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Product Sheet

H_LAG3 Reporter Jurkat Cell Line

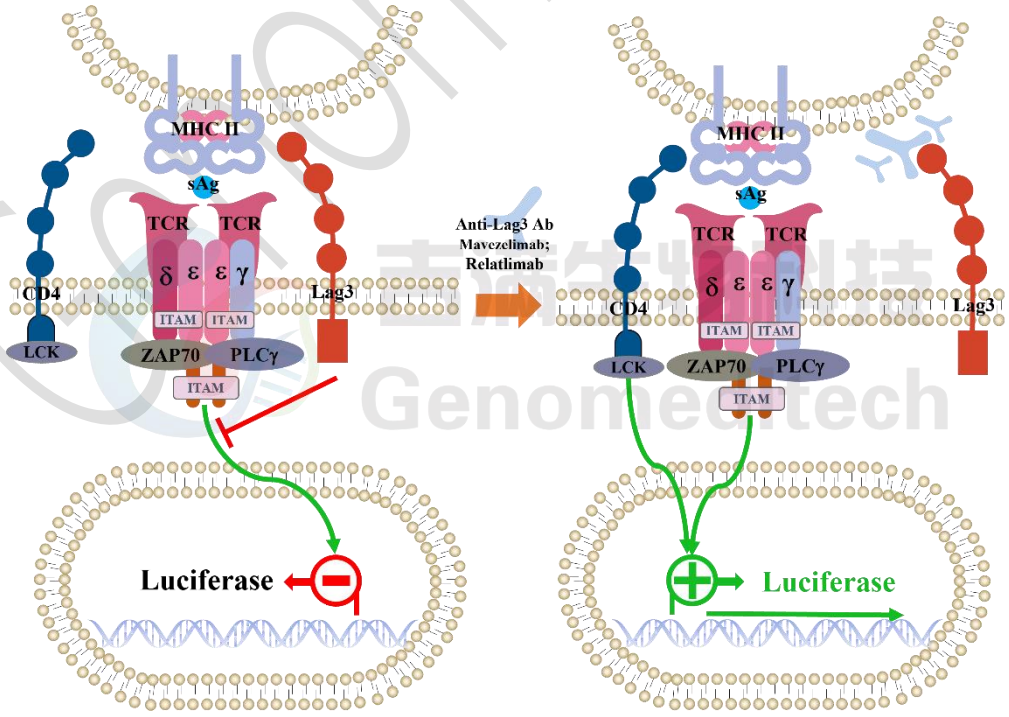
Catalog number: GM-C20096

Version 3.3.1.250116

LAG3 is an immune checkpoint receptor expressed on activated T cells, Tregs, NK cells, and some DCs. Similar to CD4, it binds MHC class II with higher affinity, negatively regulating T cell activation and maintaining immune homeostasis. LAG3 limits immune responses to self-antigens, infections, and tumors, making it a key target in cancer and autoimmune immunotherapy.

LAG3 suppresses T cell activation and proliferation by binding to ligands like MHC class II and interacting with signaling adapters to inhibit TCR signaling. This reduces calcium flux, activation marker expression, and cytokine production. In Tregs, LAG3 enhances immunosuppressive functions and can modulate DC activity, contributing to an immunosuppressive tumor microenvironment.

H_LAG3 Reporter Jurkat Cell Line is a clonal stable Jurkat cell line constructed using lentiviral technology, inducible expression of the human LAG3 gene, endogenously expression of the TCR-CD3 complex and CD4 gene, along with signal-dependent expression of a luciferase reporter gene. Switch-On Reagent is required for induction before use. When LAG3 binds to MHCII, it activates downstream signaling pathways, inhibit the expression of luciferase. Blockade antibodies can block this inhibitory signal transmission, restore the activation of T cells. 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 LAG3.



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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+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
Puromycin	Genomeditech/GM-040401
Anti-H_LAG3 hIgG4 Antibody(Mavezelimab)	Genomeditech/GM-28753AB
Anti-Lag3 hIgG4 Antibody(Relatlimab)	Genomeditech/GM-51650AB
Anti-H_CD4 hIgG1 Antibody(Tregalizumab)	Genomeditech/GM-28752AB
Staphylococcal Enterotoxin E (SEE)	Genomeditech/GM-H23036
Switch-On Reagent (1000X)	Genomeditech/GM-041519
GMOne-Step Luciferase Reporter Gene Assay Kit	Genomeditech/GM-040503

