Genomeditech (Shanghai) Co.,Ltd.
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Product Sheet

H_TSLP Reporter Cell Line

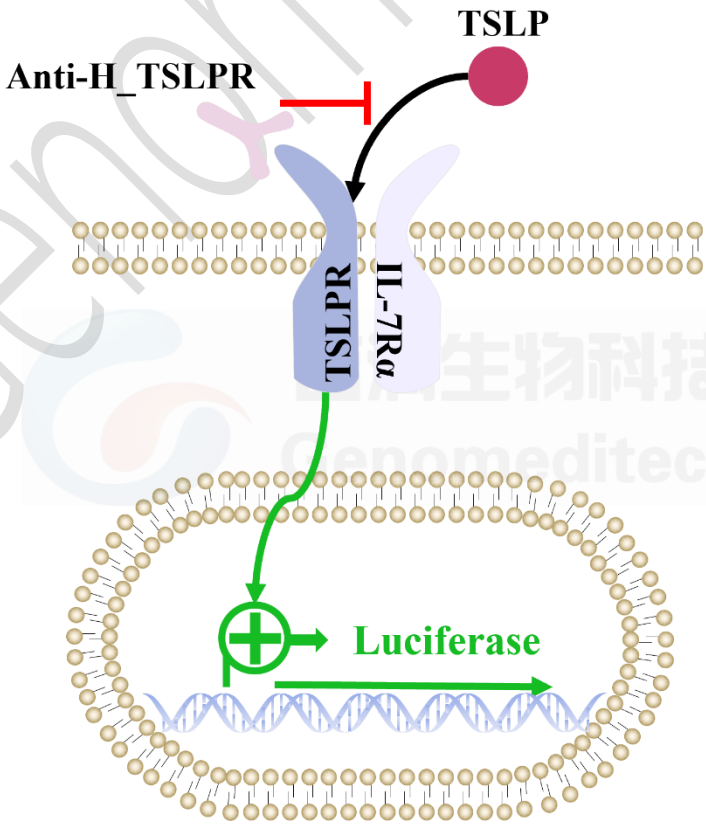
Catalog number: GM-C15572

Version 3.3.1.241226

Thymic Stromal Lymphopoietin (TSLP) is a cytokine produced by various cells, including epithelial, dendritic, and mast cells. It is essential for the immune system, particularly in T cell development and function. TSLP binds to its receptor TSLPR, activating downstream pathways that promote Th2-type immune responses and are involved in allergic diseases and asthma.

The TSLP signaling pathway is activated by the complex of TSLPR and IL-7R. This complex triggers the JAK-STAT pathway, leading to the phosphorylation of STAT5, which then regulates immune-related gene expression. TSLP also affects cell proliferation and survival through NF-κB and MAPK pathways, promoting Th2 cell differentiation and activation, crucial for allergic reactions and inflammation.

H_TSLP Reporter Cell Line is a clonal stable cell line constructed using lentiviral technology, constitutive expression of the TSLPR and IL-7R gene, along with signal-dependent expression of a luciferase reporter gene. When TSLP binds to TSLPR and IL-7R, it activates downstream signaling pathways, leading to the expression of luciferase. Blockade antibodies can inhibit this signal transmission. 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 TSLP.



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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+8 ng/mL mouse IL-3
Growth medium	RPMI 1640+10% FBS+ 1% P.S+8 ng/mL mouse IL-3+5 μg/mL Blasticidin+50 μg/mL G418+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	VivaCell/C3010-0500
Fetal Bovine Serum	Cegrogen biotech/A0500-3010
Pen/Strep	Thermo/15140-122
Recombinant Mouse IL-3 (C-6His)	Novoprotein/CP39
Blasticidin	Genomeditech/GM-040404
G418	Genomeditech/GM-040402
Puromycin	Genomeditech/GM-040401
Recombinant Human TSLP Protein	R&D SYSTEMS/1398-TS-010/CF
Recombinant Human TSLP	Novoprotein/CK16
Anti-H_TSLPR hIgG1 Antibody	Genomeditech/GM-31018AB
PE anti-human CD127 (IL-7Rα) Antibody	BioLegend/351303
GMOne-Step Luciferase Reporter Gene Assay Kit	Genomeditech/GM-040503

