Genomeditech (Shanghai) Co.,Ltd.
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Product Sheet

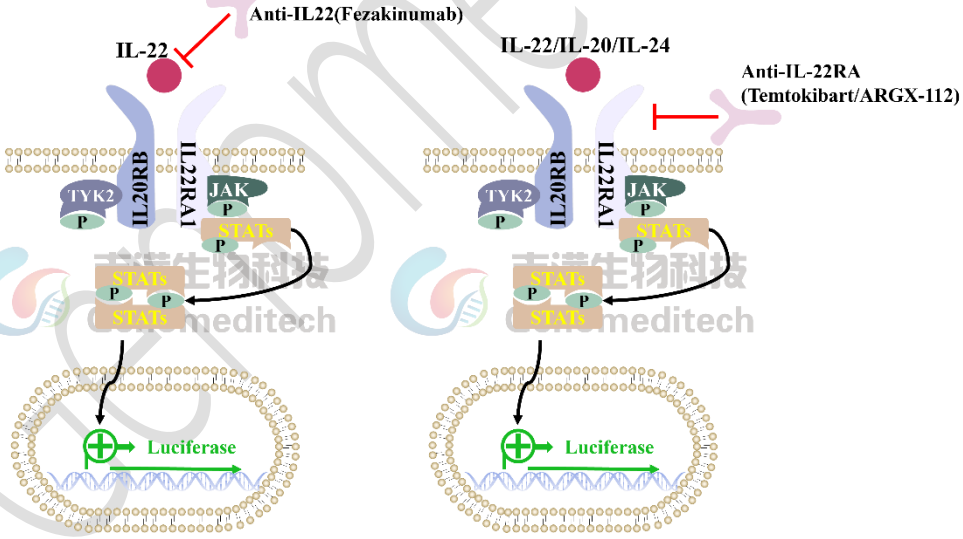
H_IL20 IL22 IL24 Reporter 293 Cell Line

Catalog number: GM-C41955

Version 3.3.1.260422

IL-20, IL-24, and IL-22 are members of the IL-10 cytokine family, mediating effects mainly via JAK-STAT pathway activation. IL-20 and IL-24 bind the IL-22R1/IL-20R2 complex, while IL-22 uses IL-22R1/IL-10R2. Binding activates intracellular JAK1, JAK2, and Tyk2, leading to STAT3 phosphorylation, nuclear translocation, and regulation of genes for epithelial barrier function, cell survival, proliferation, and inflammation. IL-20/IL-24 drive inflammation and tissue regeneration, while IL-22 supports mucosal integrity, repair, and antimicrobial immunity, forming a key network for epithelial inflammation and repair. This cell line enables bioactivity assessment of inhibitors like Temtokibart, ARGX-112, and Fezakinumab targeting IL20/IL22/IL24 pathways, offering a platform for drug screening and validation.

H_IL20 IL22 IL24 Reporter 293 Cell Line is a clonal stable 293 cell line constructed using lentiviral technology, constitutive expression of the IL20RB, IL22RA1 gene and it endogenously expresses IL10RB, along with signal-dependent expression of a luciferase reporter gene. When a ligand binds to its receptor, 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 related drugs.



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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	DMEM+10% FBS+1% P.S
Growth medium	DMEM+10% FBS+1% P.S+4 μg/mL Blasticidin+400 μg/mL G418+125 μg/mL Hygromycin+0.75 μg/mL Puromycin
Note	None
Freezing Medium	90% FBS+10% DMSO
Growth properties	Adherent
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.
DMEM	Gibco/C11995500BT
Fetal Bovine Serum	ExCell/FSP500
Blasticidin	Genomeditech/GM-040404
Pen/Strep	Thermo/15140-122
G418	Genomeditech/GM-040402
Hygromycin	Genomeditech/GM-040403
Puromycin	Genomeditech/GM-040401
Human IL-22 Protein; His Tag	Genomeditech/GM-88080RP
Recombinant Human IL-20 Protein	SinoBiological/13060-HNAE
Recombinant Human IL-24 Protein (His Tag)	SinoBiological/12265-H08H
Anti-IL-22RA hIgG1 Reference Antibody (Temtobio)	Genomeditech/GM-88094MAB
Anti-H_IL-22 hIgG1 Antibody(Fezakinumab)	Genomeditech/GM-46509AB
PE anti-human CD210b (IL-10RB) Antibody	Biolegend/396803
IL-27R alpha/WSX-1/TCCR Antibody	novus/MAB1479-SP

