

Product Sheet

H_IL2 Reporter Cell Line

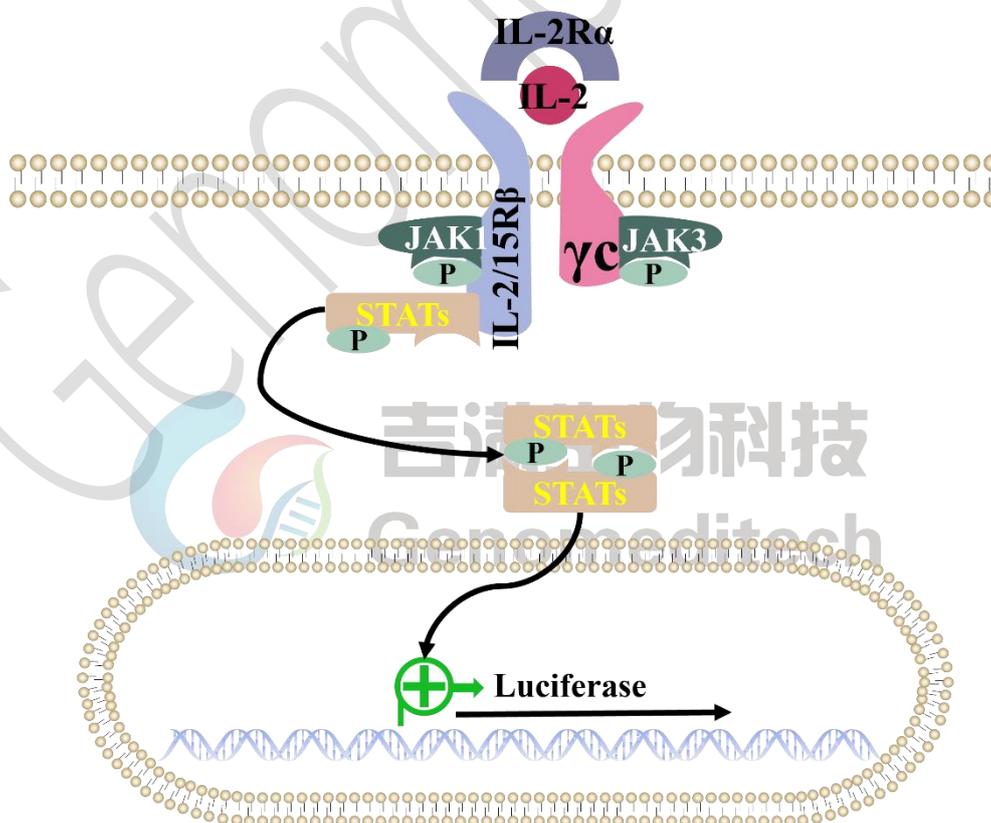
Catalog number: GM-C16846

Version 3.3.1.241213

Interleukin-2 (IL-2) is an important cytokine that mainly plays a regulatory role in the immune system. It works by binding to IL-2 receptors on the surface of lymphocytes, activating a series of signaling pathways that influence the proliferation and activity of immune cells.

The IL-2 receptor is made up of three chains: IL-2R α , IL-2R β , and IL-2R γ , which exist as a heterotrimer. When IL-2 binds to its receptor, it activates the JAK signaling pathway, which in turn activates the transcription factor STAT. The phosphorylated STATs form dimers or tetramers and move into the cell nucleus, regulating the expression of specific genes to promote the immune response.

H_IL2 Reporter Cell Line is a clonal stable cell line constructed using lentiviral technology, constitutive expression of the IL-2R β gene, and it endogenously expresses IL-2R α and IL-2R γ , along with signal-dependent expression of a luciferase reporter gene. When IL-2 binds to IL-2R, it activates downstream signaling pathways, leading to the expression of luciferase. The luciferase activity measurement indicates the activation level of the signaling pathway and can thus be used to evaluate the in vitro effects of drugs related to IL-2.