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Figures

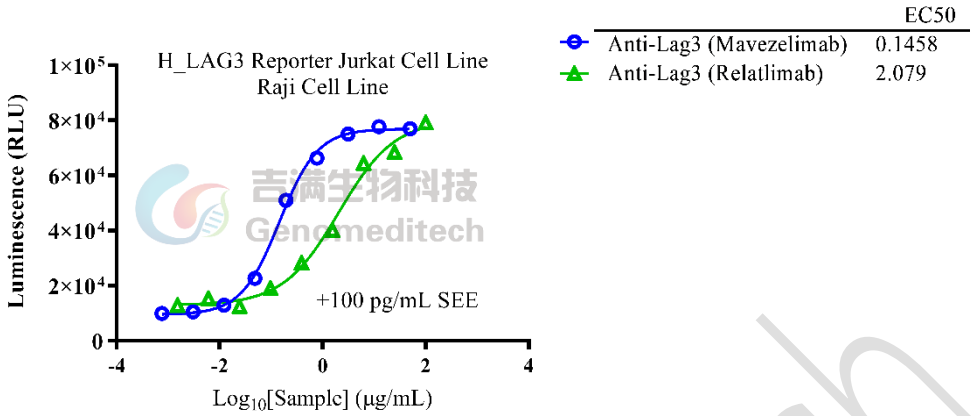

Figure 1 | Response to Mavezelimab and Relatlimab. The H_LAG3 Reporter Jurkat Cell Line (Cat. GM-C20096) was pre-treated with Switch-On Reagent(Cat. GM-041519) for 48 hours prior to the assay. Serial dilutions of Mavezelimab (Cat. GM-28753AB) and Relatlimab (Cat. GM-51650AB) were incubated with 1E5 cells/well of the cells in a 96-well plate for 30 minutes. Simultaneously, 10 pg/well of SEE was added to 2E4 cells/well of Raji cells in another 96-well plate and incubated for 30 minutes. The two mixtures were then combined and incubated for an additional 16 hours. Firefly luciferase activity was measured using the GMOne-Step Luciferase Reporter Gene Assay Kit (Cat. GM-040503). The results indicated a maximum blocking fold of approximately [7.8] and [6.2]. Data are shown by drug mass concentration.

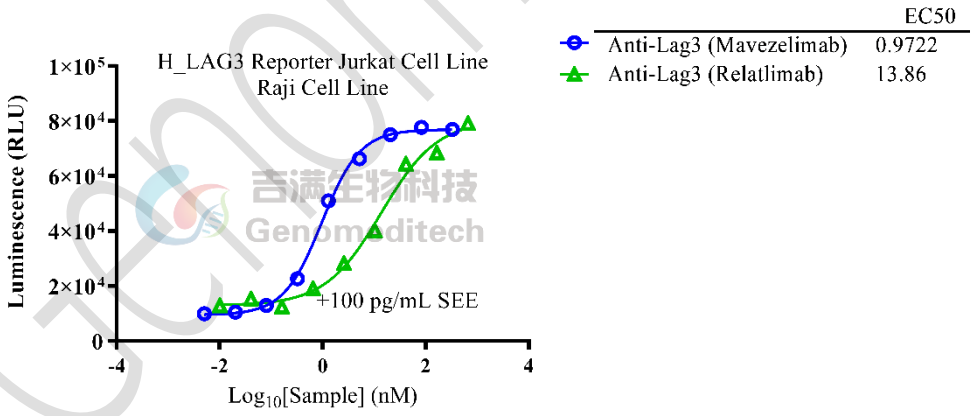

Figure 2 | Response to Mavezelimab and Relatlimab. The H_LAG3 Reporter Jurkat Cell Line (Cat. GM-C20096) was pre-treated with Switch-On Reagent(Cat. GM-041519) for 48 hours prior to the assay. Serial dilutions of Mavezelimab (Cat. GM-28753AB) and Relatlimab (Cat. GM-51650AB) were incubated with 1E5 cells/well of the cells in a 96-well plate for 30 minutes. Simultaneously, 10 pg/well of SEE was added to 2E4 cells/well of Raji cells in another 96-well plate and incubated for 30 minutes. The two mixtures were then combined and incubated for an additional 16 hours. Firefly luciferase activity was measured using the GMOne-Step Luciferase Reporter Gene Assay

Kit (Cat. GM-040503). The results indicated a maximum blocking fold of approximately [7.8] and [6.2]. Data are shown by drug molar concentration.

