SARS-CoV-2 Pseudoviral Particles, Alpha Variant (UK B.1.1.7)

Cat. No. SARS-CoV-2-15PsV **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Our SARS-CoV-2-UK Pseudoviral Particles are replication-deficient MLV pseudotyped with the SARS-CoV-2 spike protein of the Alpha variant, originally known as UK variant B.1.1.7, VOC 202012/01, 201/501Y.V1). They also contain the ORF for firefly luciferase as a reporter. They establish a pseudovirus cell entry assay mediated by the SARS-CoV-2 spike protein that can be conveniently measured via luciferase reporter activity. This pseudovirus assay isolates the SARS-CoV-2 viral entry from other steps of the viral infection cycle.
Species	SARS-CoV-2
Description	It has been known that SARS-CoV-2 and SARS-CoV both use human ACE2 as entry receptor and human proteases as entry activators. The virus surface spike protein (S) mediates SARS-CoV-2 entry into cells. To fulfill its function, SARS CoV-2 spike binds to its human ACE2 (hACE2) receptor through its receptor-binding domain (RBD) and is proteolytically activated by human proteases.
Usage	Note: requires a luciferase assay reagent. Cell Infection: 1. Count HEK293-ACE2 cells to be infected and seed ~20K cells per well into 96-well plates (50 µL per well) DMEM with 10% Serum (no antibiotics) or 5K cells per well into 384-well plates (15 µL per well). 2. Culture cells overnight to make sure the cells stably adhere to the plates. 3. On the 2nd day, remove media, add 50 µL SARS-CoV-2-UK Pseudoviral Particles* into each well (12.5 µL for 384-well plate). Spin at 700 rpm for 15 min at 4 centigrade.

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	*Note: thaw the pseudoviral particles quickly in the room temperature water (< 30 minutes, do not shake) and use right away. Discard the unused portion (do not re-freeze or leave it on ice for later use). 4. Incubate for 2 hrs at 37 centigrade. 5. Add 50 µL DMEM with 10% FC into each well (12.5 µL for 384-well plates). 6. Incubate for 42 hrs at 37 centigrade. Measurement of Luciferase Activity in Infected Cells 1. Do not remove medium. Add 100 µL luciferase assay WORKING SOLUTION (25 µL for 384-well plate) directly into each well. 2. Read in a luminescence plate reader and record the data.
Applications	Our Pseudovirus Particles generate robust chemiluminescent signals in cell assays when coupled with our firefly luciferase assay kit, useful for: 1) screening potential inhibitor to block SARS-CoV-2 entry and viral protein translation; 2) measuring the activity of and screening for neutralizing antibody against SARS-CoV-2-UK.
Shelf Life	Six months from the date of shipping when stored at -70 centigrade.
Features	Robust: Excellent signal to noise (basal) ratio Easy to use: Amenable to HTS format (96-well, 384-well and 1536-well format)
Storage	At -70 centigrade.
Shipping	Shipped on dry ice.
References	1. Development and Characterization of Phage-Display-Derived Novel Human Monoclonal Antibodies against the Receptor Binding Domain of SARS-CoV-2.

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Pseudoviral Particle (PP) Infection Assays	SARS-CoV-2-UK variant pseudoviral particles on HEK293-ACE2 cells in 384-well format.
Illustration of the replication-deficient MLV particle pseudotyped with SARS-CoV-2 Spike protein	

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