

Human GLP-1R (Luc) HEK293 Reporter Cell Data Sheet

➤ *Limited Use & License Disclosure*

BY USE OF THIS PRODUCT, RESEARCHER AGREES TO BE BOUND BY THE FOLLOWING TERMS OF LIMITED USE OF THIS CELL LINE PRODUCT.

- If the researcher is not willing to accept the terms of limited use of this cell line product, and the product is unused, ACRO will accept return of the unused product.
- Researchers may use this product for research use only, no commercial use is allowed. "Commercial use" means any and all uses of this product and derivatives by a party for profit or other consideration and may include but is not limited to use in: (1) product manufacture; and (2) to provide a service, information or data; and/or resale of the product or its derivatives, whether or not such product or derivatives are resold for use in research.
- This cell line is neither intended for any animal or human therapeutic purposes nor for any direct human in vivo use. You have no right to share, modify, transfer, distribute, sell, sublicense, or otherwise make the cell line available for use to other researchers, laboratories, research institutions, hospitals, universities, or service organizations.
- ACROBIOSYSTEMS MAKES NO WARRANTIES OR REPRESENTATIONS OF ANY KIND, EITHER EXPRESSED OR IMPLIED, WITH RESPECT TO THE SUITABILITY OF THE CELL LINE FOR ANY PARTICULAR USE.
- ACROBIOSYSTEMS ACCEPTS NO LIABILITY IN CONNECTION WITH THE HANDLING OR USE OF THE CELL LINE.
- Modifications of the cell line, transfer to a third party, or commercial use of the cell line may require a separate license and additional fees. Please contact order.cn@acrobiosystems.com for further details.

Human GLP-1R (Luc) HEK293 Reporter Cell Data Sheet

Human GLP-1R (Luc) HEK293 Reporter Cell

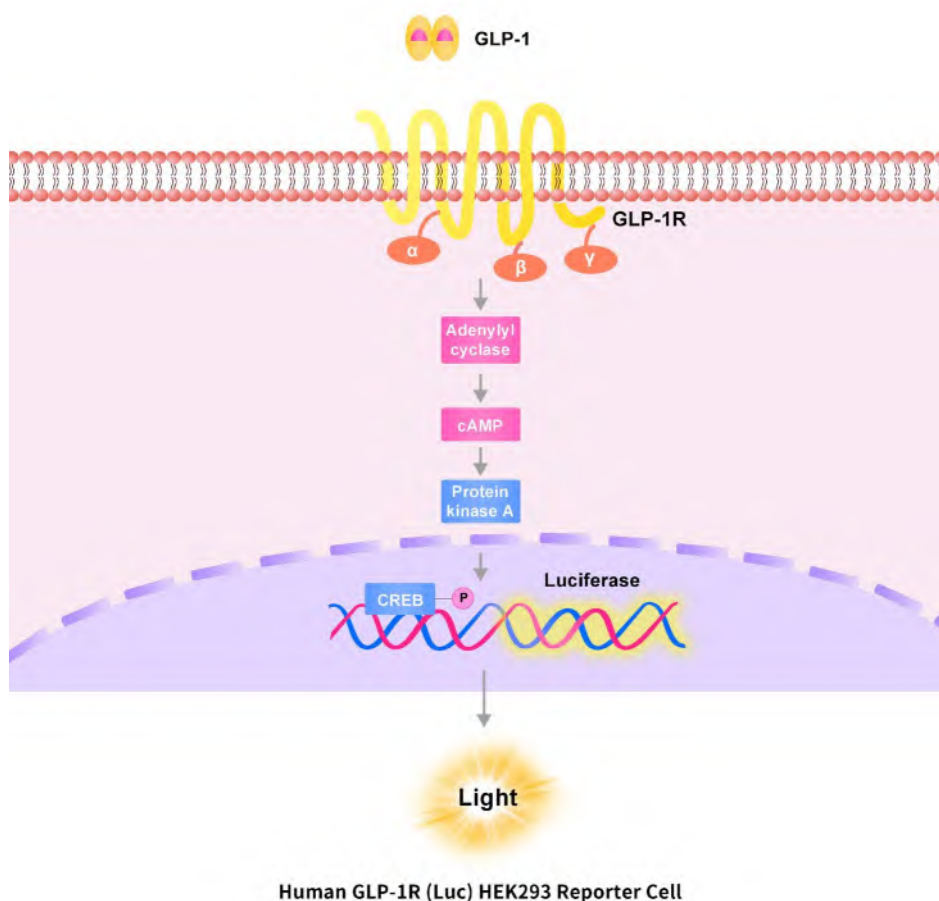
Catalog No.	Size
CHEK-ATF096	2 × (1 vial contains ~5×10 ⁶ cells)