Specifications

| | |
|------------------------------|--|
| Quantity | 3E6 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 | RPMI 1640+10% FBS+1% P.S+ 2 ng/mL GM-CSF |
| Growth medium | RPMI 1640+10% FBS+1% P.S+2 ng/mL GM-CSF+3 µg/mL Blasticidin+0.25 µg/mL Puromycin |
| Note | None |
| Freezing Medium | 90% FBS+10% DMSO |
| Growth properties | Suspension |
| 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. |
|---|---|
| RPMI 1640 | gibco/C11875500BT |
| Fetal Bovine Serum | Cegrogen biotech/A0500-3010 |
| Pen/Strep | Thermo/15140-122 |
| Recombinant Human GM-CSF | Novoprotein/C003 |
| Blasticidin | Genomeditech/ GM-040404 |
| Puromycin | Genomeditech/ GM-040401 |
| Recombinant Human IL-2 | Novoprotein/C013 |
| GMOne-Step Luciferase Reporter Gene Assay Kit | Genomeditech/ GM-040503 |

Figures

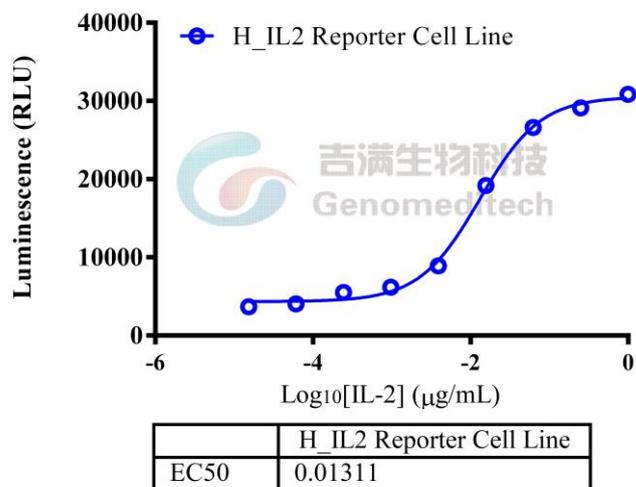


Figure 1 | Response to Recombinant Human IL-2. The H_IL2 Reporter Cell Line (Cat. GM-C16846) at a concentration of 1E5 cells/well (96-well format) was stimulated with serial dilutions of Recombinant Human IL-2 (Novoprotein/C013) in assay buffer (RPMI 1640 + 1% FBS + 1%P.S) for 16 hours. The firefly luciferase activity was measured using the GMOne-Step Luciferase Reporter Gene Assay Kit (Cat. GM-040503). The maximum induction fold was approximately [10.2]. Data are shown by drug mass concentration.

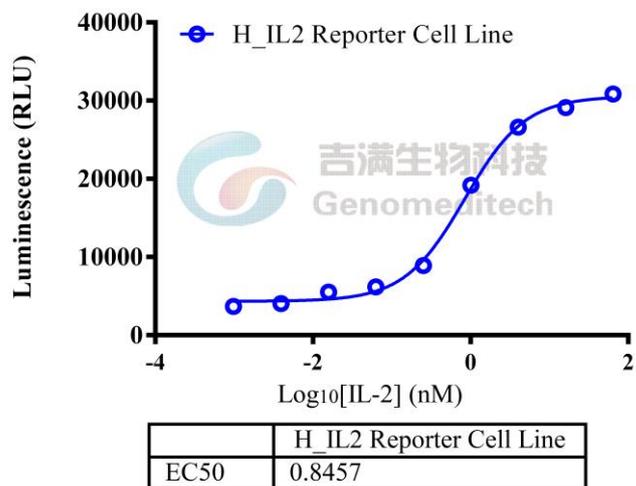


Figure 2 | Response to Recombinant Human IL-2. The H_IL2 Reporter Cell Line (Cat. GM-C16846) at a concentration of 1E5 cells/well (96-well format) was stimulated with serial dilutions of Recombinant Human IL-2 (Novoprotein/C013) in assay buffer (RPMI 1640 + 1% FBS + 1%P.S) for 16 hours. The firefly luciferase activity was measured using the GMOne-Step Luciferase Reporter Gene Assay Kit (Cat. GM-040503). The maximum induction fold was approximately [10.2]. Data are shown by drug molar concentration.

