

Product Sheet

H_GLP1R GIPR GCGR Triple Reporter 293 Cell Line

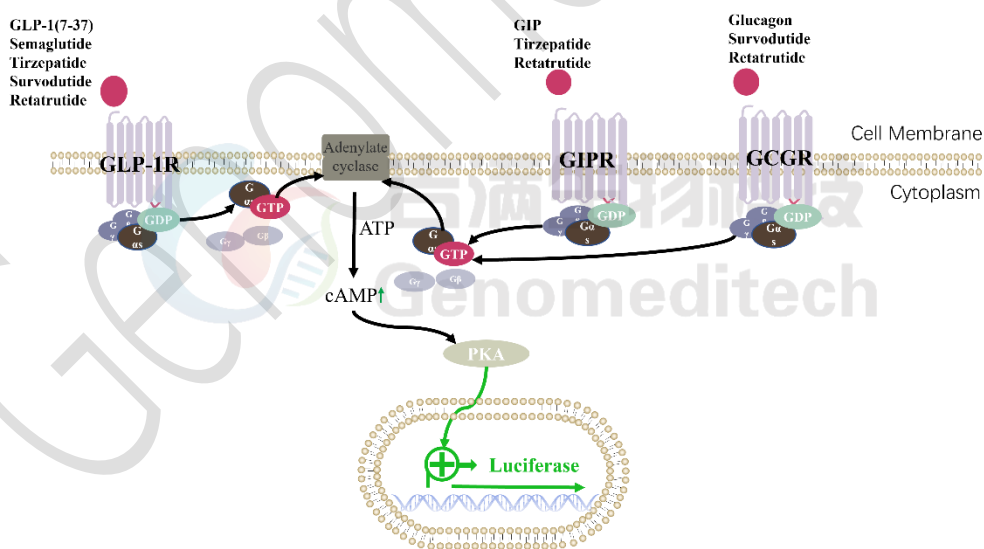
Catalog number: GM-C44406

Version 3.3.1.260417

GIPR, GCGR, and GLP-1R are all Class B GPCRs. Their activation primarily triggers the cAMP-PKA signaling pathway, but they differ in distribution and function, GIPR is mainly in pancreatic β cells and regulates insulin-related functions. GCGR is expressed in the liver and kidneys, promoting glycogen breakdown. GLP-1R is found in pancreatic cells and brain neurons, enhancing insulin release and appetite control. It is a key target for diabetes drugs.

Although traditional single-target therapies have demonstrated certain therapeutic effects, they still struggle to systematically correct the overall dysregulation of metabolic networks. In recent years, dual-target drugs targeting GLP1R and GIPR have developed rapidly. Owing to their significant advantages in "synergistic efficacy and reduced side effects," they have become a key trend in drug development in this field..

The H_GLP1R GIPR GCGR Triple Reporter 293 Cell Line is a clonal, stable cell line that constitutively expresses human GLP1R, human GIPR and human GCGR, along with a signal-dependent expression of a luciferase reporter gene. The binding of Retatrutide to the three receptors activate downstream reporter genes, leading to luciferase expression. The luciferase readout indicates the activation level of the signaling pathway and can thus be used to evaluate the in vitro effects of drugs related to the GLP1R, GIPR and GCGR receptors.



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+400 µg/mL G418+125 µg/mL Hygromycin+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. |
|---|----------------------------|
| Puromycin | Genomeditech/GM-040401 |
| Blasticidin | Genomeditech/GM-040404 |
| G418 | Genomeditech/GM-040402 |
| Hygromycin | Genomeditech/GM-040403 |
| Pen/Strep | Thermo/15140-122 |
| Fetal Bovine Serum | ExCell/FSP500 |
| DMEM | Gibco/C11995500BT |
| Anti-GLP1R hIgG1 Antibody(mAb-36986) | Genomeditech/GM-51168AB |
| Anti-H_GIPR hIgG1 Antibody(AMG-133) | Genomeditech/GM-84915AB |
| Anti-H_GCGR hIgG2 Antibody(volagidemab) | Genomeditech/GM-84555AB |
| GMOne-Step 2.0 Luciferase Reporter Gene Assay Kit | Genomeditech/GM-040513 |
| Retatrutide | Targetmol/T76279 |

