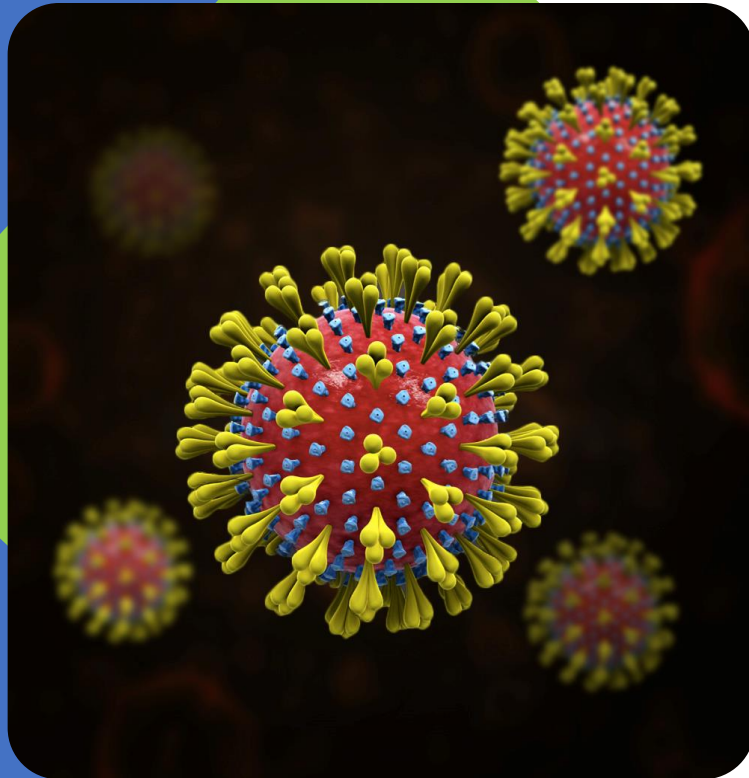
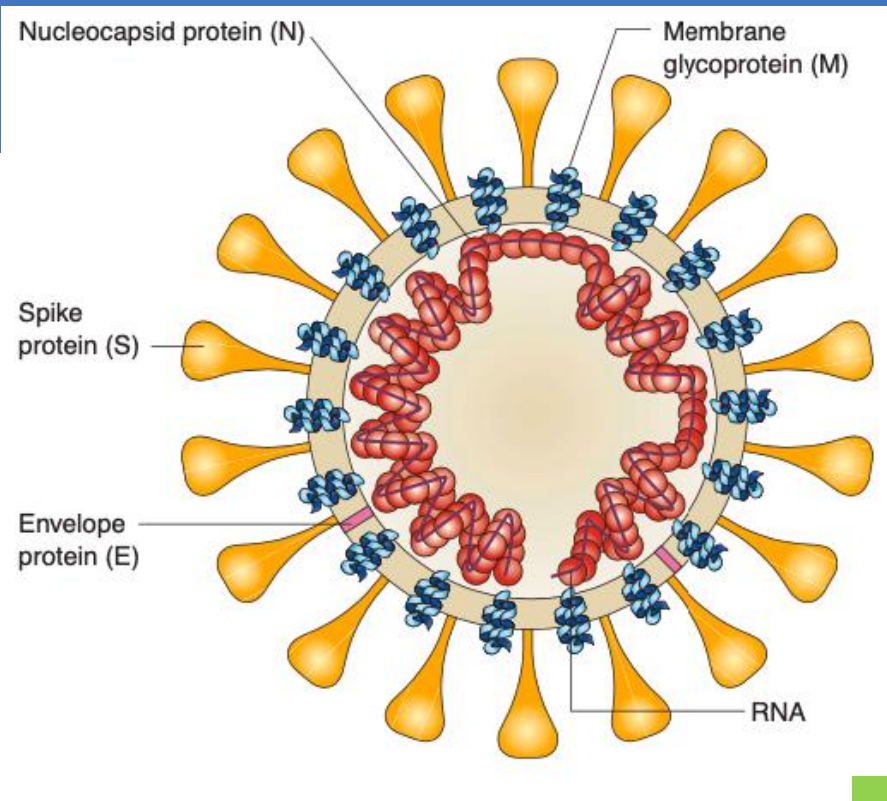


Fig.1 The global spread of SARS. (Peiris, 2004)

Structure of SARS



- The viral surface proteins (spike, envelope and membrane) are embedded in a lipid bilayer envelope derived from the host cell.
- The single-stranded positive-sense viral RNA is associated with the nucleocapsid protein.

