Genomeditech (Shanghai) Co.,Ltd.
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Product Sheet

H_CD25 CD122 CD132 Reporter Cell Line

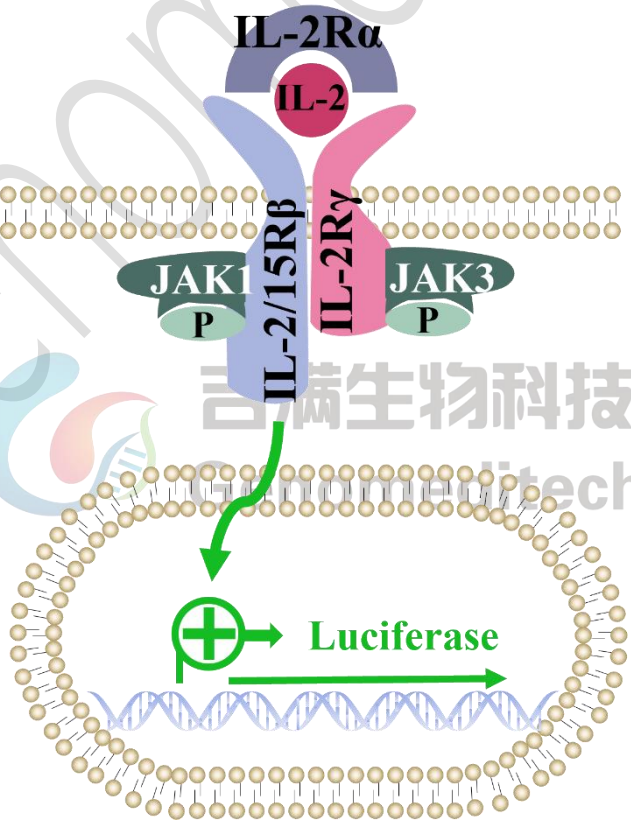
Catalog number: GM-C29055

Version 3.3.1.241219

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 has two forms: a heterotrimer composed of IL-2Rα, IL-2Rβ, and IL-2Rγ, and a heterodimer composed of IL-2Rβ and IL-2Rγ. 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_CD25 CD122 CD132 Reporter Cell Line is a clonal stable cell line constructed using lentiviral technology, constitutive expression of the IL-2Rα(CD25), IL-2Rβ(CD122) and IL-2Rγ(CD132) gene, 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.



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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	RPMI 1640+10% FBS+1% P.S
Growth medium	RPMI 1640+10% FBS+1% P.S+3.5 μg/mL Blasticidin+400 μg/mL G418+200 μg/mL Hygromycin+0.75 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	VivaCell/C3010-0500
Fetal Bovine Serum	Cegrogen biotech/A0500-3010
Pen/Strep	Thermo/15140-122
Blasticidin	Genomeditech/GM-040404
G418	Genomeditech/GM-040402
Hygromycin	Genomeditech/GM-040403
Puromycin	Genomeditech/GM-040401
H_CD122 CD132 Reporter Cell Line	Genomeditech/GM-C29054
Recombinant Human IL-2	Novoprotein/C013
Anti-CD25 hIgG1 Antibody(Basiliximab)	Genomeditech/GM-52329AB
Anti-CD122 hIgG1 Antibody(HuABC-2)	Genomeditech/GM-52319AB
Anti-CD132(IL2RG) hIgG4 Antibody(REGN7257)	Genomeditech/GM-52334AB
GMOne-Step Luciferase Reporter Gene Assay Kit	Genomeditech/GM-040503

Figures

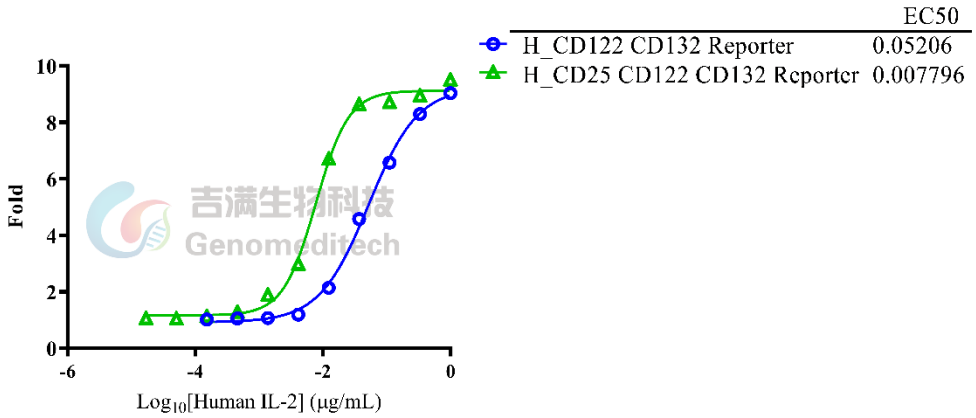


Figure 1 | Response to Recombinant Human IL-2. The H_CD122 CD132 Reporter Cell Line (Cat. GM-C29054) and H_CD25 CD122 CD132 Reporter Cell Line (Cat. GM-C29055) at a concentration of 1E5 cells/well (96-well format) were stimulated with serial dilutions of Recombinant Human IL-2 (Novoprotein/C013) in assay 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 [9.0] and [9.5], respectively. Data are shown by drug mass concentration.

