

# SARS-Related Coronavirus 2, Isolate USA/CA/VRLC012/2021 (Lineage P.2; Zeta Variant)

Catalog No. NR-55439

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: USA/CA/VRLC012/2021 (also referred to as USA/CA-Stanford-04\_S01/2021)<sup>1,2</sup>

Original Source: Severe acute respiratory syndrome-related coronavirus 2 (SARS-CoV-2), isolate USA/CA/VRLC012/2021 was isolated from a mid-turbinate nasal swab from an adult on January 23, 2021 in California, USA.<sup>1,2</sup>

**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 USA/CA/VRLC012/2021 is assigned lineage P.2 (sub-lineage of B.1.1.28) and GISAID clade GR using Phylogenetic Assignment of Named Global Outbreak LINEages (PANGOLIN) tool.<sup>2,3,4</sup> The complete genome of SARS-CoV-2, isolate USA/CA/VRLC012/2021 has been sequenced (GISAID: EPI\_ISL\_1364506).<sup>1,2</sup> The following mutations are present in the clinical isolate (referred to as hCoV-19/USA/CA-Stanford-04\_S01/2021): Spike D614G, Spike E484K, Spike V1176F, N (Nucleocapsid protein) G204R, N M234I, N R203K, NSP3 (Non-structural protein 3) P992L, NSP3 V253A, NSP7 (Non-structural protein 7) L71F, NSP12 (Non-structural protein 12) P323L.<sup>2</sup> SARS-CoV-2, lineage P.2 was first detected in Brazil and labelled as a variant of interest (VOI). It was labelled as Zeta variant by the World Health Organization (WHO).<sup>5</sup>

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.<sup>6</sup>

## Material Provided:

Each vial contains approximately 0.1 mL of spin-clarified cell lysate and supernatant from *Homo sapiens* lung adenocarcinoma epithelial cells (Calu-3) infected with SARS-CoV-2, isolate USA/CA/VRLC012/2021.

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

## Packaging/Storage:

NR-55439 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 epithelial 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 60% to 80% confluent

Incubation: 3 to 5 days at 37°C and 5% CO<sub>2</sub>

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 USA/CA/VRLC012/2021 (Lineage P.2; Zeta Variant), NR-55439, contributed by Andrew S. Pekosz."

## 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](http://www.cdc.gov/biosafety/publications/bmbl5/index.htm).

## Disclaimers:

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### References:

1. Pekosz, A. S., 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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