• Description

The Human GLP-1R (Luc) HEK293 Reporter Cell was engineered to not only express CREB signaling response element, but also express the receptor full length human GLP-1R (Uniprot: P43220), which can drive luciferase expressing systems by GLP-1R agonists or glucagon-like peptide 1 (GLP-1) stimulation. In the absence of agonist or GLP-1, the GLP-1R receptor is not activated and luminescence signal is low. In the presence of agonist or GLP-1, the GLP-1R pathway-activated luminescence can be detected in a dose-dependent manner.

• Application

- Screen for agonists that can bind and activate GLP-1R.



Human GLP-1R (Luc) HEK293 Reporter Cell Data Sheet

• Cell Line Profile

Cell line	Human GLP-1R (Luc) HEK293 Reporter Cell
Host Cell	HEK293
Property	Adherent
Complete Growth Medium	DMEM + 10% FBS
Selection Marker	Puromycin (2 µg/mL) + Hygromycin B (20 µg/mL)
Incubation	37°C with 5% CO ₂
Doubling Time	22-24 hours
Transduction Technique	Lentivirus

• Materials Required for Cell Culture

- DMEM Medium (BasalMedia, Cat. No. L120KJ)

Note: If you are unable to obtain the specified DMEM medium (BasalMedia, Cat. No. L120KJ) in China, you may use an alternative DMEM medium (Gibco, Cat. No. 11965-092) or another suitable medium for culturing.

- Fetal bovine serum (CellMax, Cat. No. SA211.02)
- Puromycin (InvivoGen, Cat. No. ant-pr-5b)
- Hygromycin B (Invitrogen, Cat. No. 10687010)

Note: For selection antibiotics, we highly recommend using the specified brand. The activity of antibiotics may vary between manufacturers, so if you choose to use a different brand, it is essential to validate whether the concentration recommended in the culture medium is suitable. Regardless of the brand used, we recommend maintaining a backup culture without selection antibiotics to avoid potential cell loss due to inappropriate antibiotic concentration.

- 0.25% Trypsin-EDTA (1X), Phenol Red (Gibco, Cat. No. 25200-056)
- Penicillin-Streptomycin (Gibco, Cat. No. 15140-122)
- Phosphate Buffered Saline (1X) (HyClone, Cat. No. SH30256.01)
- Complete Growth Medium: DMEM + 10% FBS, 1%P/S
- Culture Medium: DMEM + 10% FBS, Puromycin (2 µg/mL), Hygromycin B (20 µg/mL), 1%P/S
- Freeze Medium: 90% FBS, 10% (V/V) DMSO
- T-75 Culture flask (Corning, Cat. No. 430641)
- Cryogenic storage vials (SARSTEDT, Cat. No. 72.379.007)
- Thermostat water bath
- Centrifuge (Cence, Model: L550)
- Cell counter (MONWEI, Model: SmartCell200A Plus)
- CO₂ Incubator (Thermo, Model: 3111)
- Biological Safety Cabinet (Thermo, Model: 1389)

Human GLP-1R (Luc) HEK293 Reporter Cell Data Sheet

• *Recovery*

1. Thaw the vial by gently agitating it in a 37°C water bath. To minimize the risk of contamination, ensure the cap remains out of the water. Thawing should be completed quickly, typically within 3-5 minutes.
2. After thawing, promptly remove the vial from the water bath and decontaminate it by spraying with 70% ethanol. From this point onward, all operations must be performed under strict aseptic conditions.
3. Transfer the contents of the vial to a centrifuge tube containing 4.0 mL of complete growth medium. Centrifuge at approximately 1000 rpm for 5 minutes.
4. Resuspend the cell pellet with 5 mL **complete growth medium** and transfer the cell suspension into a T-75 flask containing 10-15 mL of pre-warmed **complete growth medium**.
5. Incubate at 37°C with 5% CO₂ incubator until the cells are ready to be split.

