

Product Sheet

H_LHCGR Reporter 293 Cell Line

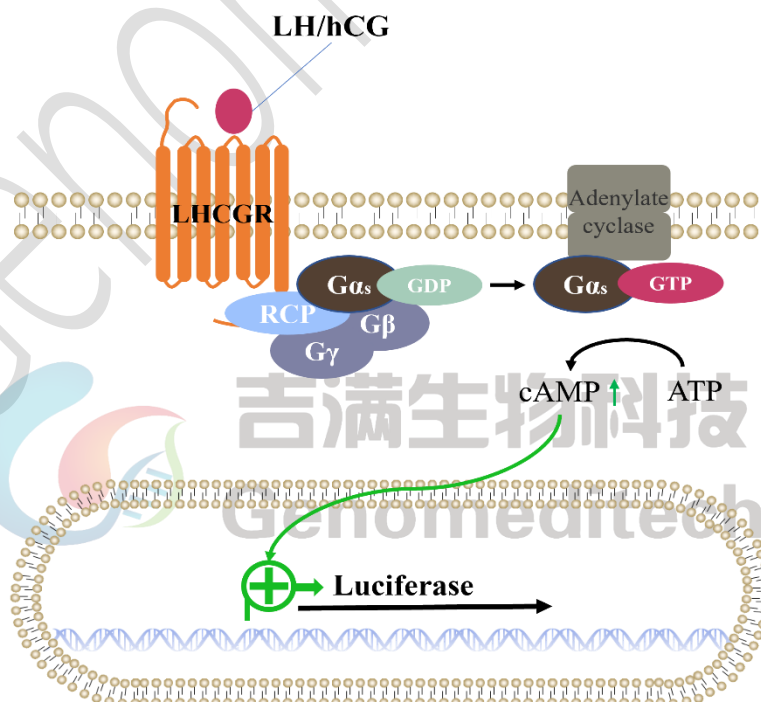
Catalog number: GM-C29851

Version 3.3.1.260717

Luteinizing Hormone/Choriogonadotropin Receptor (LHCGR) is a G protein-coupled receptor (GPCR) predominantly expressed in the gonads, specifically the ovaries and testes, as well as in various extra-gonadal tissues such as the uterus and mammary glands. It is crucial for reproductive physiology, mediating luteinizing hormone (LH)-induced steroidogenesis, promoting ovulation, and supporting pregnancy via responsiveness to human chorionic gonadotropin (hCG). LHCGR is implicated in various endocrine disorders, including infertility and ovarian hyperstimulation syndrome, making it a significant therapeutic target.

The LHCGR signaling pathway is activated upon binding of LH or hCG to the receptor, which induces conformational changes and couples to heterotrimeric G proteins. This primarily activates the $G_{\alpha s}$ subtype, stimulating adenylyl cyclase (AC) to convert ATP to cyclic AMP (cAMP).

H_LHCGR Reporter 293 Cell Line is a clonal stable cell line constructed using lentiviral technology, featuring constitutive expression of the human LHCGR gene alongside a signal-dependent luciferase reporter gene. Upon binding of HCG to LHCGR, the receptor couples to $G_{\alpha s}$ proteins, activating the Camp-mediated signaling cascade that drives luciferase expression. Quantitative measurement of luciferase activity directly indicates the activation level of the LHCGR- $G_{\alpha s}$ -Camp pathway, providing a robust platform for the in vitro evaluation of LHCGR-targeted therapeutics.



Specifications

Quantity	5E6 Cells per vial, 1 mL
Product Format	1 vial of frozen cells
Shipping	Shipped on dry ice
Storage Conditions	Liquid nitrogen immediately upon receipt
Recovery Medium	DMEM+10% FBS+1% P.S
Growth medium	DMEM+10% FBS+1% P.S+4 µg/mL Blasticidin+0.75 µg/mL Puromycin
Note	None
Freezing Medium	90% FBS+10% DMSO
Growth properties	Adherent
Growth Conditions	37°C, 5% CO ₂
Mycoplasma Testing	The cell line has been screened to confirm the absence of Mycoplasma species.
Safety considerations	Biosafety Level 2
Note	It is recommended to expand the cell culture and store a minimum of 10 vials at an early passage for potential future use.

Materials

Reagent	Manufacturer/Catalogue No.
Blasticidin	Genomeditech/ GM-040404
Puromycin	Genomeditech/ GM-040401
DMEM	Gibco/C11995500BT
Fetal Bovine Serum	ExCell/FSP500
Pen/Strep	Thermo/15140-122
hCG Standard	MultiSciences/EK1299S
GMOne-Step 2.0 Luciferase Reporter Gene Assay Kit	Genomeditech/ GM-040513

