Human Angiotensin-Converting Enzyme 2 (hACE2) Stable Cell Line

CATALOG NUMBER: CL-hACE2-002

Introduction

ACE2 is known to serve as the entry point into cells for some coronaviruses, including HCoV-NL63, SARS-CoV, and SARS-CoV-2. Cells in the lungs, arteries, heart, kidney, and intestines, express high level of ACE2 on their membrane surface. ACE2 is a promising drug target for treating cardiovascular diseases and for preventing COVID-19.

Description

This HEK293-hACE2 stable cell line expresses a recombinant human ACE2 (Angiotensin-Converting Enzyme 2) with the Green Fluorescent Protein (GFP) fused to its C-terminus. The cells have GFP signals on the cell membrane. The expression of ACE2 on the cell membrane has also been confirmed by FACS analysis.

Parental Cells

HEK-293 cells

Gene/Enzyme Introduced

Human ACE2 (EC 3.4.17.23)

Other name(s): ACE-2; ACE2; hACE2; angiotensin converting enzyme 2; angiotensin converting enzyme-2; Tmem27
Genbank Locus ID 59272

Applications

- SARS-CoV-2 entry study
- Cell based high-throughput screening of human ACE2 antagonists

Functional Tests

- This cell line has been tested positive for ACE2 specific response
- Survival rate: more than 2 million/vial on the second day after thawing

Mycoplasma Contamination Test

This lot of cells have been tested and found to be free of mycoplasma contamination.

Content

- Stable hACE2 cells: 1 mL (2 x 10^6 cells/mL in DMEM, 10% FBS, 10% DMSO)

Growth Properties

Adherent

Cell Culture Medium

- Growth medium: DMEM + 10%FBS + 1X P/S + **1 ug/ml puromycin**
- Freezing medium: 10% DMSO, 90% growth medium

Storage

Remove the frozen cells from the dry ice packaging and immediately place the cells at a temperature below -130°C, preferably in liquid nitrogen vapor, until ready for use.

Restriction

This cell line is not allowed to be transferred to other laboratory or other company. For purchasing this cell line, please contact eEnzyme LLC at info@eEnzyme.com, Telephone: +1 (240) 683 5851, FAX: +1 (240) 683 5852

Cell Culture Protocol

THAWING AND PLATING CELLS (REQUIRES 1-3 DAYS)

1. Prepare complete cell culture medium consisting of 90% Dulbecco's Modified Eagle Medium (DMEM), 10% fetal bovine serum (FBS), 1X P/S, and 1 μg/ml puromycin. Warm the medium to ~37 °C.
2. Remove a vial of cells from the liquid Nitrogen tank. Wear safety glasses and always point the cap away from your face when opening.
3. Place the vial of cells in a 37 °C water bath until just thawed (less than 5 minutes). Decontaminate the cryovial by wiping the surface of the vial with 70% ethanol, and immediately transfer cells to a 10 cm cell-culture plate or a T25 flask with 9 ml of the appropriate culture medium (pre-warmed to 37 °C).
4. Place the cells in a cell-culture incubator at 37 °C with 5% CO2 for 4 hrs.
5. After 4 hours replace the culture medium with appropriate fresh culture medium (pre-warmed at 37 °C).
6. Place the cells back in the incubator for 1-3 days. The cells will not require feeding before they reach 80-90% confluence and are ready for expansion. Split the cells when they reach 80-90% confluence.

Note: *It is very important that the cells DO NOT reach >90% confluence. Over-confluent growth can result in a significantly reduced response to ligands, and it may take several passages for the cells to recover to optimal stage.*

For using this cell line with SCV2-PsV pseudovirus in infectivity assay, refer to Step 1 under "Cell Infection" in the SCV2-PsV menu for information on seeding and culturing details.

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