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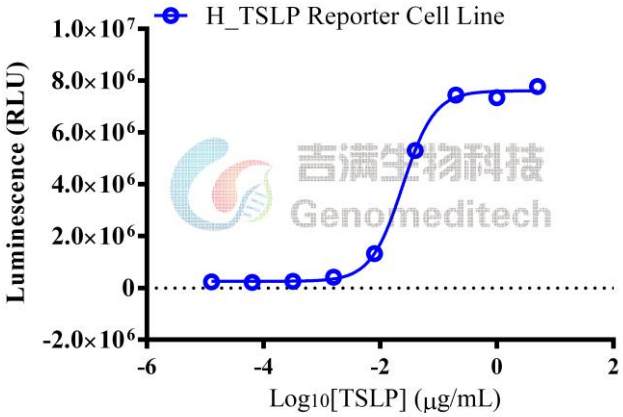
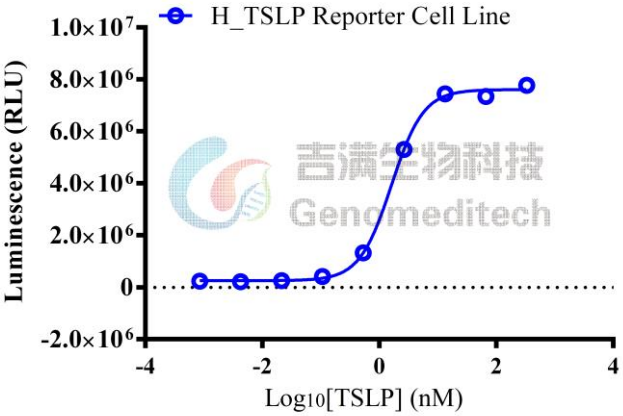
Figures



	H_TSLP Reporter Cell Line
EC50	0.02431

Figure 1 | Response to Recombinant Human TSLP Protein. The H_TSLP Reporter Cell Line (Cat. GM-C15572) at a concentration of 1E5 cells/well (96-well format) was stimulated with serial dilutions of Recombinant Human TSLP Protein (R&D SYSTEMS/1398-TS-010/CF) in assay buffer (RPMI 1640 + 1% FBS + 1% P.S) for 24 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 [32.6]. Data are shown by drug mass concentration.



	H_TSLP Reporter Cell Line
EC50	1.620

Figure 2 | Response to Recombinant Human TSLP Protein. The H_TSLP Reporter Cell Line (Cat. GM-C15572) at a concentration of 1E5 cells/well (96-well format) was stimulated with serial dilutions of Recombinant Human TSLP Protein (R&D SYSTEMS/1398-TS-010/CF) in assay buffer (RPMI 1640 + 1% FBS + 1% P.S) for 24 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 [32.6]. Data are shown by drug molar concentration.

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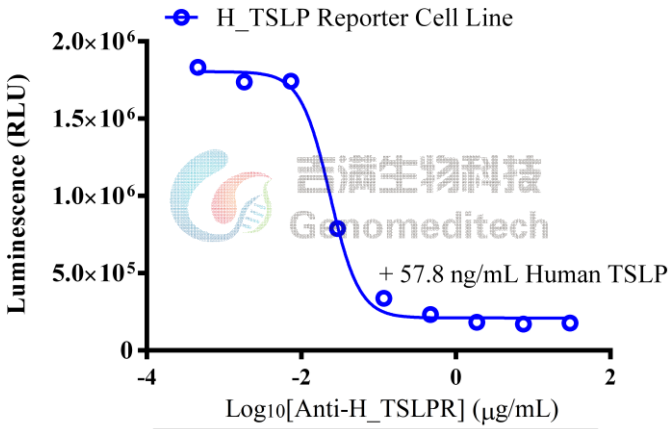
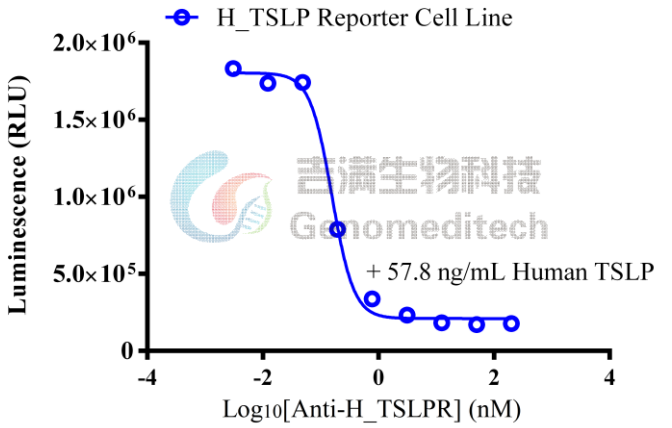