Figures

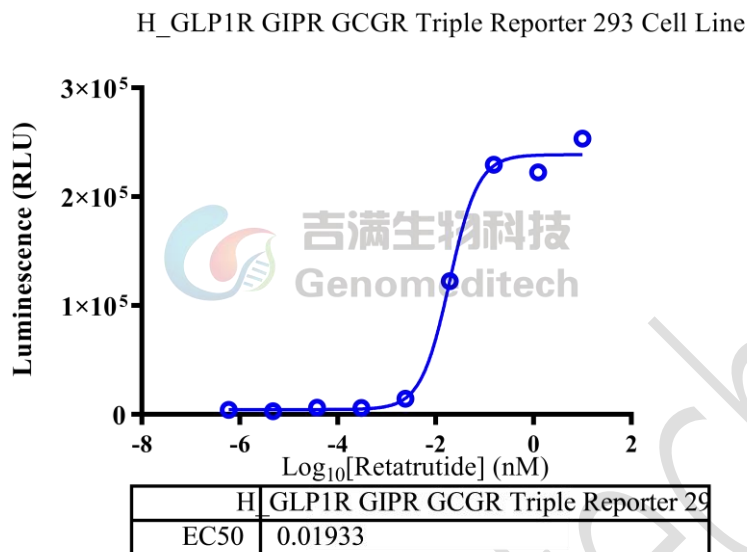


Figure 1 | Response to Retatrutide. The H_GLP1R GIPR GCGR Triple Reporter 293 Cell Line (Cat. GM-C44406) at a concentration of 1E4 cells/well (96-well format) was stimulated with serial dilutions of Retatrutide (targetmol/T76279) in assay buffer (DMEM + 1% FBS + 1% P.S) for 6 hours. The firefly luciferase activity was measured using the Luciferase Reporter Assay Kit (Genomeditech). The maximum induction fold was approximately [76.9]. Data are shown by drug molar concentration.

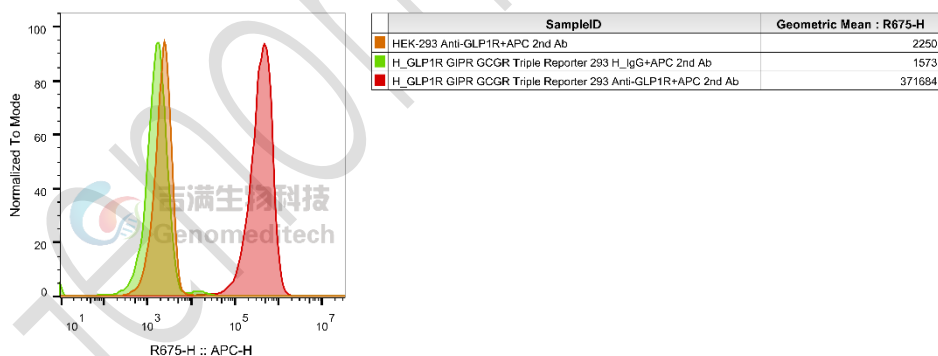


Figure 2 | H_GLP1R GIPR GCGR Triple Reporter 293 Cell Line (Cat. GM-C44406) was determined by flow cytometry using Anti-GLP1R hIgG1 Antibody(mAb-36986) (Cat. GM-51168AB).

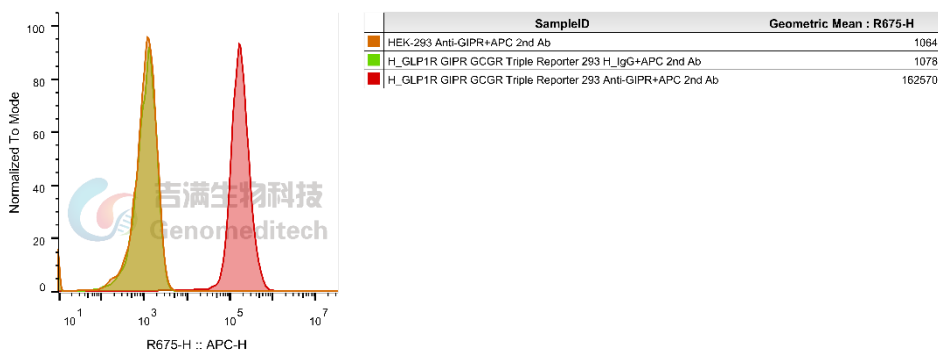


Figure 3 | H_GLP1R GIPR GCGR Triple Reporter 293 Cell Line (Cat. GM-C44406) was determined by flow cytometry using Anti-H_GIPR hIgG1 Antibody(AMG-133) (Cat. [GM-84915AB](#)).