Figures

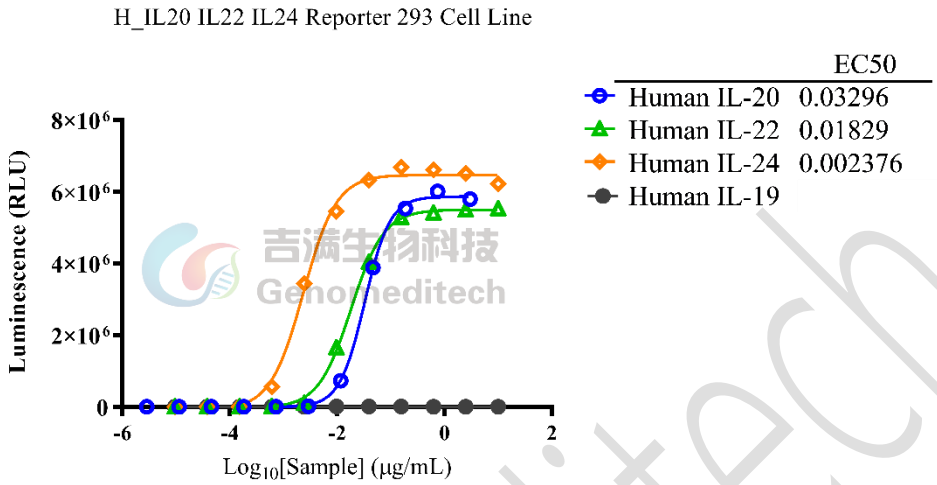

Figure 1 | Response to human IL20, IL22, IL24 and IL19 protein. The H_IL20 IL22 IL24 Reporter 293 Cell Line (Cat. GM-C41955) at a concentration of 1.5E4 cells/well (96-well format) was stimulated with serial dilutions of Recombinant Human IL-20 Protein (SinoBiological/13060-HNAE), Human IL-22 Protein; His Tag (Cat. GM-88080RP), Recombinant Human IL-24 Protein (His Tag) (SinoBiological/12265-H08H) and IL-19 Protein, Human (UA BIOSCIENCE/UA040152) in assay buffer (DMEM + 1% FBS + 1% P.S) for 16 hours. The firefly luciferase activity was measured using the Luciferase Reporter Assay Kit (Genomeditech). The maximum induction folds of IL20, IL22, IL24 were approximately [1156.4], [901.3] and [1205.04]. Data are shown by drug mass concentration.

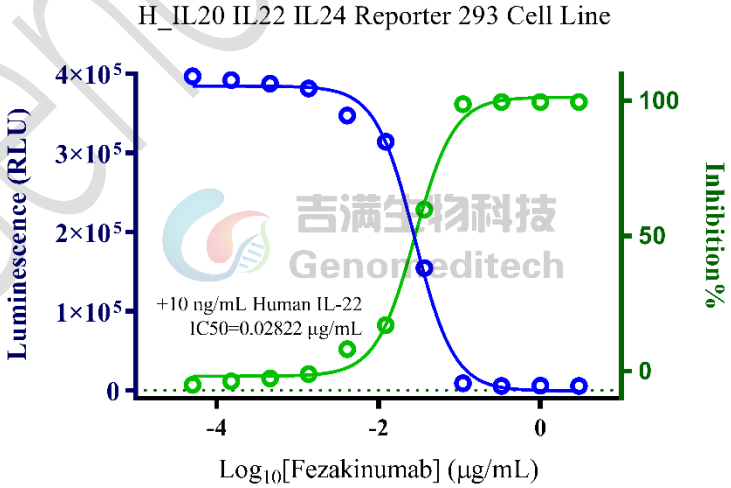

Figure 2 | Inhibition of Human IL-22 Protein-induced reporter activity by Anti-H_IL-22 hIgG1 Antibody(Fezakinumab). Serial dilutions of Anti-H_IL-22 hIgG1 Antibody(Fezakinumab) (Cat. GM-46509AB) were incubated with 0.5 ng/well of Human IL-22 Protein; His Tag (Cat. GM-88080RP) for 1 hour in assay buffer (DMEM + 1% FBS + 1% P.S). After pre-incubation, add the mixture to the H_IL20 IL22 IL24 Reporter 293 Cell Line (Cat. GM-

