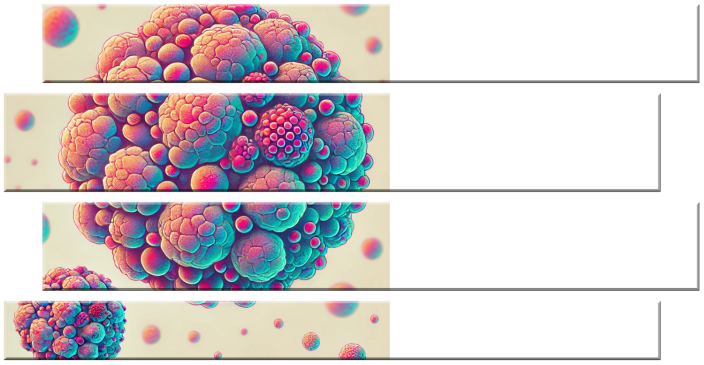

TriDix Bio
INNOVATING DRUG DISCOVERY

PRODUCT DATA SHEET

HEK293 GLP1R β-Arrestin Cell Line

SKU: TDC-S1501

Product Details

Product Description: Recombinant HEK293 cells stably overexpress human glucagon-like peptide-1 (GLP1R) tagged with smBit on the surface and β-Arrestin tagged with Lgbit.

Catalog Number: TDC-S1501

Source: Genetically engineered HEK293 derivative from single clone

Package Size: Two vials of frozen cells (>1×10^6 per vial in 1 mL)

Stability: Stable through more than 15 passages with no significant changes in assay performance or expression profile.

Culture Properties: Adherent

Associated Media: GPCR cell line culture medium kit (Cat.# TDM-1017K) containing basal media and supplements

Storage Conditions & Shipment

Product Format/Shipped: Cryopreserved / Dry ice

Storage: Liquid Nitrogen

Safety Precaution

PLEASE READ BEFORE HANDLING ANY FROZEN VIALS. *Please wear appropriate Personal Protection Equipment (lab coat, thermal gloves, safety goggles and a face shield) when handling*

Description

The HEK293 GLP1R β-Arrestin Cell Line is a genetically engineered human cell line designed to measure ligand-induced recruitment of β-arrestin to the glucagon-like peptide-1 receptor b(GLP1R).

The cell line generated at TridixBio contains GLP1R tagged with a small luciferase subunit (SmBiT) and β-arrestin fused to a large luciferase subunit (LgBiT). Upon GLP1 ligand engagement, receptor activation drives β-arrestin recruitment, bringing SmBiT and LgBiT into proximity to reconstitute an active luciferase enzyme. In the presence of a substrate such as Furimazine, this interaction generates a robust luminescent signal, allowing reproducible quantification of ligand-dependent arrestin recruitment in live cells.

This stable expression system provides a robust and reproducible platform for studying GLP1R signaling and for screening small molecules, peptides, or biologics targeting this clinically relevant GPCR.

Product Data

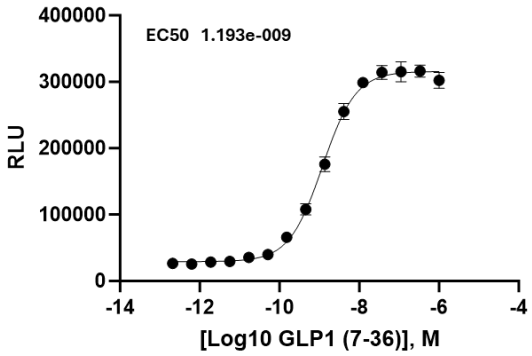

Figure 1 Dose-dependent activation of GLP1R in the HEK293 GLP1R β-arrestin stable cell line. Cells were stimulated with increasing concentrations of GLP1 ligand, and β-arrestin recruitment was quantified by luminescence readout. Data show a robust, ligand-dependent signal more than a 10-fold signal-to-basal ratio.

Applications

- Characterization of GLP1R agonists and antagonists
- Screening of novel compounds in drug discovery programs
- Mechanistic studies of GLP1R signaling via β-arrestin pathway
- Comparative pharmacology and potency ranking of GLP1R-targeting molecules

Key Features:

- **Stable engineered system:** Derived from HEK293 cells with integrated GLP1R and β-arrestin reporter components for consistent performance across passages.
- **High sensitivity:** Enables detection of ligand-induced GLP1R activation with strong signal-to-background ratio (>10 folders).
- **Assay flexibility:** Suitable for high-throughput screening, dose-response studies, and mechanism-of-action analyses.
- **Validated performance:** Demonstrated responsiveness to GLP1 and GLP1R agonists with reproducible β-arrestin recruitment.
- **Cost-efficient and rapid assay workflow:** Assay setup material costs as little as $40 per 384-well plate with a total turnaround time of under 2 hours from stimulation to readout.
- **Ready-to-use format:** Cells are shipped as cryopreserved vials with supporting protocols for thawing, culture, and assay setup.

Protocols:

Thawing HEK293 GLP1R β-Arrestin Cell

Procedures:

1. Add 30ml of GPCR cell culture supplement (Cat.# TDM-1017A) into GPCR cell line base medium (Cat.# TDM-1017).
2. Remove cells from small liquid nitrogen dewar
3. Thaw in water bath at 37°C for 30sec to 1 min.
4. Pour whole tube in 15mL Falcon tube containing 10ml of GPCR cell culture medium.
5. Spin down at 200g at room temperature for 10min.
6. Aspirate media and add 25mL medium to resuspend pellet. Pipette up and down. Make sure cells disperse well.
7. Add 12mL into each new flask (e.g. 10cm dish or T75 flask)
8. Put the vessels in 37°C 5% CO2 incubator

Subculturing of HEK293 GLP1R β-Arrestin Cell

Procedures:

1. Aspirate old media on top of cell monolayer
2. Add 5mL Ca2+/Mg2+-free Dulbecco's phosphate buffered saline (DPBS) to wash/rinse cells.
3. Aspirate DPBS and add 2mL Trypsin-EDTA solution. Leave in incubator 2-5min until cell layer is dispersed.
4. Remove plate from incubator and add 8mL supplemented cell culture medium to the flask.
5. Gently pipette up and down 5-8 times to get single cells.
6. Make a 1:5 or 1:3 dilutions and then put in 37oC, 5% CO2 incubator

Subculturing of HEK293 GLP1R β-Arrestin Cell

Procedures:

1. Culture the desired quantity of HEK293 GLP1R β-Arrestin cells to 70-90% confluency
2. Remove the cells from the tissue culture flasks by washing with DPBS, adding 2mL trypsin,
3. adding 8mL media to stop the reaction, then transferring to a 15mL tube.
4. Centrifuge the cell suspension at 200 x g for 10 min at room temp.
5. Aspirate the medium and re-suspend pellet in the pre-determined volume of chilled freezing medium.
6. Determine viable and total cell counts and calculate volume of freezing medium required to
7. yield a final cell density of > 3 Million viable cells/mL
8. Dispense aliquots of this suspension into cryovials
9. Freeze cells in an automated, control-rate freezing apparatus or using a manual method
10. following standard procedures.
11. Transfer vials to liquid nitrogen storage the next morning.