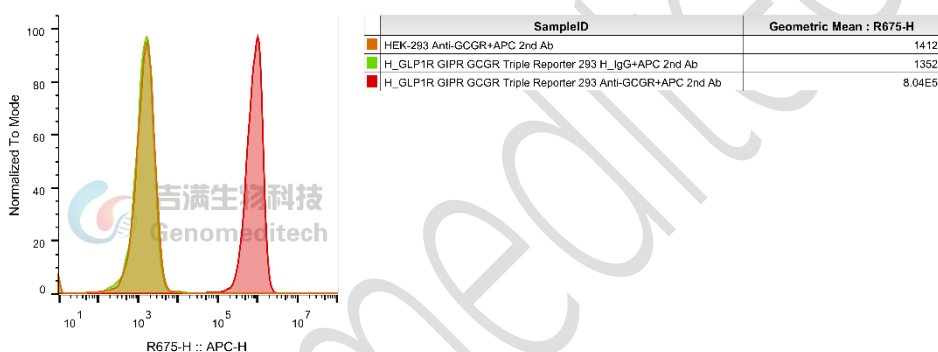


Figure 4 | H_GLP1R GIPR GCGR Triple Reporter 293 Cell Line (Cat. GM-C44406) was determined by flow cytometry using Anti-H_GCGR hIgG2 Antibody(volagidemab) (Cat. [GM-84555AB](#)).

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 x g for 5 minutes. Discard supernatant.
- Resuspend cell pellet with the recommended recovery medium. And dispense into appropriate culture dishes.

- e) Incubate the culture at 37°C in a suitable incubator. A 5% CO₂ 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 x g for 3 minutes to collect cells.
- Resuspend the cells in pre-cooled freezing medium and adjust the cell density to 5E6 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 µg/mL Blasticidin+400 µg/mL G418+125 µg/mL Hygromycin+0.75 µg/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

- 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.
- Ensure that the cell density does not exceed 80%, as overcrowding may lead to reduced viability due to compression.

Related Products

| GCGR | |
|---|---|
| H_GCGR Reporter CHO-K1 Cell Line | H_GCGR Reporter HEK-293 Cell Line |
| H_GCGR Reporter HEK-293 DDX35TM Cell Line | Cynomolgus_GCGR HEK-293 Cell Line |
| H_GCGR CHO-K1 Cell Line | H_GCGR HEK-293 Cell Line |
| Mouse_GCGR HEK-293 Cell Line | |
| Anti-H_GCGR hIgG2 Antibody(volagidemab) | |
| Human GCGR(26-136) Protein; His Tag | |
| GLP1R | |
| H_GLP1R GIPR Reporter CHO-K1 Cell Line | H_GLP1R Reporter CHO-K1 Cell Line |
| H_GLP1R Reporter HEK-293 Cell Line | H_GLP1R Reporter HEK-293 DDX35TM Cell Line |
| H_GLP1R β -Arrestin Reporter CHO-K1 Cell Line | Cynomolgus_GLP1R GIPR CHO-K1 Cell Line |
| Cynomolgus_GLP1R HEK-293 Cell Line | H_GLP1R CHO-K1 Cell Line |
| H_GLP1R GIPR CHO-K1 Cell Line | H_GLP1R HEK-293 Cell Line |
| Mouse_GLP1R GIPR CHO-K1 Cell Line | Mouse_GLP1R HEK-293 Cell Line |
| Rat_GLP1R HEK-293 Cell Line | |
| Anti-GLP1R hIgG1 Antibody(mAb-36986) | Anti-H_GLP1R hIgG1 Antibody(glutazumab) |
| FGFR1 | |
| H_FGF21 Reporter HEK-293 Cell Line | |
| Human FGF-21 Protein; His Tag | |
| CALCA(CGRP):CALCRL RAMP | |
| H_CALCRL RAMP1 Reporter HEK-293 Cell Line | H_CALCRL RAMP1 Reporter HEK-293 DDX35TM Cell Line |
| Cynomolgus_CALCRL RAMP1 HEK-293 Cell Line | H_CALCRL RAMP1 CHO-K1 Cell Line |
| H_CALCRL RAMP1 HEK-293 Cell Line | |
| Anti-CALCRL RAMP1 hIgG2 Antibody(Erenumab) | |
| GPR75 | |
| H_GPR75 HEK-293 Cell Line | |
| GIPR | |
| H_GIPR Reporter CHO-K1 Cell Line | H_GIPR Reporter HEK-293 Cell Line |
| H_GIPR Reporter HEK-293 DDX35TM Cell Line | Cynomolgus_GIPR CHO-K1 Cell Line |
| Cynomolgus_GIPR HEK-293 Cell Line | H_GIPR CHO-K1 Cell Line |
| H_GIPR HEK-293 Cell Line | Mouse_GIPR CHO-K1 Cell Line |
| Mouse_GIPR HEK-293 Cell Line | |
| Anti-H_GIPR hIgG1 Antibody(AMG-133) | |
| ACVR2A:ACTRIIB:Active A | |
| ACVR2A KO HEK-293 Cell Line | ACVR2B KO HEK-293 Cell Line |
| Activin A Reporter Cell Line | BRE Reporter 293 Cell Line |
| H_ACVR2A Reporter Cell Line | H_ACVR2B Reporter Cell Line |
| H_ACVR2B Reporter DDX35TM Cell Line | H_ACVR2A HEK-293(ACVR2B KO) Cell Line |
| H_ACVR2B CHO-K1 Cell Line | H_ACVR2B HEK-293(ACVR2A KO) Cell Line |