C41955) at a density of 1.5E4 cells/well in a 96-well format, and incubate for 16 hours. Firefly luciferase activity was measured using the Luciferase Reporter Assay Kit (Genomeditech) (left Y-axis, relative luminescence units, RLU), with inhibition percentages shown on the right Y-axis. Data are shown by drug mass concentration.

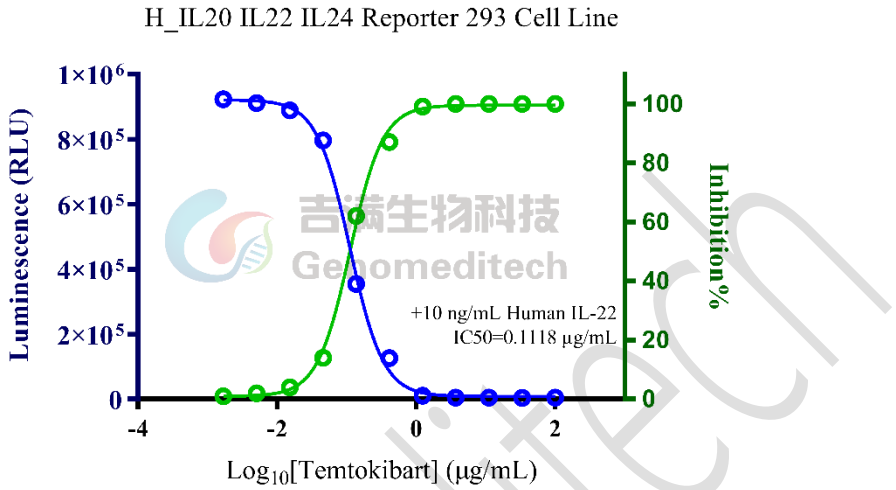

Figure 3 | Inhibition of Human IL-22 protein-induced reporter activity by Temtokibart. Serial dilutions of the Anti-IL-22RA hIgG1 Reference Antibody (Temtobio) (Cat. GM-88094MAB) were incubated with 1.5E4 cells/well of the H_IL20 IL22 IL24 Reporter 293 Cell Line (Cat. GM-C41955) in a 96-well plate for 1 hour in assay buffer (DMEM + 1% FBS + 1% P.S). Subsequently, the Human IL-22 Protein; His Tag (Cat. GM-88080RP) at a density of 0.5 ng/well was added, and the coculture proceeded for an additional 16 hours. Firefly luciferase activity was then measured using the Luciferase Reporter Assay Kit (Genomeditech) (left Y-axis, relative luminescence units), with inhibition percentages shown on the right Y-axis. Data are shown by drug mass concentration.

