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Product Sheet

H_IL-27 STAT1 Reporter Jurkat Cell Line

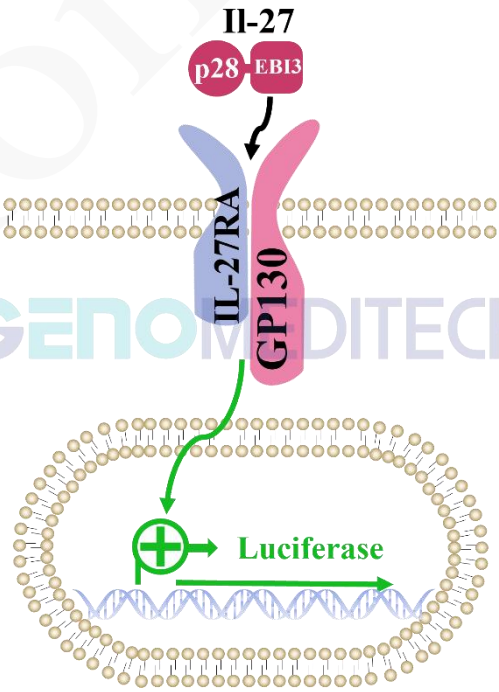
Catalog number: GM-C47171

Version 4.0.26.1113

IL-27 is a heterodimer of the Epstein-Barr virus-induced gene 3 (EBI3) subunit and the p28 subunit, which are related to p40 and p35, respectively. IL-27 binds to a unique receptor subunit, WSX-1/TCCR (IL-27RA), which is associated with gp130, the common signaling subunit used by the IL-6 cytokine family. IL-27RA is highly expressed on T cells and NK cells. IL-27 binding to its receptor activates JAK, which in turn activates STAT1–5.

IL-27 is produced by activated DCs, macrophages, and microglia, and exerts both pro- and anti-inflammatory effects depending on the cellular context. Pro-inflammatory effects include promoting Th1 differentiation via T-bet induction and suppressing Th2 differentiation, thereby inhibiting secretion of IL-4, IL-5, and IL-10. Anti-inflammatory effects include suppressing Th17 differentiation and IL-17A secretion, as well as inducing the anti-inflammatory cytokine IL-10.

H_IL-27 STAT1 Reporter Jurkat Cell Line is a clonal stable Jurkat cell line constructed using lentiviral technology, constitutive expression of the IL27RA and IL6ST genes, along with signal-dependent expression of a luciferase reporter gene. When IL-27 protein binds to the 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.



For research use only!

Specifications

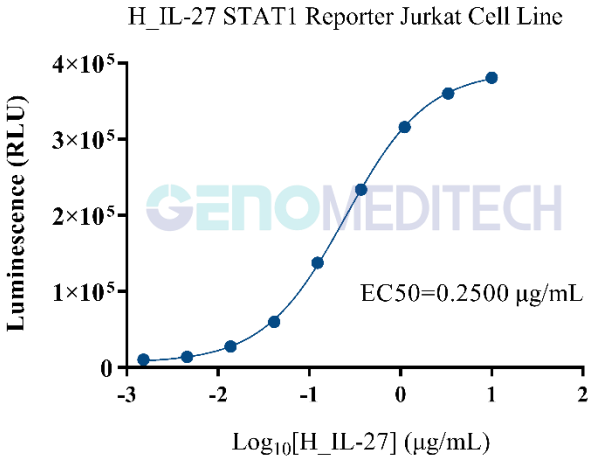
Quantity	5E6 Cells per vial,1 mL
Product Format	1 vial of frozen cells
Shipping	Shipped on dry ice
Storage Conditions	Liquid nitrogen immediately upon receipt
Recovery Medium	RPMI 1640+10% FBS+1% P.S
Growth medium	RPMI 1640+10% FBS+1% P.S+400 μg/mL Bleomycin+3.5 μg/mL Blasticidin+200 μg/mL Hygromycin+0.75 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	gibco/C11875500BT
Fetal Bovine Serum	ExCell/FSP500
Pen/Strep	Thermo/15140-122
Blasticidin	Genomeditech/GM-040404
Bleomycin	Genomeditech/GM-040407
Hygromycin	Genomeditech/GM-040403
Puromycin	Genomeditech/GM-040401
Human IL-27 protein	MCE/HY-P73199
IL-27R alpha/WSX-1/TCCR Antibody	novus/MAB1479-SP
GMOne-Step 2.0 Luciferase Reporter Gene Assay Kit	Genomeditech/GM-040513
Countess 3 Automated Cell Counter	ThermoFisher/A49891
NovoCyte Flow Cytometer	Agilent/NovoCyte 2060R
SpectraMax® L Microplate Luminometer	Moleculardevices/SpectraMax L
96 well round cell culture plate	PakGent/CL-PT096
96-well White Opaque Plate	Thermo/236108
96-well U-bottom Plate	Saining/1014010

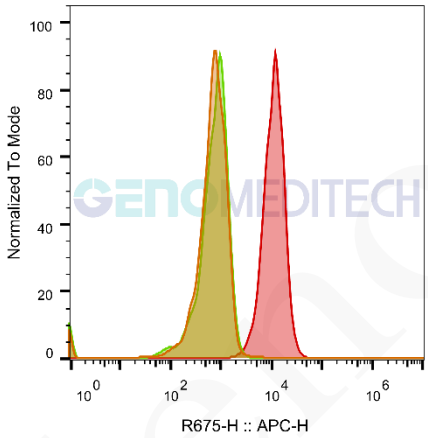
Data

Signaling Pathway



Response to Human IL-27 protein. The H_IL-27 STAT1 Reporter Jurkat Cell Line (Cat. GM-C47171) at a concentration of 5E4 cells/well (96-well format) was stimulated with serial dilutions of Human IL-27 protein (MCE/HY-P73199) in assay buffer (RPMI 1640 + 1% FBS + 1% P.S) for 6 hours. The firefly luciferase activity was measured using the Luciferase Reporter Assay Kit (Genomeditech). The maximum induction fold was approximately [46.5]. Data are shown by drug mass concentration.

Expression



	SampleID	Geometric Mean : R675-H
	Jurkat anti-IL-27R alpha+APC-2nd Ab	631
	H_IL-27 STAT1 Reporter Jurkat M_IgG+APC-2nd Ab	633
	H_IL-27 STAT1 Reporter Jurkat anti-IL-27R alpha+APC-2nd Ab	10914

H_IL-27 STAT1 Reporter Jurkat Cell Line (Cat. GM-C47171) was determined by flow cytometry using IL-27R alpha/WSX-1/TCCR Antibody (Novus/MAB1479-SP).

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.
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+400 μg/mL Bleomycin+3.5 μg/mL Blasticidin+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-27	
H_IL-27 Reporter 293 Cell Line	H_IL-27R CHO-K1 Cell Line
H_IL-27R HEK-293 Cell Line	

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