| | |
|--|---|
| Anti-ACVR2A hIgG1 Antibody(LAE-102) | Anti-ACVR2B hIgG1 Antibody(Bimagrumab) |
| Anti-ACVR2B hIgG1 Antibody(Fab-17G05) | Anti-ACVR2B mIgG2a Antibody(Bimagrumab) |
| Anti-GDF8 hIgG4 Reference Antibody (Aptibio) | Anti-H_ACVR2B hIgG1 Reference Antibody(Bimbio) |
| Biotinylated Human ACVR2A Protein; His-Avi Tag | Biotinylated Human ACVR2B Protein; His-Avi Tag |
| Biotinylated Mouse ACVR2A Protein; His-Avi Tag | Biotinylated Mouse ACVR2B Protein; His-Avi Tag |
| Human Activin A Protein; His Tag | Human Activin A Protein; His Tag (CHO) |
| Human Activin B Protein; His Tag | Human ACVR2A Protein; hFc Tag |
| Human ACVR2A Protein; hFc Tag (Sotatercept) | Human ACVR2A Protein; His Tag |
| Human ACVR2B Protein; hFc Tag | Human ACVR2B Protein; His Tag |
| Human latent GDF-8 Protein; His Tag | Mouse ACVR2A Protein; His Tag |
| Mouse ACVR2B Protein; His Tag | |
| AMY:CALCR RAMP | |
| H_CALCR RAMP3(AMY3) Reporter CHO-K1 Cell Line | H_CALCR RAMP3(AMY3) β -Arrestin Reporter CHO-K1 Cell Line |
| H_CALCR Reporter CHO-K1 Cell Line | H_CALCR β -Arrestin Reporter CHO-K1 Cell Line |
| Rat_CALCR RAMP1(AMY1) Reporter COS-7 Cell Line | Rat_CALCR RAMP3(AMY3) Reporter COS-7 Cell Line |
| Rat_CALCR Reporter COS-7 Cell Line | H_CALCR RAMP1(AMY1) Reporter CHO-K1 Cell Line |
| THRB | |
| H_THR β Reporter HEK-293 Cell Line | |
| MC4R | |
| H_MC4R Reporter HEK-293 Cell Line | |
| ASGR1 | |
| H_ASGR1 CHO-K1 Cell Line | H_ASGR1 HEK-293 Cell Line |
| Anti-ASGR1 hIgG1 Antibody(4A2.001) | |
| Cynomolgus ASGR1 Protein; His Tag | Human ASGR1 Protein; hFc Tag |
| Human ASGR1 Protein; His Tag | Mouse ASGR1 Protein; His Tag |

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