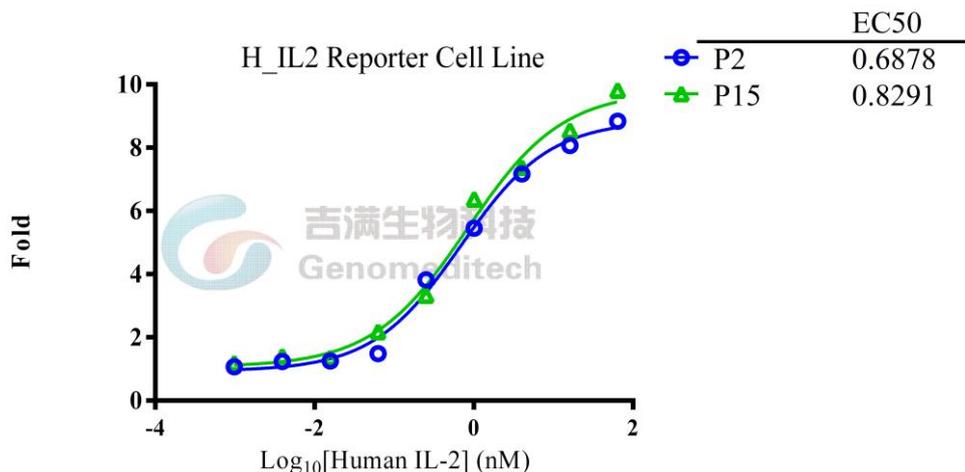


Figure 3 | The passage stability of response to Recombinant Human IL-2. The passage 2 and 15 of H_IL2 Reporter Cell Line (Cat. GM-C16846) at a concentration of 1E5 cells/well (96-well format) was stimulated with serial dilutions of Recombinant Human IL-2 (Novoprotein/C013) in assay buffer (RPMI 1640 + 1% FBS + 1%P.S) for 16 hours. The firefly luciferase activity was measured using the GMOne-Step Luciferase Reporter Gene Assay Kit (Cat. GM-040503). Data are shown by drug mass concentration.

Cell Recovery

Recovery Medium: RPMI 1640+10% FBS+1% P.S+ 2 ng/mL GM-CSF

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 the cell pellet using the recommended complete medium and adjust the viable cell density to 4-6E5 cells/mL. Then dispense the suspension into an appropriate culture flask and initially place the flask in an upright position after thawing.
- Incubate the culture at 37°C in a suitable incubator. A 5% CO₂ 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 3E6 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: RPMI 1640+10% FBS+1% P.S+2 ng/mL GM-CSF+3 µg/mL Blasticidin+0.25 µg/mL Puromycin

Approximately 48 - 72 hours after the initial thawing, the cells can be passaged for the first time. After this initial passage, the culture medium can be adjusted to growth medium supplemented with antibiotics.

- This cell is a human erythroid leukemia cell, lymphoblast, growing in suspension.
- In the suspension, they appear as large, single, round cells. Cells shed a large accumulation of cytoplasmic granules in the culture, which should not be confused with bacteria!
- When the cell density reaches 1-1.2E6 cells/mL, perform a 1:2 to 1:3 split, ensuring subculturing every other day. It is essential to perform a full-volume centrifugation and medium replacement during passaging. Do not let the density exceed 1.2E6 cells/mL. It is recommended to use T-25 flasks for subculturing, and you can control the cell density for subculturing by counting.

Subcultivation Ratio: Maintain cultures at a cell concentration between 4E5 and 6E5 viable cells/mL.

Medium Renewal: Every other day

Notes

- To minimize the presence of cytoplasmic granules, it is essential to passage the cells every other day when the cell density reaches 1-1.2E6 cells/mL. During passaging, perform a complete centrifugation and replace the culture medium to ensure appropriate cell density and cytokine concentration. Failure to do so may promote the growth of factor-independent subclones.

Related Products

| IL-15 | |
|---|--|
| H_IL15 Reporter Cell Line | Cynomolgus_CD122 HEK-293 Cell Line |
| H_CD122 CHO-K1 Cell Line | H_CD122 HEK-293 Cell Line |
| H_CD215(IL15RA) HEK-293 Cell Line | |
| IL-2 | |
| H_CD122 CD132 Reporter Cell Line | H_CD25 CD122 CD132 Reporter Cell Line |
| H_IL2 Reporter DDX35TM Cell Line | Cynomolgus_CD25 HEK-293 Cell Line |
| H_CD25 CHO-K1 Cell Line | H_CD25 HEK-293 Cell Line |
| Anti-CD122 hIgG1 Antibody(HuABC-2) | Anti-CD132(IL2RG) hIgG4 Antibody(REGN7257) |
| Anti-CD25 hIgG1 Antibody(Basiliximab) | Anti-mouse CD25 mIgG2a Antibody(PC-61.5.3) |

Anti-mouse CD25 RlgG1 Antibody(PC-61.5.3)

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