VLP

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Severe Acute Respiratory Syndrome Corona Virus 2-like particles (Ha-CoV-2), (B.1.1.298)

Catalog #: 0568-PP-005

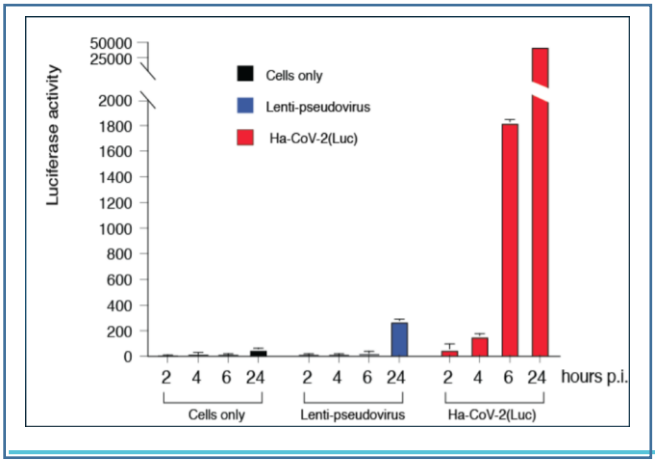
Description:
The hybrid alpha-pseudovirus for SARS-CoV-2 (Ha-CoV-2) is a newly developed SARS-CoV-2 virus-like particle (VLP) that encapsulates an alphavirus-derived RNA genome for rapid report expression (luciferase or GFP) in target cells (Hetrick et al., 2022). Different from commonly used S protein pseudotyped lenti- or vesicular stomatitis virus (VSV)-pseudoviruses, Ha-CoV-2 is assembled with all 4 structural proteins (S, M, N, and E) of SARS-CoV-2, and contains a reporter genome derived from an alphavirus-based vector for rapid (6 hours) and robust expression of reporter genes. The alphavirus vector does not contain any of the structural proteins from the authentic virus and the alpha-pseudovirus particles are single-cycle.

Formulation & Storage: Available upon request
Store at -80°C.

Notes & Usage Guidelines:
Spike Mutations: Spike D614G, Spike H69del, Spike I692V, Spike M1229I, Spike V70del, Spike Y453F
Size: 25 X 200 µL ~100 wells/96 well plate or 60x
Conc. 5 x 100 µL
Reporter: Available with Firefly luciferase, GFP, or RFP

Applications

- Screening and quantification of anti-coronavirus-neutralizing antibodies
- Anti-coronavirus drug screening
- Quantification of viral mutants' infectivity
- Identification of host co-factors and restriction factors of coronaviruses



Hybrid alpha-Pseudovirus Neutralization Assay Protocol:

A monolayer of Vero cells is infected with VLPs or a mixture of VLPs and test sample for approximately 1 hr in a dilution block. Cells are overlayed with 1-2% FBS supplemented media and incubated overnight at 37°C + 5% CO_2. Following overnight incubation, luciferase activity is measured by adding an appropriate substrate like Bright-Glo™ or Luciferase Assay System (Promega). Plates can be read immediately on an instrument such as BioTek Cytation™ or similar. Relative neutralization activity is measured by comparing treated versus untreated wells (or virus only control). In dose response experiments the concentration of TA resulting in 50% neutralization (IC50) is determined.

Repeated freeze/thaw cycles are not recommended as it may affect viral titer and infectivity.

Left: Comparison of Ha-CoV-2 with S protein pseudotyped lentivirus in a time course of infection and reporter expression

Certificate of analysis:
A hardcopy of datasheet is sent along with the products. Please refer to it for detailed information. For older lots, refer to the applicable certificate of analysis that may be requested at services@ibtbioservices.com

Related Products:
IBT provides a wide array of anti-filovirus specific antibodies, recombinant proteins, and other infectious disease reagents. Please see our website, www.ibtbioservices.com for more details.

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