

Human Very Low Density Lipoprotein Receptor (VLDLR) Stable Cell Line

CATALOG NUMBER: CL-VLDLR-01

Introduction

The Human Very Low-Density Lipoprotein Receptor (VLDLR) is a member of the LDL receptor family involved in lipid uptake and cellular signaling. Notably, VLDLR functions as an entry receptor for Eastern Equine Encephalitis Virus (EEEV), a highly pathogenic alphavirus. EEEV exploits VLDLR to invade host cells-particularly neuronal tissues-contributing to its neuroinvasive and neurovirulent characteristics. This virus-receptor interaction is central to EEEV pathogenesis, positioning VLDLR a promising target for antiviral drug development and therapeutic intervention.

Description

This stable HEK293 cell line has been genetically engineered to express recombinant human VLDLR (GenBank Accession No. NP_003374.3), localized to the cell surface. Functional validation was performed using Eastern Equine Encephalitis Pseudoviral particles, confirming receptor-mediated viral entry and suitability for virus-host interaction studies.

Applications

- High-throughput screening of human VLDLR antagonists
- Mechanistic studies of EEEV entry and pathogenesis

Functional Validation

- **Assay performed:**
 - RT-qPCR for VLDLR transcript expression
 - Pseudovirus infection assay using EEEV particles
- **Post-thaw viability:** >2.5 million viable cells per vial on Day 2
- **Mycoplasma status:** Negative (tested and confirmed free of contamination)

Product Contents

- Stable VLDLR-expressing cells: 1 mL (2×10^6 cells/mL) in DMEM, 10% FBS, 10% DMSO

Growth & Culture Conditions

- Cell type: Adherent
- Growth medium: 90%DMEM+10%FBS+1 ug/mL puromycin
- Freezing medium: 90% complete growth medium + 10% DMSO

Storage Instructions

Upon receipt, immediately transfer the vial to a storage temperature below -130°C, preferably in liquid nitrogen vapor phase, Avoid repeated freeze-thaw cycles.



Recommended Cell Infection Assay Protocol

1. Cell Seeding:

- Seed ~20,000 VLDLR or HEK293 cells per well in 96-well plates (50 μ L/well)
- Alternatively, seed ~5,000 cells per well in 384-well plates (12.5 μ L/well)
- Use DMEN + 10% HyClone™ FetalClone™ II Serum (no antibiotics)

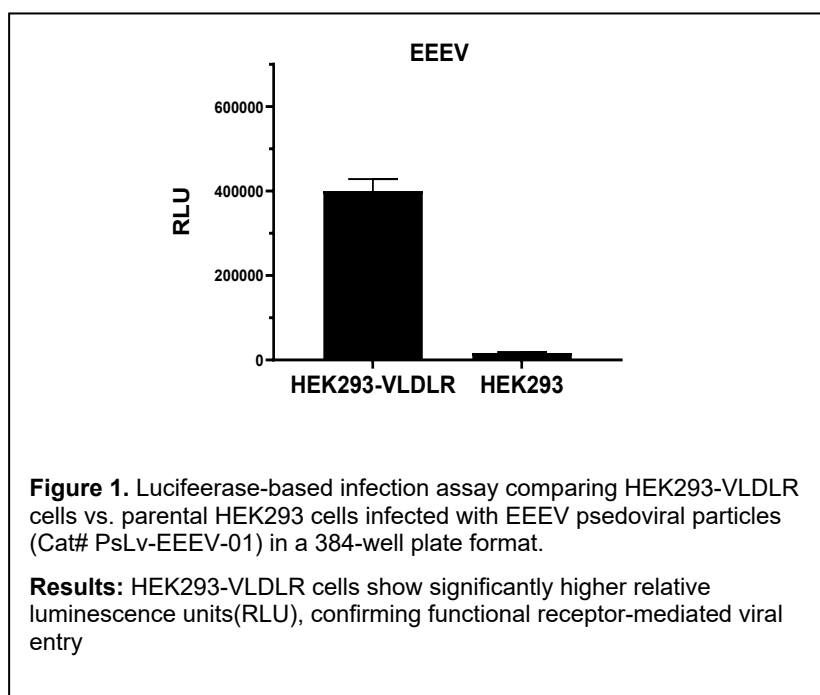
2. Infection:

- Add 50 μ L pseudoviral particles per well (12.5 μ L for 384-well)
- Centrifuge at 700 rpm for 15 min at 4 °C
- Incubate for 72 hrs at 37°C

3. Luciferase Activity Measurement:

- Optional: Remove medium for cleaner signal (higher RLU if medium is retained)
- Add 100 μ L luciferase assay reagent (25 μ L for 384-well)
- Read luminescence using BioTek Synergy 2 plate reader

Functional Assay Data



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

