Product Information Sheet for NR-55472

SARS-Related Coronavirus 2, Isolate hCoV-19/USA/CA-Stanford-15_S02/2021 (Lineage B.1.617.1; Kappa Variant) in Calu-3 Cells

Catalog No. NR-55472

For research use only. Not for use in humans.

Contributor:

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Manufacturer:

BEI Resources

Product Description:

Virus Classification: *Coronaviridae*, *Betacoronavirus*
Species: Severe acute respiratory syndrome-related coronavirus 2
Strain/Isolate: hCoV-19/USA/CA-Stanford-15_S02/2021 (also referred to as hCoV-19/USA/CA-SU-15_S02/2021)
Original Source: Severe acute respiratory syndrome-related coronavirus 2 (SARS-CoV-2), isolate hCoV-19/USA/CA-Stanford-15_S02/2021 was isolated from a mid-turbinate nasal swab from a 29-year-old male in California, USA on March 5, 2021.[1,2]

Note: Genome sequence information is provided on the Certificate of Analysis and includes an analysis of all sequence variations observed for each lot.

Comments: Under the nomenclature system introduced by GISAID (Global Initiative on Sharing All Influenza Data), SARS-CoV-2, isolate hCoV-19/USA/CA-Stanford-15_S02/2021 is assigned lineage B.1.617.1 and GISAID clade G using Phylogenetic Assignment of Named Global Outbreak LINeages (PANGOLIN) tool.[2,3,4] SARS-CoV-2, lineage B.1.617.1 was first detected in India and labelled as a variant of interest (VOI). It was labelled as Kappa variant by the World Health Organization (WHO).[5] The complete genome of SARS-CoV-2, isolate hCoV-19/USA/CA-Stanford-15_S02/2021 has been sequenced (GISAID: EPI_ISL_1675223).[1,2] The following mutations are present in the clinical isolate: Spike D614G, Spike E154K, Spike E484Q, Spike G142D, Spike H1101D, Spike L452R, Spike P681R, Spike Q1071H, N (Nucleocapsid protein) D377Y, N R203M, NSP3 (Non-structural protein 3) S26L, NSP6 (Non-structural protein 6) I33T, NSP7a (Non-structural protein 7a) V82A, NSP3 T749I, NSP6 T77A, NSP12 (Non-structural protein 12) P323L, NSP13 (Non-structural protein 13) M429I, NSP15 (Non-structural protein 15) K259R, NSP16 (Non-structural protein 16) T93M.[1,2] **Note: Next-Generation Sequencing of passage four SARS-CoV-2, isolate hCoV-19/USA/CA-Stanford-15_S02/2021 at BEI Resources revealed two additional mutations as compared to the clinical isolate (GISAID: EPI_ISL_1675223): NSP14 (Non-structural protein 14) P158S and E (Envelope) F4L. Please refer to the Certificate of Analysis for more information.**

In December 2019, an outbreak of a respiratory illness (COVID-19) began in Wuhan, Hubei Province, China. The outbreak is associated with a seafood market and although environmental samples from the market are positive for the novel coronavirus, an association with a particular animal has not been determined.[6] SARS-CoV-2 has been isolated from patients from several countries and the sequences of some of these isolates have been deposited with GISAID.

Material Provided:

Each vial contains approximately 0.1 mL of spin-clarified cell lysate and supernatant from *Homo sapiens* lung adenocarcinoma cells infected with SARS-CoV-2, isolate hCoV-19/USA/CA-Stanford-15_S02/2021.

Note: If homogeneity is required for your intended use, please purify prior to initiating work.

Packaging/Storage:

NR-55472 was packaged aseptically in screw-capped plastic cryovials. The product is provided frozen and should be stored at -60°C or colder immediately upon arrival. For long-term storage, the vapor phase of a liquid nitrogen freezer is recommended. Freeze-thaw cycles should be avoided.

Growth Conditions:

Host: *Homo sapiens* lung adenocarcinoma cells (Calu-3; ATCC® HTB-55™)
Growth Medium: Eagle's Minimum Essential Medium containing Earle's Balanced Salt Solution, non-essential amino acids, 2 mM L-glutamine, 1 mM sodium pyruvate and 1500 mg per L of sodium bicarbonate supplemented with 2% fetal bovine serum, or equivalent
Infection: Cells should be 70% to 90% confluent
Incubation: 3 to 5 days at 37°C and 5% CO_2
Cytopathic Effect: Cell rounding and sloughing

Citation:

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: SARS-Related Coronavirus 2, Isolate hCoV-19/USA/CA-Stanford-15_S02/2021 (Lineage B.1.617.1; Kappa Variant) in Calu-3 Cells, NR-55472, contributed by Dr. Mehul Suthar and Dr. Benjamin Pinsky."

Biosafety Level: 3

Appropriate safety procedures should always be used with this material. Laboratory safety is discussed in the following publication: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, and National Institutes of Health. Biosafety in Microbiological and Biomedical Laboratories. 6th ed. Washington, DC: U.S. Government Printing Office, 2020; see www.cdc.gov/biosafety/publications/bmbl5/index.htm.

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Disclaimers:

You are authorized to use this product for research use only. This product is not intended for human use.

Use of this product is subject to the terms and conditions of the Emergency Use Simple Letter Agreement (EUSLA) and the BEI Resources Material Transfer Agreement (MTA). The MTA is available on our Web site at www.beiresources.org.

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Use Restrictions:

SARS-CoV-2 materials provided by BEI Resources under the EUSLA are made available for any legitimate purpose, including commercial purposes as long as they are to rapidly prevent, detect, prepare for, and respond to, the spread or transmission of the 2019 SARS-CoV-2. Any further transfer of the original material or any unmodified progeny must be done under the terms of the EUSLA, documented as described above and you must notify BEI Resources of each subsequent transfer. Any new materials made by you that are not the original material or unmodified progeny are excluded from this requirement and you are free to share and commercialize those as your materials.

References:

1. Suthar, M., Personal Communication.
2. GISAID
3. Rambaut, A., et al. “A Dynamic Nomenclature Proposal for SARS-CoV-2 Lineages to Assist Genomic Epidemiology.” Nat. Microbiol. 5 (2020): 1403-1407. PubMed: 32669681.
4. Mercatelli, D. and F. M. Giorgi. “Geographic and Genomic Distribution of SARS-CoV-2 Mutations.” Front. Microbiol. (2020): doi.org/10.3389/fmicb.2020.01800. PubMed: 32793182.
5. WHO
6. Gralinski, L. E. and V. D. Menachery. “Return of the Coronavirus: 2019-nCoV.” Viruses 12 (2020): 135. PubMed: 31991541.

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