Fig.2 Schematic diagram of the SARS structure. (Peiris, 2004)

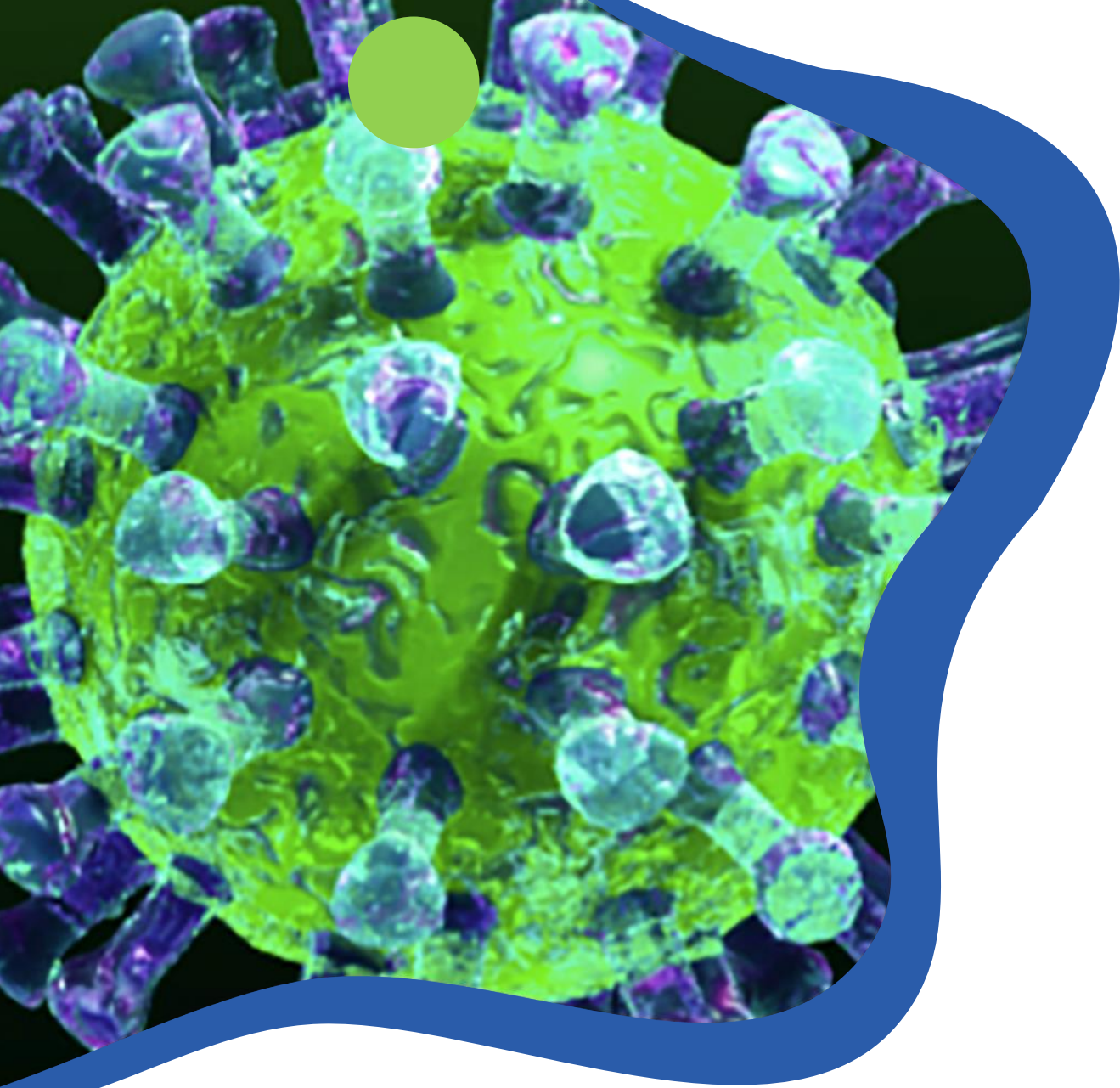


Fig.3 MERS virus 3D image.