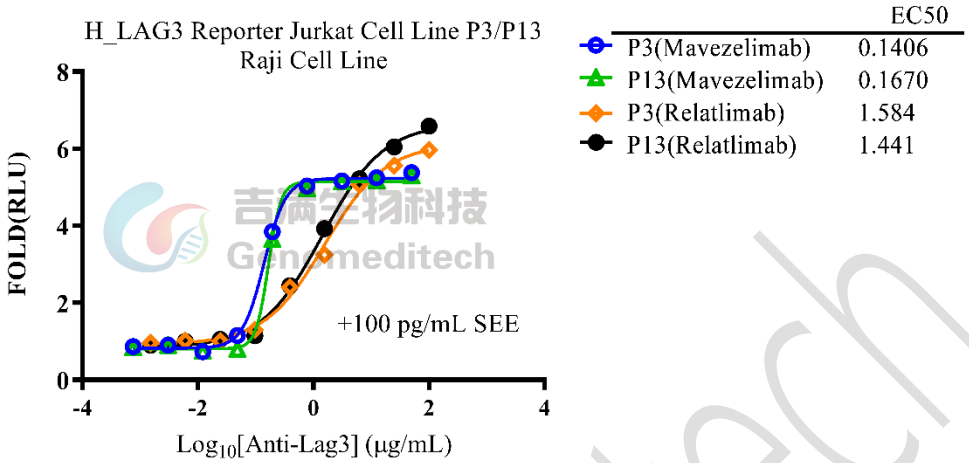

Figure 3 | The passage stability of response to Mavezelimab and Relatlimab. The H_LAG3 Reporter Jurkat Cell Line (Cat. GM-C20096) was pre-treated with Switch-On Reagent(Cat. GM-041519) for 48 hours prior to the assay. Serial dilutions of Mavezelimab (Cat. GM-28753AB) and Relatlimab (Cat. GM-51650AB) were incubated with 1E5 cells/well of the passage 3 and 13 of the cells in a 96-well plate for 30 minutes. Simultaneously, 10 pg/well of SEE was added to 2E4 cells/well of Raji cells in another 96-well plate and incubated for 30 minutes. The two mixtures were then combined and incubated for an additional 16 hours. Firefly luciferase activity was measured using the GMOne-Step Luciferase Reporter Gene Assay Kit (Cat. GM-040503). Data are shown by drug mass concentration.

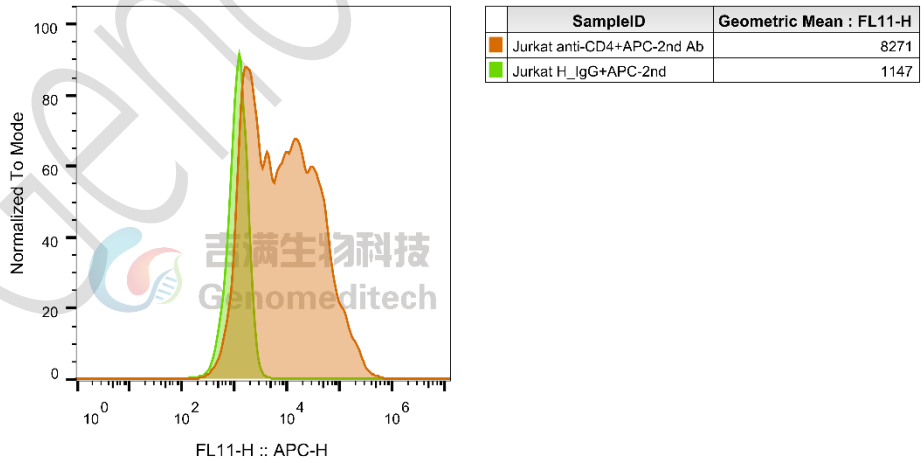

Figure 4 | H_LAG3 Reporter Jurkat Cell Line (Cat. GM-C20096) was determined by flow cytometry using Anti-H_CD4 hIgG1 Antibody(Tregalizumab) (Cat. GM-28752AB).

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+3.5 μg/mL Blasticidin+400 μg/mL G418+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

Lag3	
Cynomolgus_LAG3 CHO-K1 Cell Line	H_LAG3 CHO-K1 Cell Line
H_LAG3 HEK-293 Cell Line	Rhesus_LAG3 CHO-K1 Cell Line
Anti-H_LAG3 hIgG4 Antibody(Mavezelimab)	Anti-Lag3 hIgG4 Antibody(IMP-7)
Anti-Lag3 hIgG4 Antibody(Relatlimab)	

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