	H_TSLP Reporter Cell Line
IC50	0.02348

Figure 3 | Response to Anti-H_TSLPR hIgG1 Antibody. Serial dilutions of the Anti-H_TSLPR hIgG1 Antibody (Cat. GM-31018AB) was incubated with 1E5 cells/well of the H_TSLP Reporter Cell Line (Cat. GM-C15572) in a 96-well plate for 1 hour in assay buffer (RPMI 1640 + 1% FBS + 1% P.S). Subsequently, the Recombinant Human TSLP Protein (R&D SYSTEMS/1398-TS-010/CF) at a concentration of 5.78 ng/well was added, and the coculture proceeded for an additional 23 hours. Firefly luciferase activity is then measured using the GMOne-Step Luciferase Reporter Gene Assay Kit (Cat. GM-040503). The results indicated maximum blocking folds of approximately [10.3]. Data are shown by drug mass concentration.



	H_TSLP Reporter Cell Line
IC50	0.1565

Figure 4 | Response to Anti-H_TSLPR hIgG1 Antibody. Serial dilutions of the Anti-H_TSLPR hIgG1 Antibody (Cat. GM-31018AB) was incubated with 1E5 cells/well of the H_TSLP Reporter Cell Line (Cat. GM-C15572) in a 96-well plate for 1 hour in assay buffer (RPMI 1640 + 1% FBS + 1% P.S). Subsequently, the Recombinant Human TSLP Protein (R&D SYSTEMS/1398-TS-010/CF) at a concentration of 5.78 ng/well was added, and the coculture proceeded for an additional 23 hours. Firefly luciferase activity is then measured using the GMOne-Step Luciferase

Reporter Gene Assay Kit (Cat. GM-040503). The results indicated maximum blocking folds of approximately [10.3]. Data are shown by drug molar concentration.

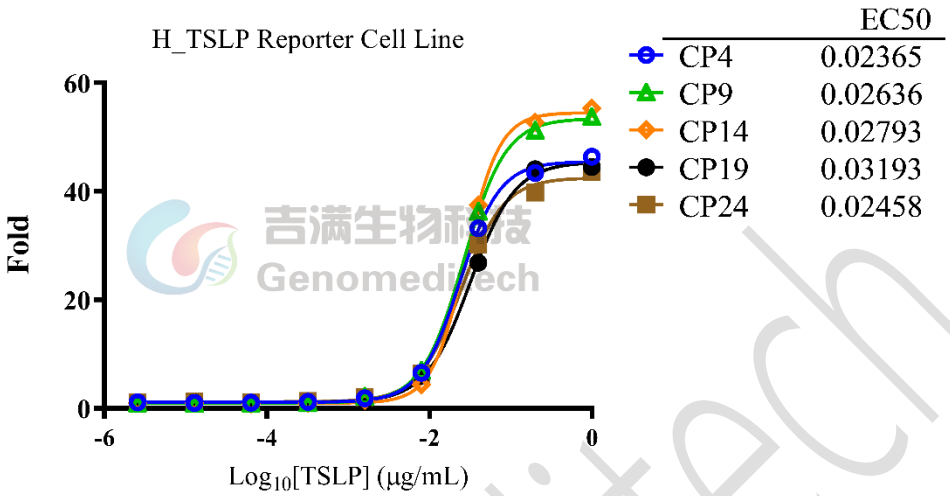
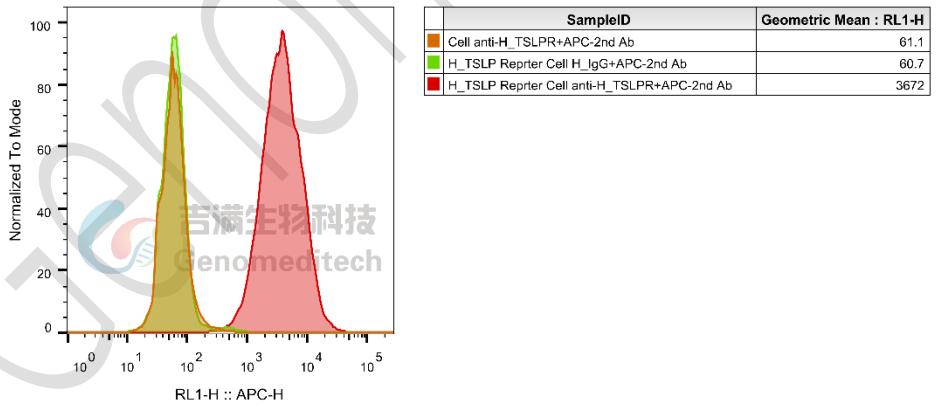
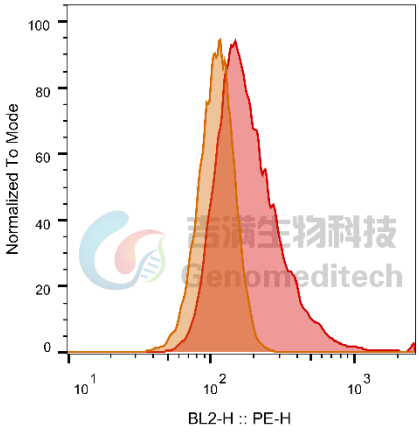