Figures

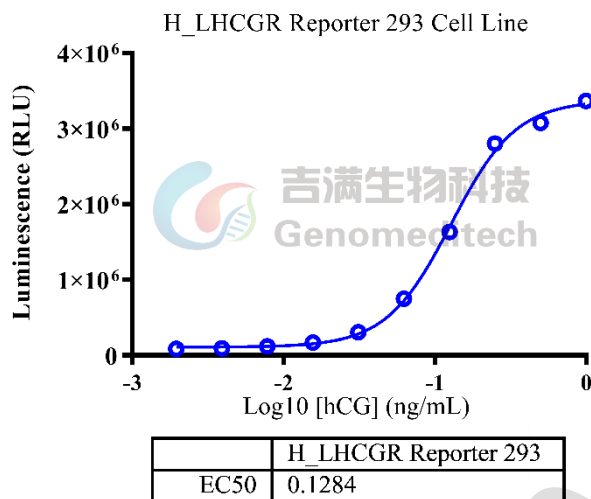


Figure 1 | Response to hCG Standard. H_LHCGR Reporter 293 Cell Line (Cat. GM-C29851) was seeded at a density of 1.5E4 cells per well in a 96-well plate and incubated overnight. The next day, serial dilutions of the hCG Standard (MultiSciences/EK1299S) were added to the pre-seeded cells. The mixture was incubated for an additional 6 hours. The firefly luciferase activity was measured using the Luciferase Reporter Assay Kit (Genomeditech). The maximum induction fold was approximately [43.3]. Data are shown by drug mass concentration.

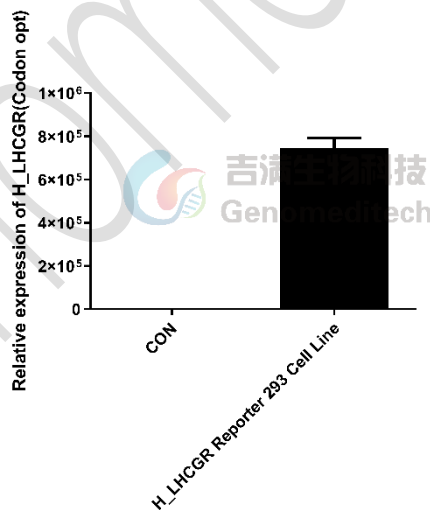


Figure 2 | The mRNA expression levels of H_LHCGR in the H_LHCGR Reporter 293 Cell Line (Cat. GM-C29851) were determined by RT-qPCR.

Cell Recovery

Recovery Medium: DMEM+10% FBS+1% P.S

To insure the highest level of viability, thaw the vial and initiate the culture as soon as possible upon receipt. If upon arrival, continued storage of the frozen culture is necessary, it should be stored in liquid nitrogen vapor phase and not at -70°C . Storage at -70°C will result in loss of viability.

- Thaw the vial by gentle agitation in a 37°C water bath. To reduce the possibility of contamination, keep the O-ring and cap out of the water. Thawing should be rapid (approximately 2 - 3 minutes).
- Remove the vial from the water bath as soon as the contents are thawed, and decontaminate by dipping in or spraying with 70% ethanol. All of the operations from this point on should be carried out under strict aseptic conditions.
- Transfer the vial contents to a centrifuge tube containing 5.0 mL complete culture medium and spin at approximately $176 \times g$ for 5 minutes. Discard supernatant.
- Resuspend cell pellet with the recommended recovery medium. And dispense into appropriate culture dishes.
- Incubate the culture at 37°C in a suitable incubator. A 5% CO_2 in air atmosphere is recommended if using the medium described on this product sheet.

Cell Freezing

Freezing Medium: 90% FBS+10% DMSO

- Centrifuge at $176 \times g$ for 3 minutes to collect cells.
- Resuspend the cells in pre-cooled freezing medium and adjust the cell density to 5×10^6 cells/mL.
- Aliquot 1 mL into each vial.
- Place the vial in a controlled-rate freezing container and store at -80°C for at least 1 day, then transfer to liquid nitrogen as soon as possible.

Cell passage

Growth medium: DMEM+10% FBS+1% P.S+4 $\mu\text{g/mL}$ Blasticidin+0.75 $\mu\text{g/mL}$ Puromycin

For the first 1 to 2 passages post-resuscitation, use the recovery medium. Once the cells have stabilized, switch to a growth medium.

- Subculturing is necessary when the cell density reaches 80%. It is recommended to perform subculturing at a ratio of 1:3 to 1:4 every 2-3 days. Ensure that the density does not exceed 80%, as overcrowding can lead to reduced viability due to compression.
- Remove and discard culture medium.
- Briefly rinse the cell layer with PBS to remove all traces of serum that contains trypsin inhibitor.
- Add 1.0 mL of 0.25% (w/v) Trypsin-EDTA solution to dish and observe cells under an inverted microscope until cell layer is dispersed (usually within 30 to 60 seconds at 37°C).
- Note: To avoid clumping do not agitate the cells by hitting or shaking the flask while waiting for the cells to detach. Cells that are difficult to detach may be placed at 37°C to facilitate dispersal.
- Add 2.0 mL of growth medium to mix well and aspirate cells by gently pipetting.
- After centrifugation, resuspend the pellet and add appropriate aliquots of the cell suspension to new culture vessels.
- Incubate cultures at 37°C .

Subcultivation Ratio: A subcultivation ratio of 1:3 - 1:4 is recommended

Medium Renewal: Every 2 to 3 days

Notes

- a) Upon initial thawing, a higher number of dead cells is observed, which is a normal phenomenon. Significant improvement is seen after adaptation. Once the cells reach a stable state, the number of dead cells decreases after subculturing and the cell growth rate becomes stable.
- b) Ensure that the cell density does not exceed 80%, as overcrowding may lead to reduced viability due to compression.

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