Description

Human Angiotensin converting enzyme 2 (ACE2), also known as ACEH, is an integral membrane protein found on the surface of cells in the lungs, arteries, heart, kidney, and intestines. ACE2 serves as the entry point into cells for some coronaviruses, including the two strains that caused outbreaks of Severe acute respiratory syndrome (SARS-CoV) and coronavirus disease 2019 (COVID-19) (SARS-CoV-2).

The ACE2 Lentivirus are replication incompetent, HIV-based, VSV-G pseudotyped lentiviral particles that are ready to be transduced into almost all types of mammalian cells, including primary and non-dividing cells. The particles contain an ACE2 gene (NM_021804.3) driven by an EF1A promoter (Figure 1).

Application

1. Transient expression of ACE2 in target cells.
2. Generation of a stable cell line expressing ACE2 with Puromycin selection.

Formulation

The lentiviruses were produced from HEK293T cells. Supplied in medium containing 90% DMEM + 10% FBS.

Titer

Two vials (500 µl x 2) of lentivirus at a titer ≥5 x 10^6 TU/ml. The titer will vary with each lot; the exact value is provided with each shipment.

Storage

Lentiviruses are shipped with dry ice. For long term storage, it is recommended to store the virus at -80°C. Avoid repeated freeze-thaw cycles. Titers can drop significantly with each freeze-thaw cycle.

Biosafety

None of the HIV genes (gag, pol, rev) will be expressed in the transduced cells, as they are expressed from packaging plasmids lacking the packing signal. Although the pseudotyped lentiviruses are replication-incompetent, they require the use of a Biosafety Level 2 facility. BPS recommends following all local federal, state, and institutional regulations and using all appropriate safety precautions.

License Disclosure

Visit bpsbioscience.com/license for the label license and other key information about this product.

Troubleshooting Guide

Visit bpsbioscience.com/lentivirus-faq for detailed troubleshooting instructions. For all further questions, please email support@bpsbioscience.com.

Figures and Validation Data

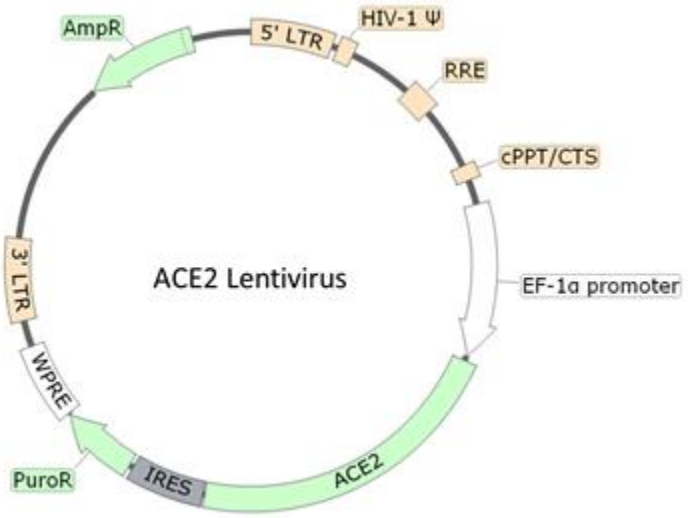

Figure 1. Schematic of the lenti-vector used to generate the ACE2 lentivirus

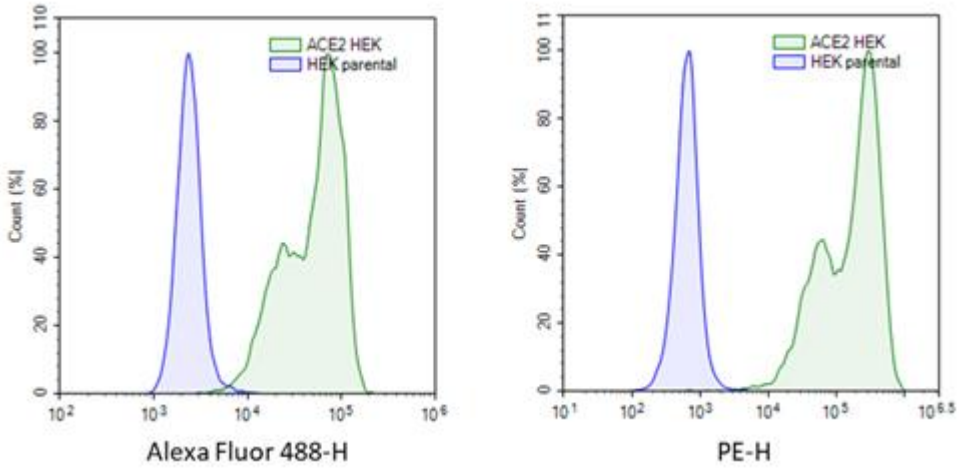

Figure 2. The expression of ACE2 in HEK293 cells transduced with ACE2 lentivirus.
A. Appropriate 500,000 cells/well (6-well culture plate) were transduced with 5,000,000 TU/well ACE2 lentivirus in the presence of 5 µg/mL of polybrene. After 52 hours of transduction, the transduced cells were stained by anti-human ACE2 polyclonal goat IgG primary antibody (R&D systems #AF933) and Alexa Fluor 488-conjugated rabbit anti-goat IgG secondary antibody (Thermo Fisher #A-21222). The ACE2 expression was analyzed by FACS. Blue, HEK293 parental cells; Green, HEK293 cells transduced with ACE2 lentivirus.
B. Appropriate 500,000 cells/well (6-well culture plate) were transduced with 5,000,000 TU/well ACE2 lentivirus in the presence of 5 µg/mL of polybrene. After 52 hours of transduction, the transduced cells were stained by Biotinylated Spike S1 (BPS Bioscience #100679) and PE-conjugated Streptavidin (Biolegend #405204). The ACE2 expression was analyzed by FACS. +Blue, HEK293 parental cells; Green, HEK293 cells transduced with ACE2 lentivirus.

Related Products

Products	*Catalog #*	*Size*
Spike S1, Fc fusion, Avi-tag, Biotin-Labeled	100679	20 µg, 50 µg
Spike S1, Fc fusion, Avi-tag	100678	100 µg
NFκB Luciferase Reporter Lentivirus	79564	500 µl x 2
CRE Luciferase Reporter Lentivirus	79580	500 µl x 2
NFAT Luciferase Reporter Lentivirus	79579	500 µl x 2
STAT3 Luciferase Reporter Lentivirus	79744	500 µl x 2
STAT5 Luciferase Reporter Lentivirus	79745	500 µl x 2
TCF/LEF Luciferase Reporter Lentivirus	79787	500 µl x 2
ISRE Luciferase Reporter Lentivirus	79824	500 µl x 2
IL-2 Promoter Luciferase Reporter Lentivirus	79825	500 µl x 2
IL-8 Promoter Luciferase Reporter Lentivirus	79827	500 µl x 2
AP-1 Luciferase Reporter Lentivirus	79823	500 µl x 2
SBE Luciferase Reporter Lentivirus	79806	500 µl x 2
TEAD Luciferase Reporter Lentivirus	79833	500 µl x 2
ARE Luciferase Reporter Lentivirus	79869	500 µl x 2
Negative Control Lentivirus	79578	500 µl x 2
Renilla Luciferase (Rluc) Lentivirus	79565	500 µl x 2
Firefly Luciferase (Fluc) Lentivirus (G418)	79692-G	500 µl x 2
Firefly Luciferase (Fluc) Lentivirus (Hygromycin)	79692-H	500 µl x 2
Firefly Luciferase (Fluc) Lentivirus (Puromycin)	79692-P	500 µl x 2