Figure 5 | The passage stability of response to Recombinant Human TSLP. The passage 4, 9, 14, 19 and 24 of H_TSLP Reporter Cell Line (Cat. GM-C15572) at a concentration of 1E5 cells/well (96-well format) were stimulated with serial dilutions of Recombinant Human TSLP (Novoprotein/CK16) in assay buffer (RPMI 1640 + 1% FBS + 1% P.S) for 24 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.



SampleID	Geometric Mean : RL1-H
Cell anti-H_TSLPR+APC-2nd Ab	61.1
H_TSLP Reprter Cell H_IgG+APC-2nd Ab	60.7
H_TSLP Reprter Cell anti-H_TSLPR+APC-2nd Ab	3672

Figure 6 | H_TSLP Reporter Cell Line (Cat. GM-C15572) was determined by flow cytometry using Anti-H_TSLPR hIgG1 Antibody (Cat. GM-31018AB).



SampleID	Geometric Mean : BL2-H
Cell PE-atni-H_IL7RA	109
H_TSLP Reporter Cell PE-anti-H_IL7RA	183

Figure 7 | H_TSLP Reporter Cell Line (Cat. GM-C15572) was determined by flow cytometry using PE anti-human CD127 (IL-7Rα) Antibody (BioLegend/351303).

Cell Recovery

Recovery Medium: RPMI 1640+10% FBS+ 1% P.S+8 ng/mL mouse IL-3

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.

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 vials 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+8 ng/mL mouse IL-3+5 μg/mL Blasticidin+50 μg/mL G418+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. 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 - 1.2E6 cells/mL, subculture the cells. Do not allow the cell density to exceed 1.4E6 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-4/IL-13	
IL-4 Reporter Cell Line	IL-4/IL-13 Reporter 293 Cell Line
IL-4/IL-13 Reporter 293 DDX35TM Cell Line	Cynomolgus_IL4R CHO-K1 Cell Line
H_IL4R CHO-K1 Cell Line	
Anti-IL-4R hIgG1 Antibody(12B5)	Anti-IL4R hIgG4 Antibody(Dupilumab)
Anti-IL4R hIgG4 Reference Antibody (Dupbio)	
Human IL-4R alpha Protein; mFc Tag	
TSLP:TSLPR	
H_TSLPR CHO-K1 Cell Line	
Anti-H_TSLPR hIgG1 Antibody	Anti-TSLP hIgG2 Reference Antibody(Tezbio)
Anti-TSLP hIgG2 Antibody(Tezepelumab)	

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Cynomolgus TSLP Protein; His Tag	Human TSLP Protein; His Tag
IL-5	
H_IL-5 Reporter 293 Cell Line	H_IL-5RA CHO-K1 Cell Line
H_IL-5RA HEK-293 Cell Line	
Anti-IL5 hIgG4 Antibody(Reslizumab)	Anti-IL-5R hIgG1 Antibody(Benralizumab)

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