Genomeditech (Shanghai) Co.,Ltd.
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Product Sheet

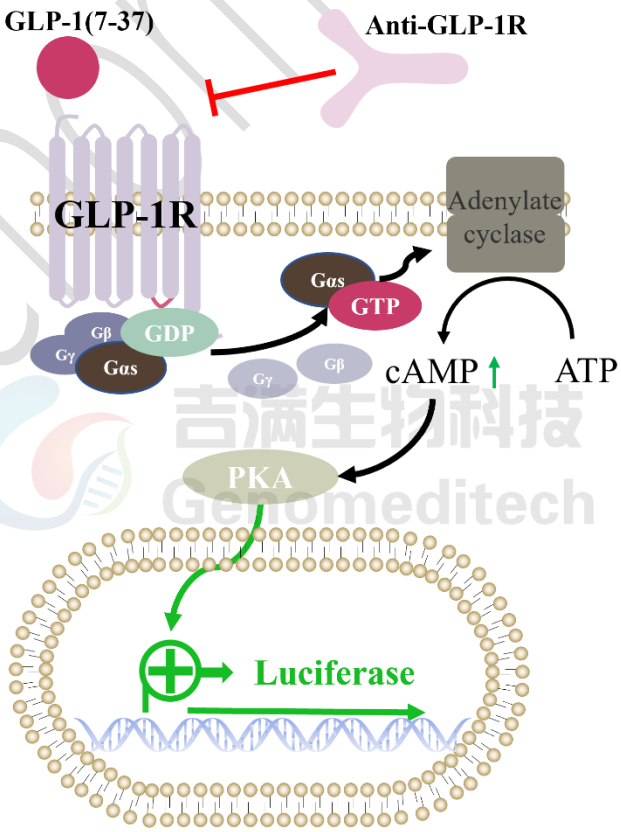
H_GLP1R Reporter CHO-K1 Cell Line

Catalog number: GM-C09150

Version 3.3.1.251029

Glucagon-like peptide-1 receptor (GLP-1R) is a receptor protein found on pancreatic cells and brain neurons, made from the GLP1R gene on chromosome 6. As part of the glucagon receptor family of G protein-coupled receptors, GLP-1R, when activated, stimulates the adenylate cyclase pathway, boosting insulin synthesis and release. This makes it a target for diabetes medications called GLP-1R agonists, and it also helps regulate appetite in the brain.
GLP-1R recognizes specific ligands at its N-terminal and couples with various G proteins (Gαs, Gαi, Gαo, and Gαq/11) to influence cell pathways. Binding to GLP-1 (7-37) activates Gαs by dissociating its alpha subunit, which activates adenylate cyclase (cAMP). This increases intracellular cAMP and protein kinase A (PKA) activity, enhancing insulin gene transcription through signaling pathways.

H_GLP1R Reporter CHO-K1 Cell Line is a clonal stable CHO-K1 cell line constructed using lentiviral technology, constitutive expression of human GLP1R, along with signal-dependent expression of a luciferase reporter gene
. The binding of the agonistic GLP-1 protein to GLP1R activates downstream reporter genes, leading to luciferase expression. Blockade antibodies of GLP1R can inhibit GLP1-GLP1R signal transmission. The luciferase readout represents the activation level of the signaling pathway and can thus be used for evaluating the in vitro effects of related drugs of GLP1R.



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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	F12K+10% FBS+1% P.S
Growth medium	F12K+10% FBS+1% P.S+4 μg/mL Blasticidin+4 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.
F12K	BOSTER/PYG0036
Fetal Bovine Serum	ExCell/FSP500
Pen/Strep	Thermo/15140-122
Blasticidin	Genomeditech/GM-040404
Puromycin	Genomeditech/GM-040401
GLP-1(7-37) acetate	MCE/HY-P0055A
Anti-GLP1R hIgG1 Antibody(mAb-36986)	Genomeditech/GM-51168AB
GMOne-Step 2.0 Luciferase Reporter Gene Assay Kit	Genomeditech/GM-040513

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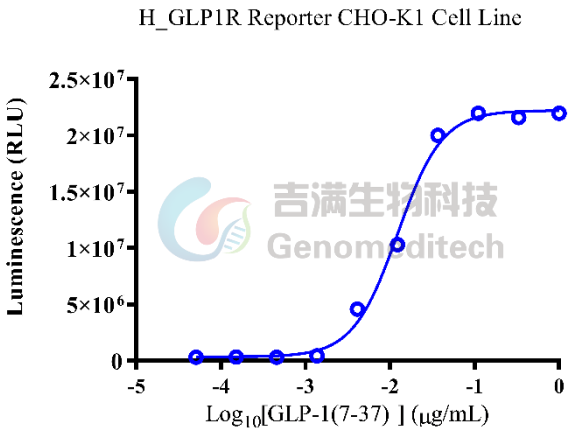
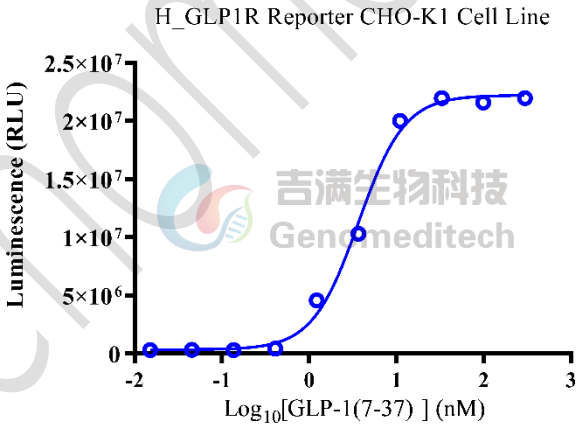
Figures



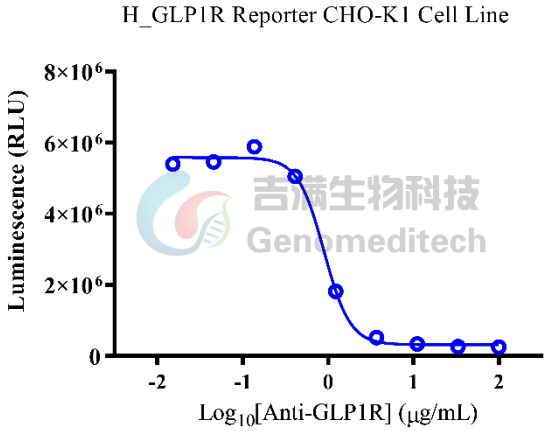
	H_GLP1R Reporter CHO-K1
EC50	0.01235

Figure 1 | Response to GLP-1(7-37). The H_GLP1R Reporter CHO-K1 Cell Line (Cat. GM-C09150) at a concentration of 1.5E4 cells/well (96-well format) was stimulated with serial dilutions of GLP-1(7-37) (MCE/HY-P0055) in assay buffer (F12K + 1% FBS + 1% P.S) for 7 hours. The firefly luciferase activity was measured using the Luciferase Reporter Assay Kit (Genomeditech). The maximum induction fold was approximately [66.4]. Data are shown by drug mass concentration.



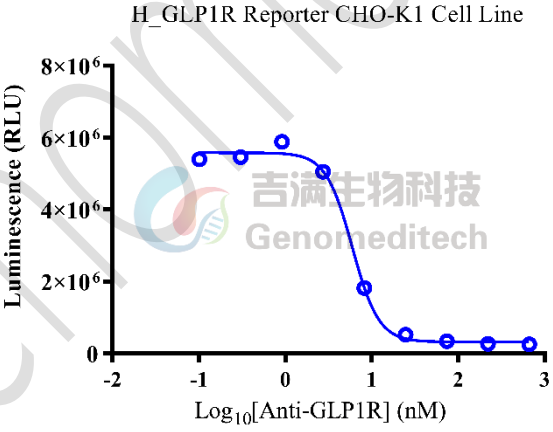
	H_GLP1R Reporter CHO-K1
EC50	3.681

Figure 2 | Response to GLP-1(7-37). The H_GLP1R Reporter CHO-K1 Cell Line (Cat. GM-C09150) at a concentration of 1.5E4 cells/well (96-well format) was stimulated with serial dilutions of GLP-1(7-37) (MCE/HY-P0055) in assay buffer (F12K + 1% FBS + 1% P.S) for 7 hours. The firefly luciferase activity was measured using the Luciferase Reporter Assay Kit (Genomeditech). The maximum induction fold was approximately [66.4]. Data are shown by drug molar concentration.



	H_GLP1R Reporter CHO-K1
IC50	0.8975

Figure 3 | Response to Anti-GLP1R hIgG1 Antibody. Serial dilutions of the Anti-GLP1R hIgG1 Antibody (Cat. GM-51168AB) was incubated with 1.5E4 cells/well of the H_GLP1R Reporter CHO-K1 Cell Line (Cat. GM-C09150) in a 96-well plate for 1 hour in assay buffer (F12K + 1% FBS + 1% P.S). Subsequently, the GLP-1(7-37) (MCE/HY-P0055) at a concentration of 1 ng/well was added, and the coculture proceeded for an additional 6 hours. Firefly luciferase activity is then measured using the Luciferase Reporter Assay Kit (Genomeditech). The results indicated a maximum blocking fold of approximately [22.7]. Data are shown by drug mass concentration.



	H_GLP1R Reporter CHO-K1
IC50	5.983

Figure 4 | Response to Anti-GLP1R hIgG1 Antibody. Serial dilutions of the Anti-GLP1R hIgG1 Antibody (Cat. GM-51168AB) was incubated with 1.5E4 cells/well of the H_GLP1R Reporter CHO-K1 Cell Line (Cat. GM-C09150) in a 96-well plate for 1 hour in assay buffer (F12K + 1% FBS + 1% P.S). Subsequently, the GLP-1(7-37) (MCE/HY-P0055) at a concentration of 1 ng/well was added, and the coculture proceeded for an additional 6 hours. Firefly luciferase activity is then measured using the Luciferase Reporter Assay Kit (Genomeditech). The results indicated a maximum blocking fold of approximately [22.7]. Data are shown by drug molar concentration.

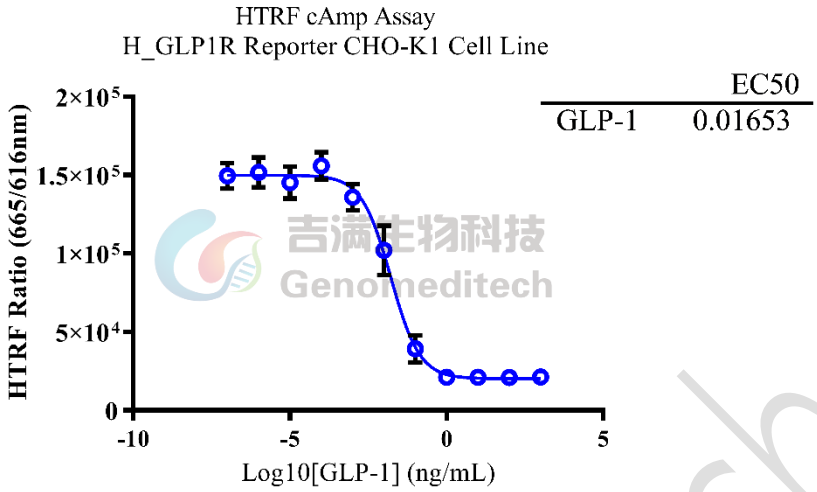


Figure 5 | H_GLP1R Reporter CHO-K1 cells were seeded at a density of 7500 cells per well in white 384-well microplates (5 µL per well). Gradient-diluted human GLP-1 solutions were then added, and the cells were incubated at room temperature for 30 minutes. The HTRF cAMP Gs Dynamic Detection Kit (Revvity, Cat. No. 62AM4PEB) was used according to the manufacturer's instructions. Fluorescence signals were measured using a Molecular Devices i3x multi-mode plate reader with excitation at 340 nm and emissions detected at 616 nm and 665 nm. The data were expressed as the 665 nm/616 nm × 100,000 (HTRF Ratio) and used to calculate the EC50 value.

Cell Recovery

Recovery Medium: F12K+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.

a) 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).

b) 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.

c) 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.

d) 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% CO_2 in air atmosphere is recommended if using the medium described on this product sheet.

Cell Freezing

Freezing Medium: 90% FBS+10% DMSO

a) Centrifuge at 176 x g for 3 minutes to collect cells.

b) Resuspend the cells in pre-cooled freezing medium and adjust the cell density to 5E6 cells/mL.

c) Aliquot 1 mL into each vial.

d) 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: F12K+10% FBS+1% P.S+4 μg/mL Blasticidin+4 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.

a) Remove and discard culture medium.

b) Briefly rinse the cell layer with PBS to remove all traces of serum that contains trypsin inhibitor.

c) 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 2 to 3 minutes at 37°C).

d) 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.

e) Add 2.0 mL of growth medium to mix well and aspirate cells by gently pipetting.

f) After centrifugation, resuspend the pellet and add appropriate aliquots of the cell suspension to new culture vessels.

g) Incubate cultures at 37°C.

Subcultivation Ratio: A subcultivation ratio of 1:4 - 1:5 is recommended

Medium Renewal: Every 2 to 3 days

Notes

a) After the stabilization of the cell condition, there will be fewer dead cells post-passage, the cell growth rate will tend to stabilize, cell morphology will become uniform, and the cells will appear robust.

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)	
GLP1R	
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
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)	
GIP: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	Activin A Reporter Cell Line
BRE Reporter 293 Cell Line	H_ACVR2A Reporter Cell Line
H_ACVR2B Reporter Cell Line	ACVR2B KO HEK-293 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-ACVR2B hIgG1 Antibody(Bimagrumab)	Anti-ACVR2B hIgG1 Antibody(Fab-17G05)
Anti-ACVR2B mIgG2a Antibody(Bimagrumab)	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 Reporter CHO-K1 Cell Line
Rat_CALCR Reporter COS-7 Cell Line	
MC4R	

H_MC4R Reporter HEK-293 Cell Line	
ASGR1	
H_ASGR1 CHO-K1 Cell Line	H_ASGR1 HEK-293 Cell Line

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