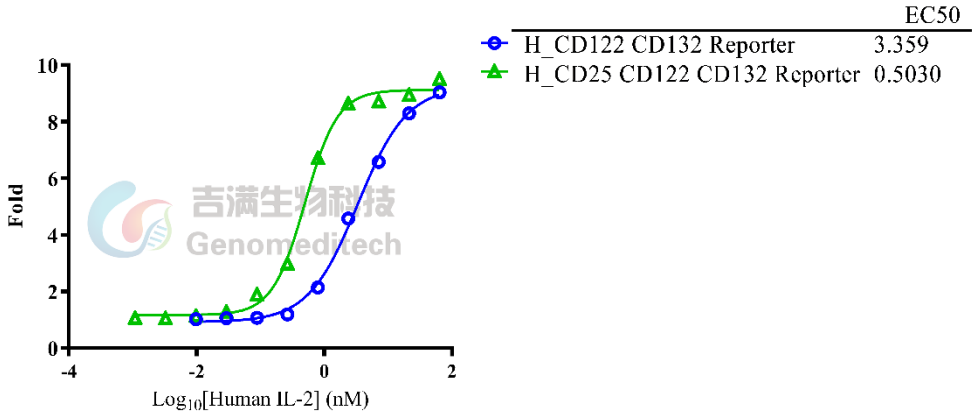


Figure 2 | Response to Recombinant Human IL-2. The H_CD122 CD132 Reporter Cell Line (Cat. GM-C29054) and H_CD25 CD122 CD132 Reporter Cell Line (Cat. GM-C29055) at a concentration of 1E5 cells/well (96-well format) were stimulated with serial dilutions of Recombinant Human IL-2 (Novoprotein/C013) in assay 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 [9.0] and [9.5], respectively. Data are shown by drug molar concentration.

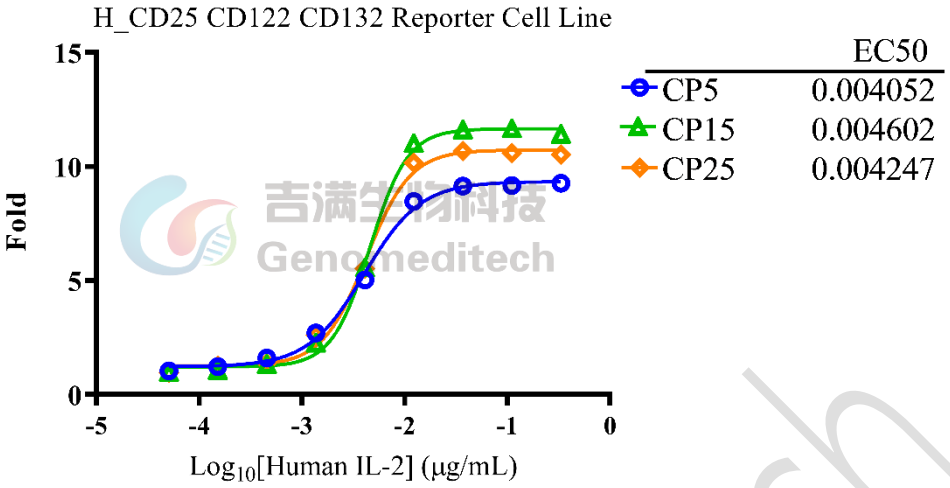


Figure 3 | The passage stability of response to Recombinant Human IL-2. The passage 5, 15 and 25 of H_CD25 CD122 CD132 Reporter Cell Line (Cat. GM-C29055) at a concentration of 1E5 cells/well (96-well format) was stimulated with serial dilutions of Recombinant Human IL-2 (Novoprotein/C013) in assay buffer (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.