• *Subculture*

1. Cell viability may be low after thawing, and full recovery may take up to a week. Monitor the cells daily until the culture reaches 80-90% confluency. At this point, remove and discard the spent medium. Avoid allowing the cells to become over-confluent to ensure optimal cell health.
2. Wash the cells once with sterile PBS. Avoid adding PBS directly onto the cell surface.
3. Add 2 mL of 0.25% Trypsin-EDTA to the T-75 flask. Place the flask at 37°C for 2-3 minutes, until 90% of the cells have detached. Monitor under a microscope to avoid over-trypsinization.
4. Add 6.0 to 8.0 mL of **culture medium** using a pipette and gently rinse the cells from the surface of the T-75 flask. Gently pipette up and down several times to achieve a single cell suspension without cell clumps.
5. Transfer appropriate aliquots of the cell suspension to a new T-75 flask. A subcultivation ratio of 1:4 to 1:8 is recommended. Adjust the ratio based on your specific culture system.
6. Incubate at 37°C with 5% CO₂ incubator.
7. When the cell culture reaches 80-90% confluency, proceed to the next subculture. Avoid over-confluency, as this may negatively impact cell performance in subsequent passages.

Note: After recovery, maintain the cells for 1-2 passages in the complete growth medium not containing the selection marker, if the cells are in good condition, transition to the culture medium containing the selection marker during subculturing.

Human GLP-1R (Luc) HEK293 Reporter Cell Data Sheet

• *Cryopreservation*

1. When the cell culture reaches 80-90% confluency, remove and discard the spent medium.
2. Wash the cells once with sterile PBS. Avoid adding PBS directly onto the cell surface.
3. Add 2 mL of 0.25% Trypsin-EDTA to the T-75 flask. Place the flask at 37°C for 2-3 minutes, until 90% of the cells have detached. Monitor under a microscope to avoid over-trypsinization.
4. Add 6.0 to 8.0 mL of complete growth medium using a pipette and gently rinse the cells from the surface of the T-75 flask. Gently pipette up and down several times to achieve a single cell suspension without cell clumps. Count the viable cells.
5. Transfer the cell suspension to a centrifuge tube. Centrifuge at 1000 rpm for 5 min at room temperature to pellet the cells.
6. After centrifugation, discard the supernatant. Resuspend the cells in ice cold freezing medium to a concentration of 5×10^6 to 1×10^7 cells/mL.
7. Aliquot the cell suspension into cryogenic storage vials. Place the vials in a programmable cooler or an insulated box placed in a -80°C freezer overnight, then transfer to liquid nitrogen storage for long-term storage.

Note: It is recommended to establish a cell bank at the earliest possible passage for long-term use.

• *Storage Condition*

Cells must be received in a frozen state on dry ice and should be transferred to liquid nitrogen or a -80°C freezer immediately upon receipt. If stored in a -80°C freezer, it is recommended to limit the storage period to no more than two weeks. For long-term preservation, transfer the cells to liquid nitrogen is highly recommended.