Overview of MERS

A novel coronavirus was reported by Saudi Arabia in 2012. This Middle East respiratory syndrome coronavirus (MERS-CoV) results in an acute human respiratory syndrome. The virus, of 2C beta-CoV lineage, expresses the dipeptidyl peptidase 4 (DPP4) receptor and is densely endemic in dromedary camels of East Africa and the Arabian Peninsula.

Overview of SARS-CoV-2

The novel coronavirus (SARS-CoV-2) occurred in Wuhan, Hubei Province, China in December of 2019 has resulted in thousands of people of lethal disease in China, and more and more patients are identified in the world. This novel coronavirus was reported to share the same receptor, angiotensin-converting enzyme 2 (ACE2), similar with SARS-CoV.

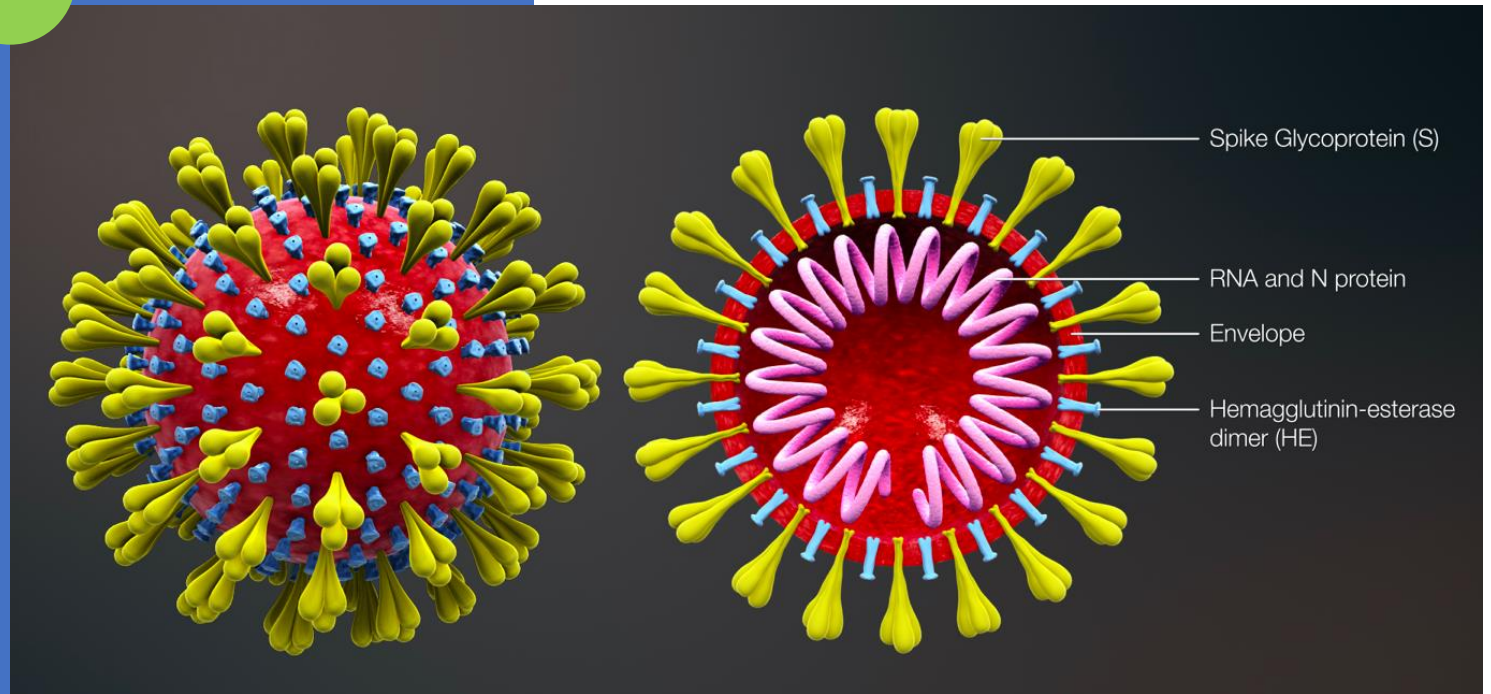


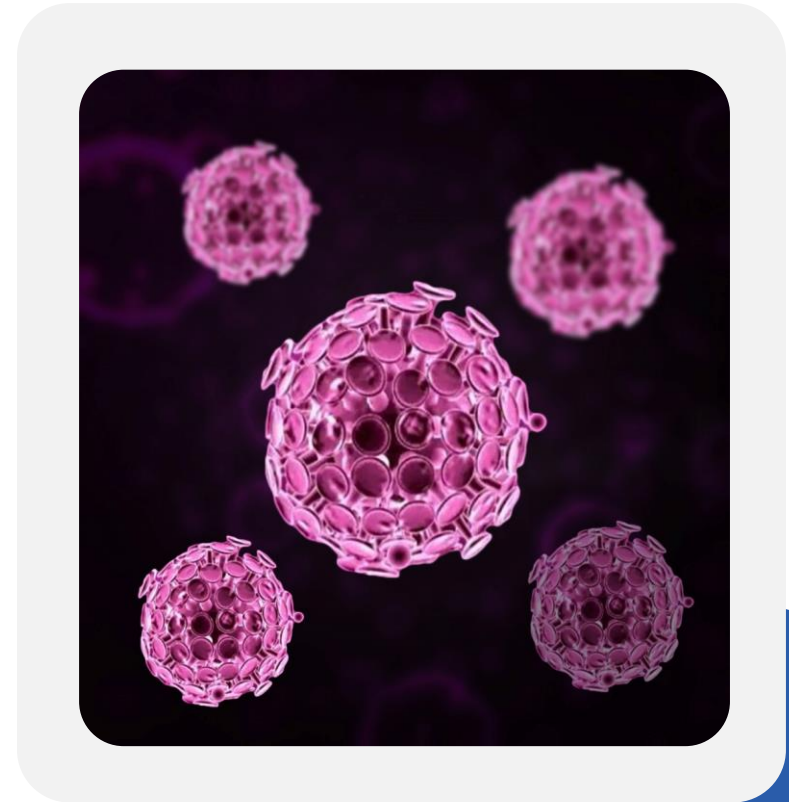
Fig.4 Image of SARS-CoV-2.

Recent Researches of SARS-CoV-2

The first case of SARS-CoV-2 occurred in Wuhan, China, in December 2019. To date, however, there is no specific antiviral treatment or vaccine.

Based on the previous studies, coronaviruses are enveloped viruses, both the receptor binding and the membrane fusion process of which are mediated *via* the spike (S) membrane glycoprotein. Therefore, the cross-reactivity of anti-SARS-CoV antibodies with SARS-CoV-2 spike protein could have important implications for the rapid discovery and development of vaccines and therapeutic antibodies against SARS-CoV-2.

The SARS-CoV-specific human monoclonal antibody, CR3022, could bind potently with SARS-CoV-2 RBD (KD of 6.3 nM). The epitope of CR3022 does not overlap with the ACE2 binding site within SARS-CoV-2 RBD. Therefore, CR3022 has the potential to be developed as candidate therapeutics, alone or in combination with other neutralizing antibodies, for the prevention and treatment of SARS-CoV-2 infections.

