

# Product Sheet

## Rat\_TSHR HEK-293 Cell Line

Catalog number: GM-C39977

Version 3.3.1.251030

|                              |                                                                                                                                                           |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Description</b>           | Rat_TSHR HEK-293 Cell Line is a clonal stable HEK-293 cell line that constitutively expresses the rat TSHR gene, constructed using lentiviral technology. |
| <b>Quantity</b>              | 5E6 Cells per vial, 1 mL                                                                                                                                  |
| <b>Product Format</b>        | 1 vial of frozen cells                                                                                                                                    |
| <b>Shipping</b>              | Shipped on dry ice                                                                                                                                        |
| <b>Storage Conditions</b>    | Liquid nitrogen immediately upon receipt                                                                                                                  |
| <b>Target</b>                | Rat_TSHR                                                                                                                                                  |
| <b>Gene ID/Uniprot ID</b>    | P21463                                                                                                                                                    |
| <b>Host Cell</b>             | HEK-293                                                                                                                                                   |
| <b>Recovery Medium</b>       | DMEM+10% FBS+1% P.S                                                                                                                                       |
| <b>Growth medium</b>         | DMEM+10% FBS+1% P.S+0.75 µg/mL Puromycin                                                                                                                  |
| <b>Note</b>                  | None                                                                                                                                                      |
| <b>Freezing Medium</b>       | 90% FBS+10% DMSO                                                                                                                                          |
| <b>Growth properties</b>     | Adherent                                                                                                                                                  |
| <b>Growth Conditions</b>     | 37°C, 5% CO <sub>2</sub>                                                                                                                                  |
| <b>Mycoplasma Testing</b>    | The cell line has been screened to confirm the absence of Mycoplasma species.                                                                             |
| <b>Safety considerations</b> | Biosafety Level 2                                                                                                                                         |
| <b>Note</b>                  | 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.               |
|----------------------------------|------------------------------------------|
| DMEM                             | Gibco/C11995500BT                        |
| Fetal Bovine Serum               | ExCell/FSP500                            |
| Pen/Strep                        | Thermo/15140-122                         |
| Puromycin                        | Genomeditech/ <a href="#">GM-040401</a>  |
| Anti-TSHR mIgG2a Antibody(KSAb2) | Genomeditech/ <a href="#">GM-87935AB</a> |
| Recombinant Human TSH            | Novoprotein/DRA17                        |

## Figures

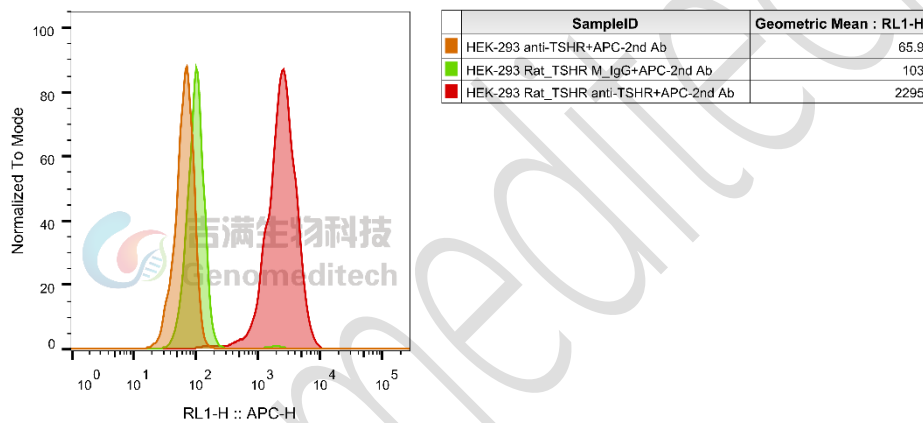


Figure 1 | Rat\_TSHR HEK-293 Cell Line (Cat. GM-C39977) was determined by flow cytometry using Anti-TSHR mIgG2a Antibody(KSAb2) (Cat. [GM-87935AB](#)).