Human GLP-1R (Luc) HEK293 Reporter Cell Data Sheet

• *Receptor Assay*

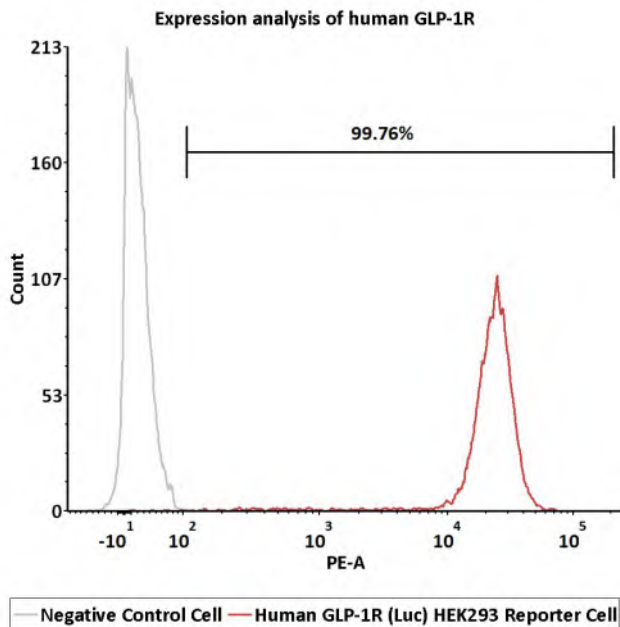


Fig1. Expression analysis of human GLP-1R on Human GLP-1R (Luc) HEK293 Reporter Cell by FACS. Cell surface staining was performed on Human GLP-1R (Luc) HEK293 Reporter Cell or negative control cell using PE-labeled anti-human GLP-1R antibody.

• *Signaling Bioassay*

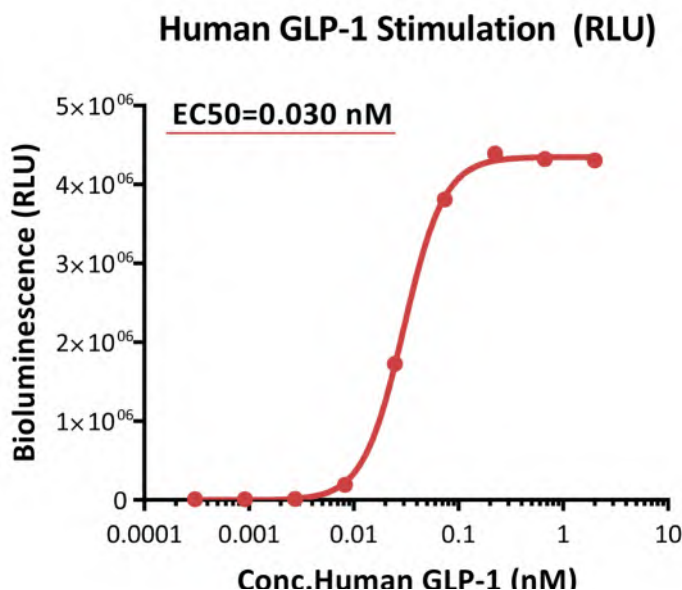


Fig2. Response to human GLP-1 (RLU). This reporter cell was stimulated with serial dilutions of human GLP-1. The EC50 was approximately 0.030 nM.

Human GLP-1R (Luc) HEK293 Reporter Cell Data Sheet

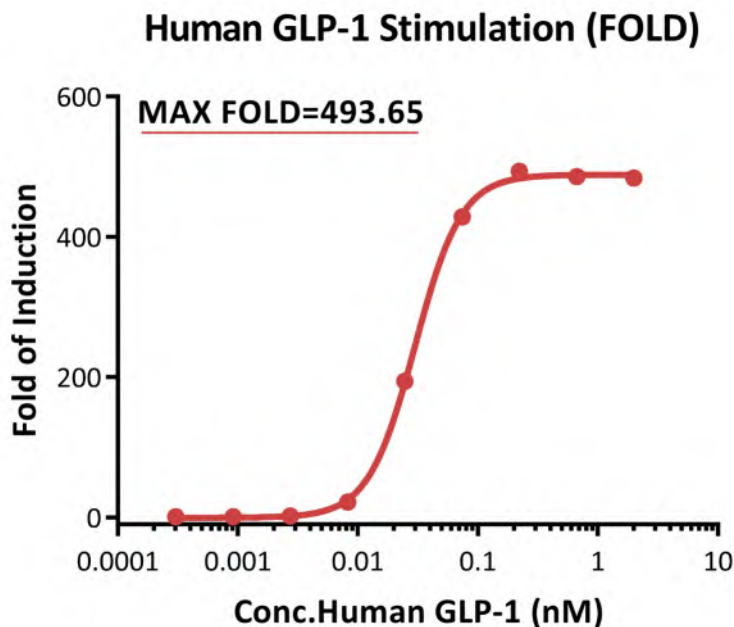


Fig3. Response to human GLP-1 (FOLD). This reporter cell was stimulated with serial dilutions of human GLP-1. The max induction fold was approximately 493.65.

