

Product Information Sheet for NR-54011

SARS-Related Coronavirus 2, Isolate USA/CA_CDC_5574/2020

Catalog No. NR-54011

For research use only. Not for use in humans.

Contributor:

Centers for Disease Control and Prevention, Atlanta, Georgia, USA

Manufacturer:

BEI Resources

Product Description:

Virus Classification: *Coronaviridae*, *Betacoronavirus*

Species: Severe acute respiratory syndrome-related coronavirus 2

Strain/Isolate: USA/CA_CDC_5574/2020

Original Source: Severe acute respiratory syndrome-related coronavirus 2 (SARS-CoV-2), isolate USA/CA_CDC_5574/2020 was isolated from a nasopharyngeal swab on December 29, 2020 in San Diego County, California, USA.^{1,2}

Comments: Under the nomenclature system introduced by GISAID (Global Initiative on Sharing All Influenza Data), SARS-CoV-2, isolate USA/CA_CDC_5574/2020 is assigned lineage B.1.1.7 and GISAID clade GR using Phylogenetic Assignment of Named Global Outbreak LINeages (PANGOLIN) tool.^{2,3,4} The complete genome of SARS-CoV-2, isolate USA/CA_CDC_5574/2020 has been sequenced (GISAID: EPI_ISL_751801).^{1,2} The following mutations are present in the clinical isolate: Spike A570D, Spike D614G, Spike D1118H, Spike H69del, Spike N501Y, Spike P681H, Spike S982A, Spike T716I, Spike V70del, Spike Y145del, M (Membrane protein) V70L, N (Nucleocapsid protein) D3L, N G204R, N R203K, N S235F, NS3 T223I, NS8 (Non-structural protein 8) Q27stop, NS8 R52I, NS8 Y73C, NSP3 (Non-structural protein 3) A890D, NSP3 I1412T, NSP3 T183I, NSP6 (Non-structural protein 6) F108del, NSP6 G107del, NSP6 S106del, NSP12 (Non-structural protein 12) P323L, NSP13 (Non-structural protein 13) A454V, NSP13 K460R.² One additional SNP in ORF1ab L3826F was reported in the deposited passage two virus, in comparison to the clinical specimen.¹

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.⁵ 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 0.5 mL of cell lysate and supernatant from *Cercopithecus aethiops* kidney epithelial

cells infected with SARS-CoV-2, isolate USA/CA_CDC_5574/2020.

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

Packaging/Storage:

NR-54011 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: *Cercopithecus aethiops* kidney epithelial cells (Vero; ATCC® CCL-81™)

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/L of sodium bicarbonate supplemented with 2% fetal bovine serum, or equivalent

Infection: Cells should be 60% to 80% confluent

Incubation: 2 to 5 days at 37°C and 5% CO₂

Cytopathic Effect: Cell rounding and sloughing

Citation:

Acknowledgment for publications should read "The following reagent was deposited by Centers for Disease Control and Prevention and obtained through BEI Resources, NIAID, NIH: SARS-Related Coronavirus 2, Isolate USA/CA_CDC_5574/2020, NR-54011."

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/bmb15/index.htm.

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. Thornburg, N., 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. Gralinski, L. E. and V. D. Menachery. "Return of the Coronavirus: 2019-nCoV." *Viruses* 12 (2020): 135. PubMed: 31991541.

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