

SARS-Related Coronavirus 2, Isolate hCoV-19/Japan/TY7-503/2021 (Brazil P.1)

Catalog No. NR-54982

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/Japan/TY7-503/2021 (Brazil P.1) (also referred to as TY7-503, hCoV-19/Japan/IC-0564/2021)

Original Source: Severe acute respiratory syndrome-related coronavirus 2 (SARS-CoV-2), isolate hCoV-19/Japan/TY7-503/2021 (Brazil P.1) was isolated in airport quarantine in Japan from a COVID-19 positive passenger from Brazil in January 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/Japan/TY7-503/2021 (Brazil P.1) is assigned lineage P.1 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 hCoV-19/Japan/TY7-503/2021 (Brazil P.1) has been sequenced [Clinical isolate (referred to as hCoV-19/Japan/IC-0564/2021): GISAID: EPI_ISL_792683; Passage 2 in Vero E6/TMPRSS2 cells: GISAID: EPI_ISL_877769].^{1,2} The following mutations are present in the clinical isolate: Spike D138Y, Spike D614G, Spike E484K, Spike H655Y, Spike K417T, Spike L18F, Spike N501Y, Spike P26S, Spike R190S, Spike T20N, Spike T1027I, Spike V1176F, N (Nucleocapsid protein) G204R, N P80R, N R203K, NSP3 (Non-structural protein 3) S253P, NSP8 (Non-structural protein 8) E92K, NSP3 K977Q, NSP3 S370L, NSP6 (Non-structural protein 6) F108del, NSP6 G107del, NSP6 S106del, NSP12 (Non-structural protein 12) P323L, NSP13 (Non-structural protein 13) E341D.² The deposited virus (Passage 2 in Vero E6/TMPRSS2 cells) was reported to have an additional mutation as compared to the clinical isolate: NSP6 (Non-structural protein 6) F184V.^{1,2}

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 0.1 mL of spin-clarified cell lysate and supernatant from *Homo sapiens* lung adenocarcinoma cells infected with SARS-CoV-2, isolate hCoV-19/Japan/TY7-503/2021 (Brazil P.1).

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

Packaging/Storage:

NR-54982 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 and 0.1% penicillin/streptomycin solution, or equivalent

Infection: Cells should be 70% to 90% confluent

Incubation: 2 to 4 days at 37°C and 5% CO₂

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/Japan/TY7-503/2021 (Brazil P.1), NR-54982, contributed by National Institute of Infectious Diseases."

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

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