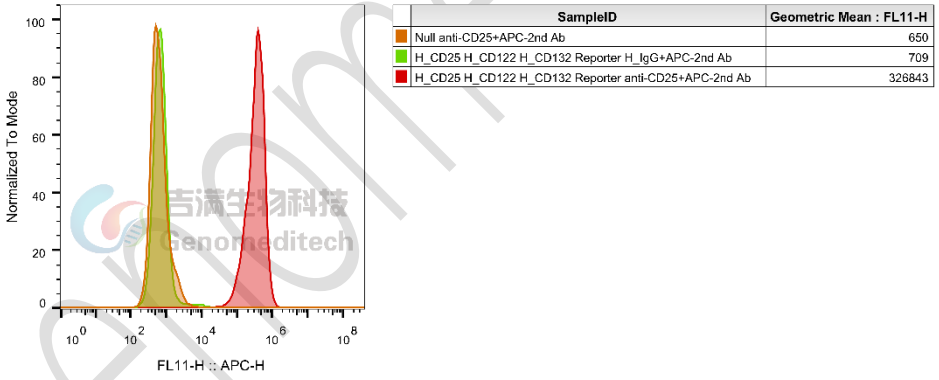
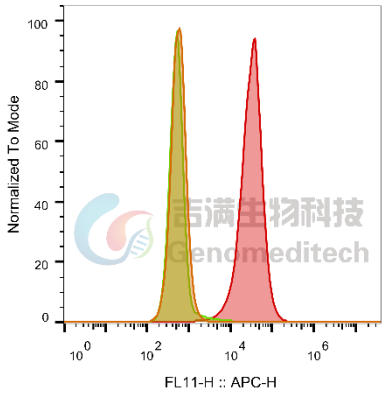
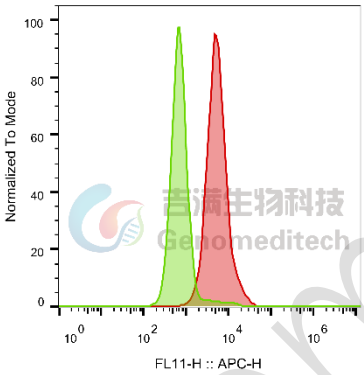


Figure 4 | H_CD25 CD122 CD132 Reporter Cell Line (Cat. GM-C29055) was determined by flow cytometry using Anti-CD25 hIgG1 Antibody(Basiliximab) (Cat. GM-52329AB).



SampleID	Geometric Mean : FL11-H
Null anti-CD122+APC 2nd	575
H_CD25 CD122 CD132 Reporter H_IgG+APC 2nd	541
H_CD25 CD122 CD132 Reporter anti-CD122+APC 2nd	30803

Figure 5 | H_CD25 CD122 CD132 Reporter Cell Line (Cat. GM-C29055) was determined by flow cytometry using Anti-CD122 hIgG1 Antibody(HuABC-2) (Cat. GM-52319AB).



SampleID	Geometric Mean : FL11-H
H_CD25 CD122 H_CD132 Reporter H_IgG+APC-2nd Ab	742
H_CD25 H_CD122 H_CD132 Reporter anti-CD132+APC-2nd Ab	5352

Figure 6 | H_CD25 CD122 CD132 Reporter Cell Line (Cat. GM-C29055) was determined by flow cytometry using Anti-CD132(IL2RG) hIgG4 Antibody(REGN7257) (Cat. GM-52334AB).

Cell Recovery

Recovery Medium: RPMI 1640+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.

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d) Resuspend cell pellet with the recommended complete medium. And dispense the suspension into 1 - 2 T-25 culture flasks.

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: RPMI 1640+10% FBS+1% P.S+3.5 μg/mL Blasticidin+400 μg/mL G418+200 μg/mL Hygromycin+0.75 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. If cells are not passaged within 48 hours, it is recommended to add some fresh recovery medium and place the flask horizontally.

a) When the cell density reaches 1.5 - 2E6 cells/mL, subculture the cells. Do not allow the cell density to exceed 2E6 cells/mL.

b) It is recommended to use T-25 flasks for subculturing.

c) These cells are suspension cells, and it is recommended to use the "half-medium change" method to maintain optimal cell conditions during passaging.

d) During passaging, you can directly add fresh growth medium to the culture flask, gently pipette to resuspend the cells, and then transfer the cell suspension to a new T-25 flask for continued culture.

Subcultivation Ratio: Maintain cultures at a cell concentraion between 3E5 and 1E6 viable cells/mL.

Medium Renewal: Every 2 to 3 days

Notes

a) These cells are sensitive to density, so please ensure that the cell density is maintained within an appropriate range during culture and subculturing.

b) During the first passage, pay attention to the nutrient supply; if not subculturing, make sure to add fresh recovery medium every other day as needed.

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_IL2 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 RIgG1 Antibody(PC-61.5.3)	

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