

# PRODUCT INFORMATION



## SARS-CoV-2 Spike Glycoprotein (433-506)

Item No. 30430

### Overview and Properties

<b>Synonyms:</b>	SARS-CoV-2 Surface Glycoprotein, Severe Acute Respiratory Syndrome Coronavirus 2 Spike Glycoprotein
<b>Amino Acids:</b>	433-506
<b>Molecular Weight:</b>	8.41 kDa
<b>Storage:</b>	-80°C (as supplied)
<b>Stability:</b>	≥1 year
<b>Purity:</b>	≥95%

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Description

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) spike glycoprotein (433-506) is a fragment of the SARS-CoV-2 spike glycoprotein, also known as the surface glycoprotein, encoded by the S gene in SARS-CoV-2 RNA.<sup>1</sup> It contains amino acids 433-506 of the full-length SARS-CoV-2 spike glycoprotein sequence. SARS-CoV-2 is an enveloped positive-stranded RNA virus, a member of the *Betacoronavirus* genus, and the causative agent of COVID-19.<sup>1,2,6-8</sup> The SARS-CoV-2 spike glycoprotein is located on the outer envelope of the virion.<sup>1</sup> It is composed of an S1 and S2 subunit divided by a furin S-cleavage site not found in other SARS-CoVs.<sup>4,5</sup> The S1 subunit contains the receptor-binding domain (RBD), which binds to the carboxypeptidase angiotensin-converting enzyme 2 (ACE2), and the S1 and S2 subunits are cleaved by the protease TMPRSS2 to facilitate viral fusion with the host cell membrane.<sup>9-11</sup> Cayman's SARS-CoV-2 Spike Glycoprotein (433-506) contains the SARS-CoV-2 receptor binding motif (Item No. 30428) and a disulfide bridge between Cys480 and Cys488.

### References

1. Kandeel, M., Ibrahim, A., Fayed, 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. Ahmed, S.F., Quadeer, A.A., and McKay, M.R. Preliminary identification of potential vaccine targets for the COVID-19 coronavirus (SARS-CoV-2) based on SARS-CoV immunological studies. *Viruses* **2020(12)**, 254 (2020).
4. Liu, Z., Xiao, X., Wei, X., *et al.* Composition and divergence of coronavirus spike proteins and host ACE2 receptors predict potential intermediate hosts of SARS-CoV-2. *J. Med. Virol.* (2020).
5. Walls, A.C., Park, Y.-J., Tortorici, M.A., *et al.* Structure, function, and antigenicity of the SARS-CoV-2 spike glycoprotein. *Cell* **180**, 1-12 (2020).
6. 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).
7. 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.* **50049-3848(20)**, 30120-1 (2020).
8. Yang, F., Shi, S., Zhu, J., *et al.* Analysis of 92 deceased patients with COVID-19. *J. Med. Virol.* (2020).
9. 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).
10. 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)**, 1444-1448 (2020).
11. 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).

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.

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