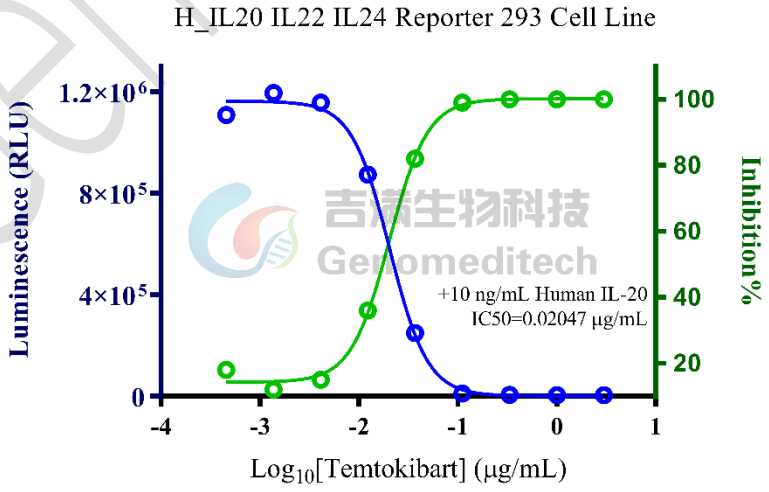

Figure 4 | Inhibition of Human IL-20 protein-induced reporter activity by Temtokibart. Serial dilutions of the Anti-IL-22RA hIgG1 Reference Antibody (Temtobio) (Cat. GM-88094MAB) were incubated with 1.5E4 cells/well of the

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H_IL20 IL22 IL24 Reporter 293 Cell Line (Cat. GM-C41955) in a 96-well plate for 1 hour in assay buffer (DMEM + 1% FBS + 1% P.S). Subsequently, the Recombinant Human IL-20 Protein (Sino Biological/13060-HNAE) at a density of 0.5 ng/well was added, and the coculture proceeded for an additional 16 hours. Firefly luciferase activity was then measured using the Luciferase Reporter Assay Kit (Genomeditech) (left Y-axis, relative luminescence units), with inhibition percentages shown on the right Y-axis. Data are shown by drug mass concentration.

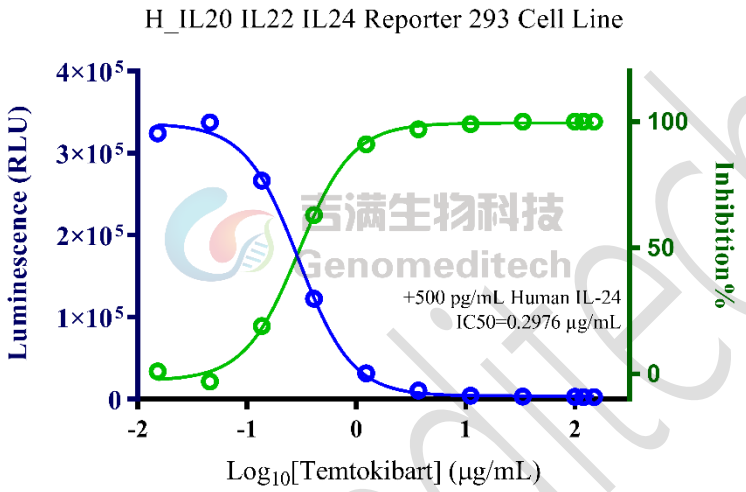
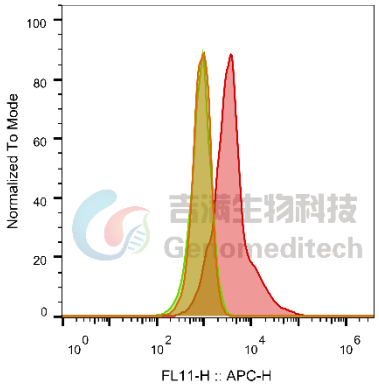
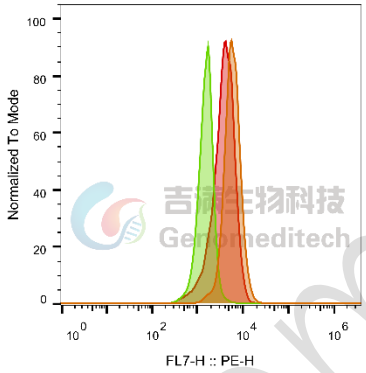


Figure 5 | Inhibition of Human IL-24 protein-induced reporter activity by Temtokibart. Serial dilutions of the Anti-IL-22RA hIgG1 Reference Antibody (Temtobio) (Cat. GM-88094MAB) were incubated with 1.5E4 cells/well of the H_IL20 IL22 IL24 Reporter 293 Cell Line (Cat. GM-C41955) in a 96-well plate for 1 hour in assay buffer (DMEM + 1% FBS + 1% P.S). Subsequently, the Recombinant Human IL-24 Protein (His Tag) (SinoBiological/12265-H08H) at a density of 25 pg/well was added, and the coculture proceeded for an additional 16 hours. Firefly luciferase activity was then measured using the Luciferase Reporter Assay Kit (Genomeditech) (left Y-axis, relative luminescence units), with inhibition percentages shown on the right Y-axis. Data are shown by drug mass concentration.



