

PRODUCT INFORMATION

SARS-CoV-2 Neutralizing Antibody Human Plasma Control Set

Item No. 502080

Synonym: Severe Acute Respiratory Syndrome Coronavirus 2 Neutralizing Antibody Human Plasma Control

Storage: -20°C

Stability: ≥6 months

Description

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is an enveloped positive-stranded RNA virus, a member of the *Betacoronavirus* genus, and the causative agent of COVID-19.¹⁻⁵ The SARS-CoV-2 surface glycoprotein, also known as the spike glycoprotein, is located on the outer envelope of the virion, and contains the receptor binding domain (RBD), which binds to angiotensin-converting enzyme 2 (ACE2), the functional receptor for SARS-CoV-2.^{1,6-10}

SARS-CoV-2 infection can result in the production of neutralizing antibodies, which bind to the SARS-CoV-2 spike RBD preventing further viral entry and infection, starting approximately 4-10 days after symptom onset.^{11,12} Plasma levels of SARS-CoV-2 spike glycoprotein-specific IgG antibodies increase for at least four weeks following symptom onset.^{11,13} SARS-CoV-2 plasma antibody levels begin to decrease 2-3 months post-infection in both symptomatic and asymptomatic individuals, disappearing completely in some asymptomatic individuals.¹⁴ The detection of neutralizing antibodies to SARS-CoV-2 is important in evaluating the lifetime and efficacy of specific antibodies in the host.

Contents

Cayman's SARS-CoV-2 Neutralizing Antibody Human Plasma Control Set contains human plasma collected prior to the SARS-CoV-2 pandemic that has been spiked at low, mid, or high levels with a recombinant human anti-SARS-CoV-2 neutralizing IgG antibody. A negative control, free of neutralizing antibody, is also included. The levels of neutralizing antibody to be added to each control were determined by screening numerous positive and negative samples using Cayman's SARS-CoV-2 Neutralizing Antibody Detection ELISA Kit (Item No. 502070). The amount of neutralizing antibody spiked into the controls was designed to be representative of the range of antibody levels found in a typical sample set.

Included in the set are:

Item No.	Component	Amount
502081	SARS-CoV-2 Neutralizing Antibody Negative Human Plasma Control	0.1 ml
502082	SARS-CoV-2 Neutralizing Antibody Low Human Plasma Control	0.1 ml
502083	SARS-CoV-2 Neutralizing Antibody Mid Human Plasma Control	0.1 ml
502084	SARS-CoV-2 Neutralizing Antibody High Human Plasma Control	0.1 ml

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 03/09/2021

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM

PRODUCT INFORMATION



References

1. Kandeel, M., Ibrahim, A., Fayez, M., *et al.* From SARS and MERS CoVs to SARS-CoV-2: Moving toward more biased codon usage in viral structural and nonstructural genes. *J. Med. Virol.* **92(6)**, 660-666 (2020).
2. Lu, R., Zhao, X., Li, J., *et al.* Genomic characterisation and epidemiology of 2019 novel coronavirus: Implications for virus origins and receptor binding. *Lancet* **395(10224)**, 565-574 (2020).
3. Meo, S.A., Alhowikan, A.M., Al-Khlaiwi, T., *et al.* Novel coronavirus 2019-nCoV: Prevalence, biological and clinical characteristics comparison with SARS-CoV and MERS-CoV. *Eur. Rev. Med. Pharmacol. Sci.* **24(4)**, 2012-2019 (2020).
4. Klok, F.A., Kruip, M.J.H.A., van der Meer, N.J.M., *et al.* Incidence of thrombotic complications in critically ill ICU patients with COVID-19. *Thromb. Res.* **191**, 145-147 (2020).
5. Yang, F., Shi, S., Zhu, J., *et al.* Analysis of 92 deceased patients with COVID-19. *J. Med. Virol.* (2020).
6. Hoffmann, M., Kleine-Weber, H., Schroeder, S., *et al.* SARS-CoV-2 cell entry depends on ACE2 and TMPRSS2 and is blocked by a clinically proven protease inhibitor. *Cell* **181(2)**, 271-280 (2020).
7. Yan, R., Zhang, Y., Li, Y., *et al.* Structural basis for the recognition of the SARS-CoV-2 by full-length human ACE2. *Science* **267(6485)**, 1444-14448 (2020).
8. Wrapp, D., Wang, N., Corbett, K.S., *et al.* Cryo-EM structure of the 2019-nCoV spike in the prefusion conformation. *Science* **367(6483)**, 1260-1263 (2020).
9. Bestle, D., Heindl, M.R., Limburg, H., *et al.* TMPRSS2 and furin are both essential for proteolytic activation of SARS-CoV-2 in human airway cells. *Life Sci. Alliance* **3(9)**, e202000786 (2020).
10. Shang, J., Wan, Y., Luo, C., *et al.* Cell entry mechanisms of SARS-CoV-2. *PNAS* **117(21)**, 11727-11734 (2020).
11. Wang, A., Zhang, L., Sang, L., *et al.* Kinetics of viral load and antibody response in relation to COVID-19 severity. *J. Clin. Invest.* (2020).
12. Xiang, F., Wang, X., He, X., *et al.* Antibody detection and dynamic characteristics in patients with coronavirus disease 2019. *Clin. Infect. Dis.* (2020).
13. Li, L., Tong, X., Chen, H., *et al.* Characteristics and serological patterns of COVID-19 convalescent plasma donors: Optimal donors and timing of donation. *Transfusion* (2020).
14. Long, Q.-X., Tang, X.-J., Shi, Q.-L., *et al.* Clinical and immunological assessment of asymptomatic SARS-CoV-2 infections. *Nat. Med.* **26(8)**, 1200-1204 (2020).

CAYMAN CHEMICAL
1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA
PHONE: [800] 364-9897
[734] 971-3335
FAX: [734] 971-3640
CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM