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Product Sheet

H_GCGR β-Arrestin2 Reporter CHO-K1 Cell Line

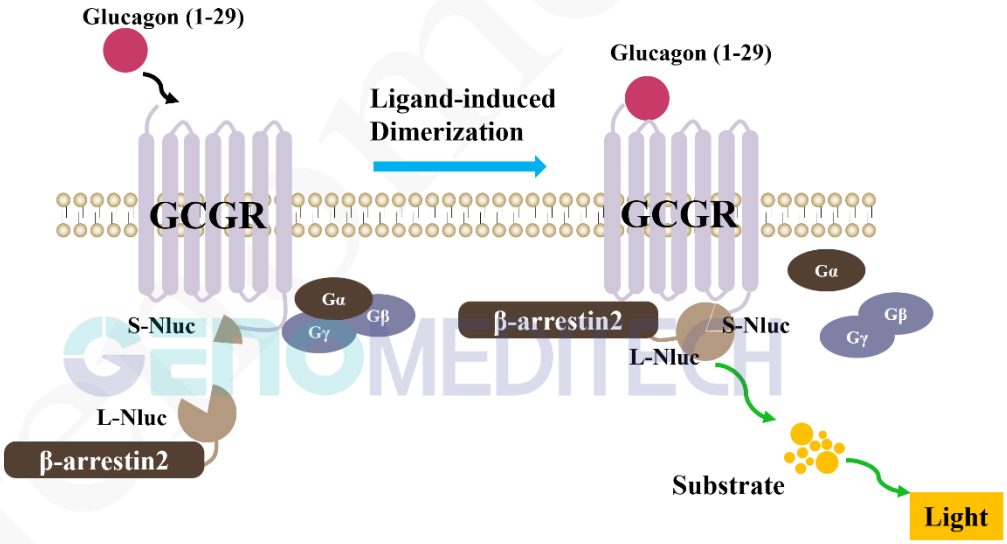
Catalog number: GM-C44432

Version 4.0.26.1112

GCGR (Glucagon Receptor) is a G protein-coupled receptor encoded by the GCGR gene, mainly expressed in the liver, kidney, pancreatic islets, adipose tissue, gastrointestinal tract, and the central nervous system. It plays a key role in glucose metabolism and energy homeostasis by promoting hepatic glycogenolysis and gluconeogenesis, stimulating insulin secretion, and regulating lipid and amino acid metabolism, and is closely associated with type 2 diabetes and obesity.

Upon glucagon binding, GCGR activates Gs protein to increase cAMP levels, thereby enhancing hepatic glucose production and insulin secretion, and recruits β-arrestin to mediate receptor desensitization, internalization, and additional metabolic responses. Thus, GCGR is a critical regulator of glucose homeostasis and a promising therapeutic target for metabolic diseases.

H_GCGR β-Arrestin2 Reporter CHO-K1 Cell Line is a clonal stable CHO-K1 cell line constructed using lentiviral technology, constitutive expression of the GCGR gene, and detected using luciferase reporter technology. When the ligand binds to GCGR, it recruits β-arrestin2 fused with a downstream luciferase reporter gene. Upon addition of the luciferase substrate, the enzyme catalyzes the substrate reaction, producing a detectable luminescent signal. Therefore, this system can be used to evaluate the in vitro efficacy of related drugs.



Specifications

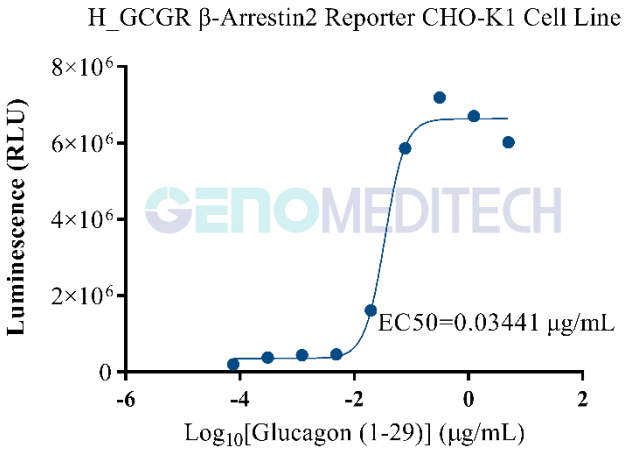
Quantity	5E6 Cells per vial,1 mL
Product Format	1 vial of frozen cells
Shipping	Shipped on dry ice
Storage Conditions	Liquid nitrogen immediately upon receipt
Recovery Medium	F12K+10% FBS+1% P.S
Growth medium	F12K+10% FBS+1% P.S+2 μg/mL Puromycin
Note	None
Freezing Medium	90% FBS+10% DMSO
Growth properties	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
Puromycin	Genomeditech/GM-040401
96-well U-bottom Plate	Saining/1014010
96-well Flat Clear Bottom White Polystyrene TC-treated Microplates	Corning/3903
Glucagon (1-29), bovine, human	MCE/HY-P0082
Anti-H_GCGR hIgG2 Antibody(volagidemab)	Genomeditech/GM-84555AB
Nano-Glo®Live Cell Assay System	Promega/N2012
Countess 3 Automated Cell Counter	ThermoFisher/A49891
SpectraMax® L Microplate Luminometer	Moleculardevices/SpectraMax L

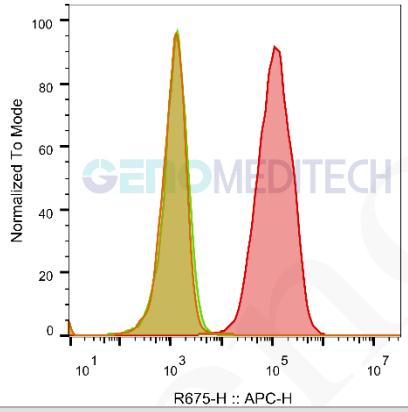
Data

Signaling Pathway



Response to Glucagon (1-29), bovine, human. H_GCGR β-Arrestin2 Reporter CHO-K1 Cell Line (Cat. GM-C44432) was seeded at a density of 1E4 cells per well in a 96-well plate and incubated overnight. The next day, serial dilutions of the Glucagon (1-29), bovine, human (MCE/HY-P0082) were added to the pre-seeded cells. The mixture was incubated for an additional 1.5 hours. The NanoLuc® luciferase activity was measured using the Nano-Glo®Live Cell Assay System (Promega/N2012). The maximum induction fold was approximately [22.4]. Data are shown by drug mass concentration.

Expression



SampleID	Geometric Mean : R675-H
CHO-K1 Anti-H_GCGR+APC 2nd Ab	1137
H_GCGR β-Arrestin2 Reporter CHO-K1 Anti-H_IgG+APC 2nd Ab	1186
H_GCGR β-Arrestin2 Reporter CHO-K1 Anti-H_GCGR+APC 2nd Ab	106300

H_GCGR β-Arrestin2 Reporter CHO-K1 Cell Line (Cat. GM-C44432) was determined by flow cytometry using Anti-H_GCGR hIgG2 Antibody(volagidemab) (Cat. GM-84555AB).

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+2 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)	
Human GCGR(26-136) Protein; hFc Tag	Human GCGR(26-136) Protein; His Tag
GLP1R	
H_GLP1R GIPR GCGR Triple Reporter 293 Cell Line	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	Mouse_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	H_GIPR β-Arrestin2 Reporter CHO-K1 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
GDF8 Pro-Latent Activation Reporter 293 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 (Apitbio)	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 RAMP1(AMY1) Reporter CHO-K1 Cell Line	H_CALCR RAMP2(AMY2) Reporter CHO-K1 Cell Line
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
H_GLP1R CALCR RAMP3(AMY3) 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
THRB	
H_THRα Reporter HEK-293 Cell Line	H_THRβ Reporter HEK-293 Cell Line
MC4R	
H_MC4R Reporter HEK-293 Cell Line	
GLP2R	
H_GLP2R Reporter 293 Cell Line	H_GLP2R HEK-293 Cell Line
ASGR1	
Cynomolgus_ASGR1 CHO-K1 Cell Line	H_ASGR1 CHO-K1 Cell Line
H_ASGR1 HEK-293 Cell Line	
Anti-ASGR1 hIgG1 Antibody(4A2.001)	
Cynomolgus ASGR1 Protein; hFc Tag	Cynomolgus ASGR1 Protein; His Tag
Human ASGR1 Protein; hFc Tag	Human ASGR1 Protein; His Tag
Mouse ASGR1 Protein; His Tag	

License Agreement

By purchasing and using this cell line product, the user voluntarily agrees to accept and abide by the following policies:

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