SampleID	Geometric Mean : FL11-H
HEK-293 anti-IL-22RA+APC-2nd Ab	885
H_IL20 IL22 IL24 Reporter 293 H_IgG+APC-2nd Ab	858
H_IL20 IL22 IL24 Reporter 293 anti-IL-22RA+APC-2nd Ab	3735

Figure 6 | H_IL20 IL22 IL24 Reporter 293 Cell Line (Cat. GM-C41955) was determined by flow cytometry using Anti-IL-22RA hIgG1 Reference Antibody (Temtobio) (Cat. GM-88094MAB).



SampleID	Geometric Mean : FL7-H
HEK-293 PE-anti-CD210b(IL-10RB) Ab	5775
H_IL20 IL22 IL24 Reporter HEK-293 PE-Mouse_IgG Ab	1512
H_IL20 IL22 IL24 Reporter HEK-293 PE-anti-CD210b(IL-10RB) Ab	3666

Figure 7 | H_IL20 IL22 IL24 Reporter 293 Cell Line (Cat. GM-C41955) was determined by flow cytometry using PE anti-human CD210b (IL-10RB) Antibody (Biolegend/396803).

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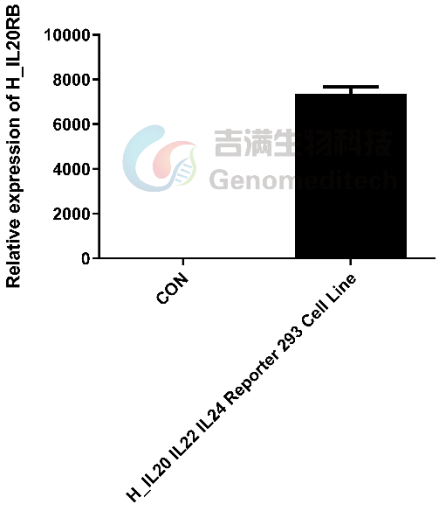

Figure 8 | The mRNA expression levels of H_IL20RB in the H_IL20 IL22 IL24 Reporter 293 Cell Line (Cat. GM-C41955) were determined by RT-qPCR.

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.

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 recovery medium. And dispense into appropriate culture dishes.

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: DMEM+10% FBS+1% P.S+4 μg/mL Blasticidin+400 μg/mL G418+125 μg/mL Hygromycin+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.

a) 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.

b) Remove and discard culture medium.

c) Briefly rinse the cell layer with PBS to remove all traces of serum that contains trypsin inhibitor.

d) 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).

e) 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.

f) Add 2.0 mL of growth medium to mix well and aspirate cells by gently pipetting.

g) After centrifugation, resuspend the pellet and add appropriate aliquots of the cell suspension to new culture vessels.

h) 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

a) 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.

b) Ensure that the cell density does not exceed 80%, as overcrowding may lead to reduced viability due to compression.

Related Products

IL-22	
H_IL22RA IL10RB BAF3 Cell Line	H_IL22 Reporter 293 Cell Line
Cynomolgus_IL22R HEK-293 Cell Line	H_IL22R CHO-K1 Cell Line
H_IL22R HEK-293 Cell Line	Mouse_IL22R HEK-293 Cell Line
Cynomolgus_IL22 Reporter 293 Cell Line	
Anti-H_IL-22 hIgG1 Antibody(Fezakinumab)	Anti-H_IL-22R1 hIgG1 Antibody(ARGX-112)
Anti-IL-22RA hIgG1 Antibody (280.346.TSY)	Anti-IL-22RA hIgG1 Reference Antibody (Temtobio)

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Biotinylated Human IL-22 Protein; His-Avi Tag	Human IL-22 Protein; His Tag
Human IL-22BP Protein; hFc Tag	Mouse IL-22RA1 Protein; His Tag

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