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- Mindermengenzuschlag
- Trockeneiszuschlag
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PRODUCT INFORMATION



SARS-CoV-2 nsp14 Methyltransferase (recombinant)

Item No. 40884

Overview and Properties

Synonyms: SARS-CoV-2 Guanine-N7 Methyltransferase, SARS-CoV-2 Guanine-N7 MTase, SARS-CoV-2 Non-structural Protein 14, Severe Acute Respiratory Syndrome Coronavirus 2 nsp14 Methyltransferase

Source: Recombinant SARS-CoV-2 N-terminal GST-tagged nsp14 expressed in *E. coli*

Amino Acids: 1-527

Uniprot No.: P0DTD1

Molecular Weight: 86.3 kDa

Storage: -80°C (as supplied)

Stability: ≥1 year

Purity: ≥90% estimated by SDS-PAGE

Supplied in: 50 mM Tris, pH 7.5, with 200 mM sodium chloride and 20% glycerol

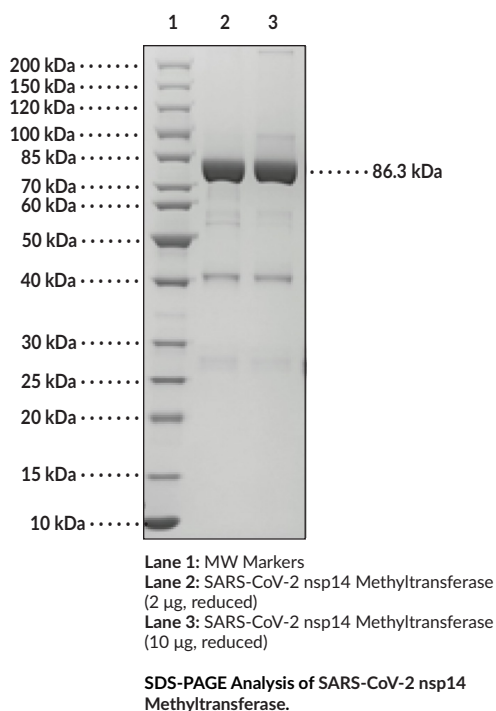
Endotoxin Testing: < 1.0 EU/μg, determined by the LAL endotoxin assay

Protein Concentration: *batch specific* mg/ml

Special Conditions: Avoid repeated freeze/thaw cycles.

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

Image



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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PRODUCT INFORMATION



Description

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is an enveloped positive-stranded RNA virus and the causative agent of COVID-19, a primarily respiratory illness characterized by fever, cough, and shortness of breath that can lead to life-threatening complications.¹⁻⁵ The SARS-CoV-2 genome contains approximately 30 kilobases and 14 open reading frames (ORFs) that encode four structural proteins: spike, envelope, membrane, and nucleocapsid, as well as 16 non-structural proteins and 9 accessory factors.⁶ SARS-CoV-2 non-structural protein 14 (nsp14), also known as guanine-N7 methyltransferase (guanine-N7 MTase), is encoded within *ORF1ab* with an amino acid sequence that displays few mutations and is highly conserved across coronaviruses and SARS-CoV-2 variants.⁶⁻⁸ It is a bifunctional enzyme having an N-terminal exoribonuclease domain (ExoN domain) and a C-terminal methyltransferase domain.^{6,7} SARS-CoV-2 nsp14 forms an exonuclease complex with the cofactor nsp10, which binds to and stabilizes the disordered ExoN domain and is a necessary interaction for accurate exoribonuclease and RNA strand proofreading activities.⁶⁻⁸ It also forms a ternary methylation complex with nsp10 and nsp16 methyltransferase, also known as 2'-O-methyltransferase (2'-O-MTase), and catalyzes guanosine methylation in the viral mRNA 5'-end cap prior to the terminal ribose methylation catalyzed by 2'-O-MTase.^{6,9} SARS-CoV-2 nsp14 inhibits IFN- β reporter gene activation induced by the retinoic acid-inducible gene I caspase activation and recruitment domain (RIG-I 2CARD domain) in HEK293FT cells, as well as inhibits global protein translation and expression of IFN-stimulated genes (ISGs) in HEK293T cells expressing SARS-CoV-2 nsp14.^{7,10}

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.* **92**(11), 2511-2515 (2020).
6. Romano, M., Ruggiero, A., Squeglia, F., *et al.* A structural view of SARS-CoV-2 RNA replication machinery: RNA synthesis, proofreading and final capping. *Cells* **9**(5), 1267 (2020).
7. Hsu, J.C.-C., Laurent-Rolle, M., Pawlak, J.B., *et al.* Translational shutdown and evasion of the innate immune response by SARS-CoV-2 NSP14 protein. *Proc. Natl. Acad. Sci. USA* **118**(24), e2101161118 (2021).
8. Wang, X., Tao, C., Morozova, I., *et al.* Identifying structural features of nucleotide analogues to overcome SARS-CoV-2 exonuclease activity. *Viruses* **14**(7), 1413 (2022).
9. Viswanathan, T., Arya, S., Chan, S.-H., *et al.* Structural basis of RNA cap modification by SARS-CoV-2. *Nat. Commun.* **11**(1), 3718 (2020).
10. Yuen, C.-K., Lam, J.-Y., Wong, W.-M., *et al.* SARS-CoV-2 nsp13, nsp14, nsp15 and orf6 function as potent interferon antagonists. *Emerg. Microbes Infect.* **9**(1), 1418-1428 (2020).