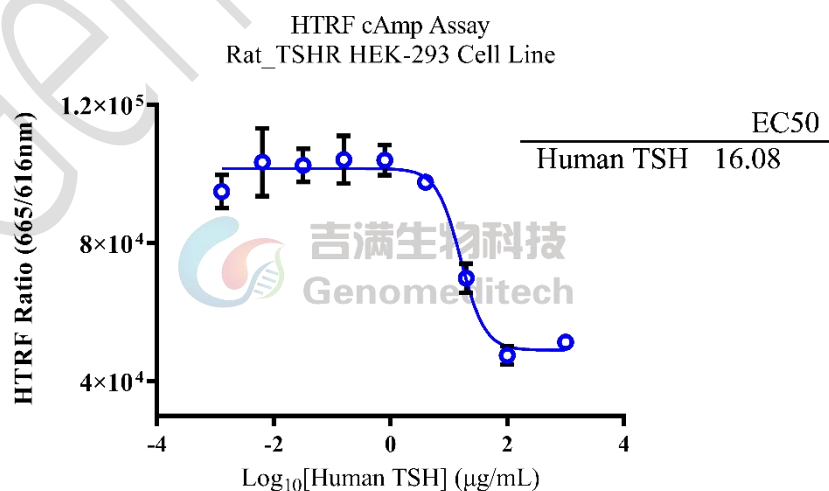


Figure 2 | Rat\_TSHR HEK-293 cells were seeded at a density of 7500 cells per well in white 384-well microplates (5 µl per well). Gradient-diluted Human TSH solutions were then added, and the cells were incubat

ed at room temperature for 30 minutes. The HTRF Camp Gs Dynamic Detection Kit (Revvity, Cat. No. 62AM4PE B) 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  $\times$  100,000 (HTRF Ratio) and used to calculate the EC50 value.

## 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.
- Incubate the culture at 37°C in a suitable incubator. A 5% CO<sub>2</sub> 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+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.

## Sequence

TSHR [P21463](#)

MRPGSLLQLTLLLALPRSLWGRGCTSPPECHQEDDFRVTCKELHQIPSLPPSTQTLKLIETHLKTIPSLAFSSLP  
NISRIYLSIDATLQRLEPHSFYNLSKMTHEIRNTRSLTYIDPDALTELPLLKFLGIFNTGLRIFPDLTKIYSTDVFF  
ILEITDNPYMTSVPENAFQGLCNETLTLKLYNNGFTSIQGHAFNGTKLDAVYLNKNKYLTAKDKDAFGGVYS  
GPTLLDVSSTSVTALPSKGLEHLKELIAKNTWTLKKLPLSLSFLHLTRADLSYPHCCAFKNQKKIRGILESLM  
CNESSIRNLRQRKSVNVMRGPVYQYEEGLGDNHVGYKQNSKFQEGPSNSHYVVFEEQEDEIIGFGQELKN  
PQEETLQAFDSHYDYTVCGDNEDMVCTPKSDEFNPDCEIMGYKFLRIVVWFVSPMALLGNVFLVFLVLLTSHY  
KLTVPRLMCNLAFAFCMGVYLLLIASVDLYTHTEYYNHAIWQGTGPGCNTAGFFTVFASLSVYTLTVIT  
LERWYAITFAMRLDRKIRLRHAYTIMAGGWVSCFLALLPMVGISYAKVSICLPMDTDTPLALAYIALVLLL  
NVVAFVIVCSCYVKIYITVRNPQYNPRDKDTKIAKRMAVLIFTDFMCMAPISFYALSALMNKPLITVTNSGV  
LVLFPYPLNSCANPFLYAIFTKAFQRDVFILLSKFLCKHQAQYQAQRVCPNNNTGIQIQKIPQDTRQSLPNVQ  
DTYEPLGSSHLTPKLQGRISEEYTQTAL

## Related Products

| TSHR                                             |                                                   |
|--------------------------------------------------|---------------------------------------------------|
| <a href="#">H_TSHR Reporter CHO-K1 Cell Line</a> | <a href="#">Cynomolgus_TSHR HEK-293 Cell Line</a> |
| <a href="#">H_TSHR CHO-K1 Cell Line</a>          | <a href="#">H_TSHR HEK-293 Cell Line</a>          |
| <a href="#">Mouse_TSHR HEK-293 Cell Line</a>     |                                                   |
| <a href="#">Anti-TSHR mIgG2a Antibody(KSAb2)</a> |                                                   |

## License Agreement:

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

- This cell line product is restricted to research use only and shall not be used for any commercial purposes.
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