• **Application**

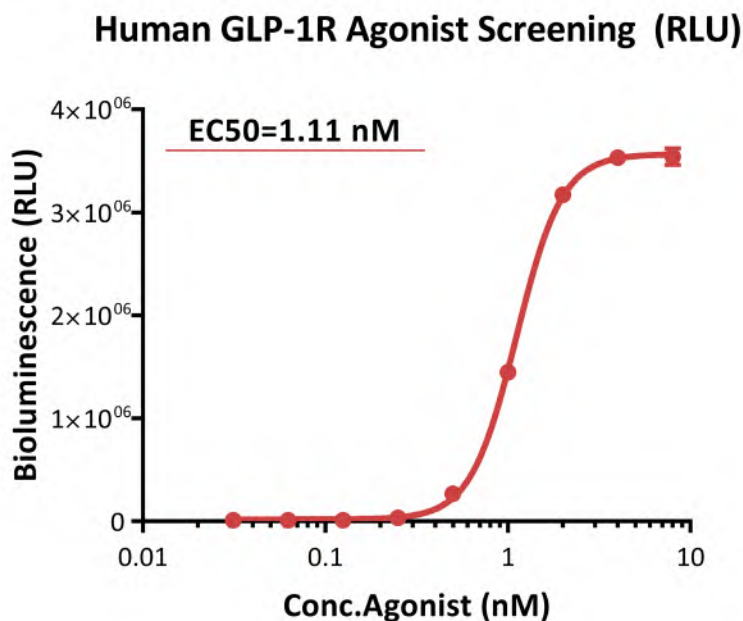


Fig4. Bioactivity analysis of human GLP-1R agonist (RLU). This reporter cell was incubated with serial dilutions of Tirzepatide (a dual GLP-1R and GIPR agonist). The EC₅₀ of Tirzepatide was approximately 1.11 nM.

Human GLP-1R (Luc) HEK293 Reporter Cell Data Sheet

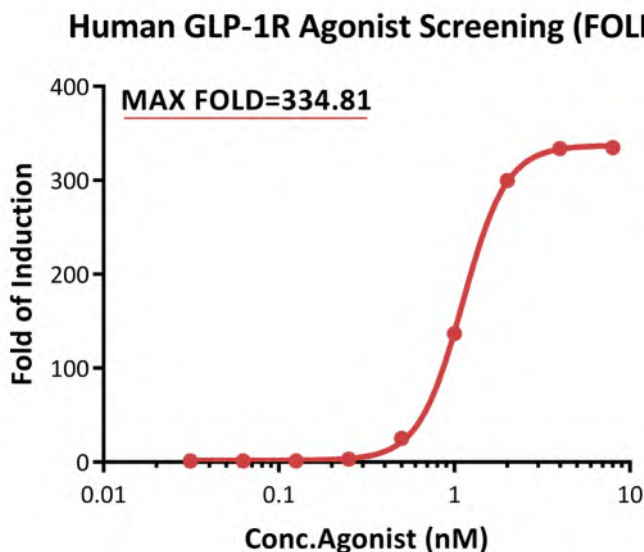
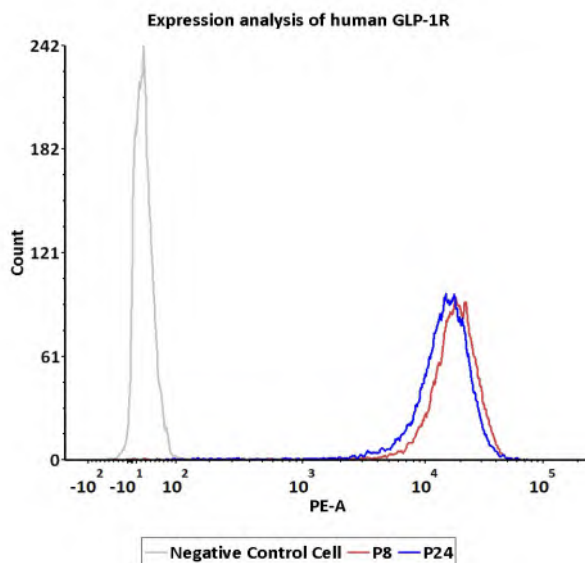


Fig5. Bioactivity analysis of human GLP-1R agonist (FOLD). This reporter cell was incubated with serial dilutions of Tirzepatide (a dual GLP-1R and GIPR agonist). The max induction fold was approximately 334.81.