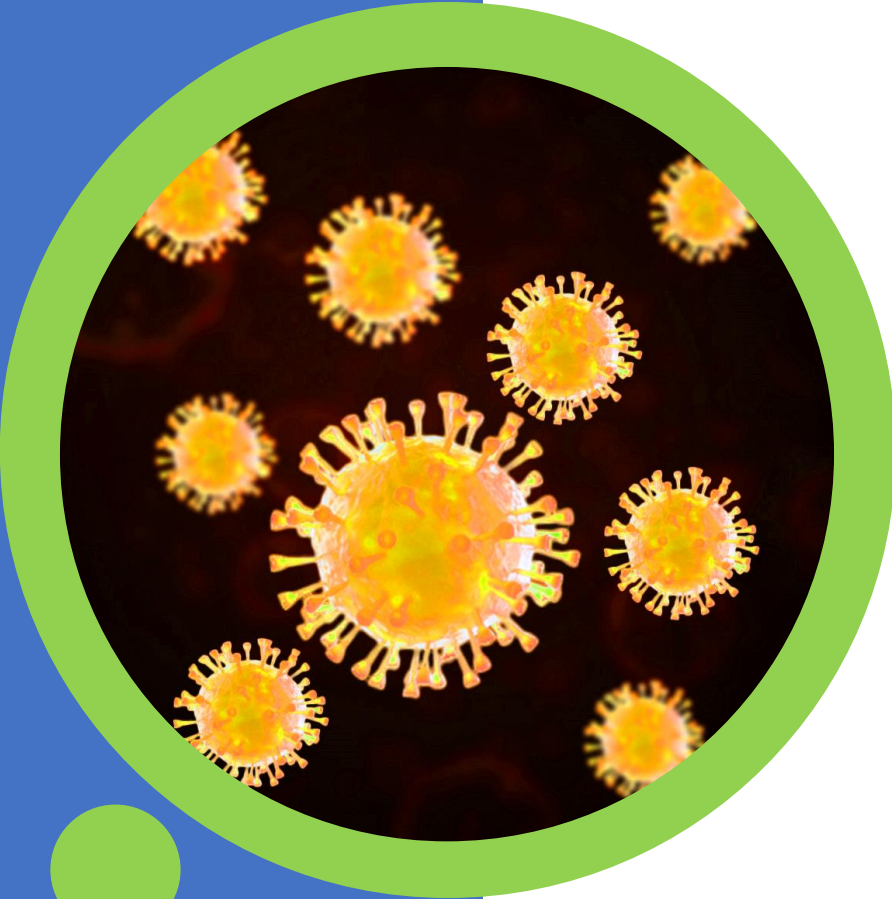


Anti-CoVs Antibodies

Name	Clone	Species Reactivity	Type	Applications	Cat.
Anti-SARS-CoV S Antibody	CR3022	SARS_CoV	Human antibody	ELISA	MRO-1214LC
Anti-SARS-CoV S Antibody	80R	SARS_CoV	Human antibody	ELISA	MRO-693LC
Anti-SARS-CoV S Antibody	S109.8	SARS_CoV	Human antibody	ELISA	MRO-692LC
Anti-SARS-CoV S Antibody	S230.15	SARS_CoV	Human antibody	ELISA	MRO-691LC
Anti-SARS-CoV S Antibody	S227.14	SARS_CoV	Human antibody	ELISA	MRO-690LC
Anti-SARS-CoV S Antibody	508-573	SARS_CoV	Human antibody	ELISA, WB	MRO-689LC
Anti-SARS-CoV S Antibody	512-9	SARS_CoV	Human antibody	ELISA, WB	MRO-688LC
Anti-SARS-CoV S Antibody	73-121	SARS_CoV	Human antibody	ELISA, WB	MRO-677LC
Anti-SARS-CoV S Antibody	S104.1	SARS_CoV	Human antibody	ELISA	MRO-614LC
Anti-SARS-CoV S Antibody	12-28-1	SARS_CoV	Human antibody	ELISA, WB	MRO-676LC
Anti-SARS-CoV S Antibody	S103.3	SARS_CoV	Human antibody	ELISA	MRO-613LC
Anti-SARS-CoV S Antibody	SC03-007	SARS_CoV	Human antibody	ELISA	MRO-700LC
Anti-SARS-CoV S Antibody	S101.1	SARS_CoV	Human antibody	ELISA	MRO-611LC

Anti-CoVs Antibodies

Name	Clone	Species Reactivity	Type	Applications	Cat.
Anti-SARS-CoV S Antibody	A11	SARS_CoV	Human antibody	ELISA	MRO-671LC
Anti-SARS-CoV S Antibody	S3.1	SARS_CoV	Human antibody	ELISA, Neut	MRO-610LC
Anti-SARS-CoV Antibody	F26G10	SARS_CoV	Mouse antibody	ELISA	MRO-652LC
Anti-SARS-CoV S Antibody	5E1.2	SARS_CoV	Human antibody	ELISA	MRO-629LC
Recombinant Human Anti-SARS m396 Antibody	m396	SARS_CoV	Human IgG	FC, WB, FuncS	MHH-884
Human Anti-SARS-CoV Recombinant Antibody	G6	SARS_CoV	Human IgG	ELISA, IF, IHC	HPAB-1915-FY
Human Anti-SARS-CoV Recombinant Antibody	03-018	SARS_CoV	Human IgG	ELISA	HPAB-1912-FY
Human Anti-SARS-CoV Recombinant Antibody	03-002	SARS_CoV	Human IgG	ELISA	HPAB-1910-FY
Recombinant Anti-SARS-CoV Antibody	S109.8	SARS_CoV	Mouse IgG	ELISA, RIA, Inhib	HPAB-0104LY
Recombinant Human Anti-SARS-CoV Antibody	HuMAb 03-014	SARS_CoV	Human IgG1	ELISA, Neut	HPAB-0297CQ



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