• *Passage Stability*



Passage	MFI for GLP-1R (PE)
P8	17421
P24	14536

Fig6. Passage stability analysis of receptor expression by FACS. Flow cytometry surface staining of human GLP-1R on Human GLP-1R (Luc) HEK293 Reporter Cell demonstrates consistent mean fluorescent intensity across passage 8-24.

Human GLP-1R (Luc) HEK293 Reporter Cell Data Sheet

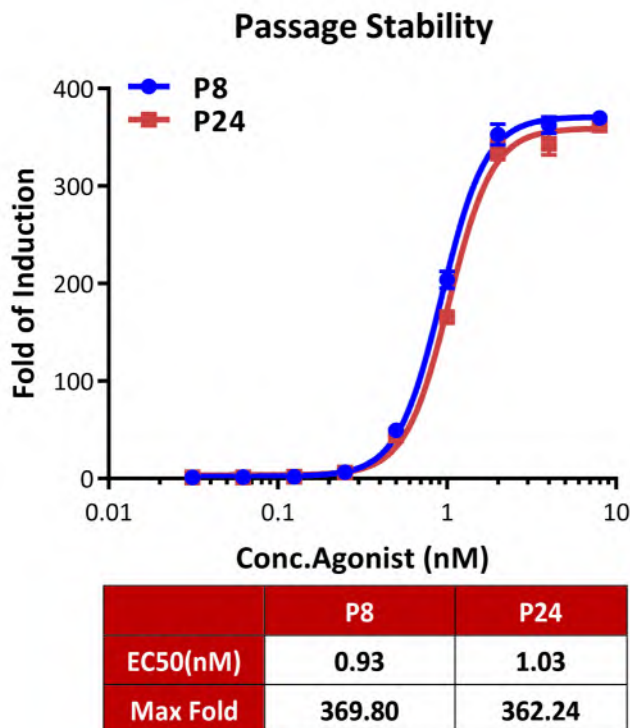


Fig7. Passage stability analysis by Signaling Bioassay. The continuously growing Human GLP-1R (Luc) HEK293 Reporter Cell was stimulated with serial dilutions of Tirzepatide (a dual GLP-1R and GIPR agonist). Tirzepatide stimulated response demonstrates passage stabilization (fold induction and EC50) across passage 8-24.

Human GLP-1R (Luc) HEK293 Reporter Cell Data Sheet

• *Related Products*

<u>Products</u>	<u>Cat.No.</u>
Human GCGR (Luc) HEK293 Reporter Cell	CHEK-ATF103
Human GIPR (Luc) HEK293 Reporter Cell	CHEK-ATF104
HEK293/Human GLP-1R Stable Cell Line (High Expression)	CHEK-ATP160
HEK293/Human GLP-1R Stable Cell Line (Medium Expression)	CHEK-ATP161
HEK293/Human GLP-1R Stable Cell Line (Low Expression)	CHEK-ATP162
Human FGF-21 (Luc) HEK293 Reporter Cell	CHEK-ATF163
Human Activin RII (Luc) HEK293 Reporter Cell	CHEK-ATF164
HEK293/Human GPR75 Stable Cell Line	CHEK-ATP174
Human THRA (Luc) HEK293 Reporter Cell	CHEK-ATF180
Human THRB (Luc) HEK293 Reporter Cell	CHEK-ATF181
HEK293/Human GLP-1R&GIPR Stable Cell Line	CHEK-ATP205
HEK293/Human GIPR Stable Cell Line (High Expression)	CHEK-ATP206
HEK293/Human GIPR Stable Cell Line (Medium Expression)	CHEK-ATP207
HEK293/Human GIPR Stable Cell Line (Low Expression)	CHEK-ATP208
HEK293/Human GCGR Stable Cell Line (High Expression)	CHEK-ATP209
HEK293/Human GCGR Stable Cell Line (Medium Expression)	CHEK-ATP210
HEK293/Human GCGR Stable Cell Line (Low Expression)	CHEK-ATP211
HEK293/Human ASGR1&ASGR2 Stable Cell Line	CHEK-ATP172
HEK293/Human ASGR1 Stable Cell Line	CHEK-ATP080
HEK293/Human LDL R Stable Cell Line	CHEK-ATP158