Genomeditech (Shanghai) Co.,Ltd.
Order: +86 021-68455258/50432826/50432825
Toll-free: +86 400 627 9288
Email: service@genomeditech.com

Product Sheet

H_IL2-Promoter Reporter Jurkat Cell Line

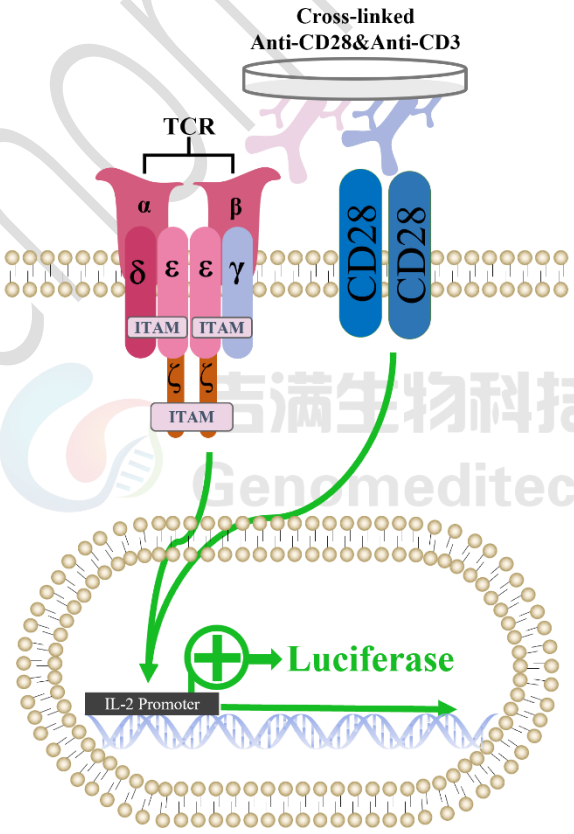
Catalog number: GM-C25629

Version 3.3.1.250114

The promoter of interleukin-2 (IL-2) is an essential regulatory region that controls the expression of the IL-2 gene. The activity of the IL-2 promoter is precisely regulated by external stimuli (such as TCR/CD28 signals) and intracellular signaling pathways. Only after T cells are stimulated can these regulatory elements work together through multiple signaling pathways to effectively activate the expression of IL-2.

The IL-2 promoter contains a series of highly conserved transcription factor binding sites, such as NFAT (Nuclear Factor of Activated T-cells), AP-1, NF-κB, and OCT-1. These binding sites play a crucial regulatory role in the transcriptional activation of the IL-2 gene.

H_IL2-Promoter Reporter Jurkat Cell Line is a clonal stable Jurkat cell line constructed using non-viral vectors, endogenously expression of the TCR-CD3 complex and CD28 gene, along with signal-dependent expression of a luciferase reporter gene under the control of a human IL-2 promoter. When T cells are stimulated by TCR (T-cell receptor) and co-stimulatory signals (such as CD28) that the relevant transcription factors are activated and bind to the promoter, 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 research of drugs related to IL2-Promoter.



Genomeditech (Shanghai) Co.,Ltd.
Order: +86 021-68455258/50432826/50432825
Toll-free: +86 400 627 9288
Email: service@genomeditech.com

Specifications

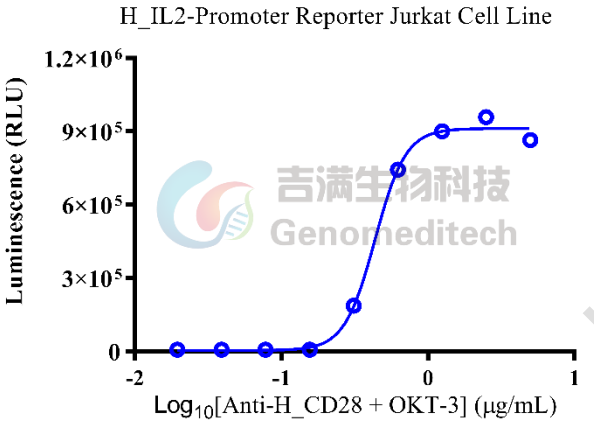
Quantity	5E6 Cells per vial,1 mL
Product Format	1 vial of frozen cells
Shipping	Shipped on dry ice
Storage Conditions	Liquid nitrogen immediately upon receipt
Recovery Medium	RPMI 1640+10% FBS+1% P.S
Growth medium	RPMI 1640+10% FBS+1% P.S+3.5 μg/mL Blasticidin
Note	None
Freezing Medium	90% FBS+10% DMSO
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	Jurkat cells are classified as BSL-1 by ATCC and BSL-2 by ECACC, constructed using non-viral vectors; please choose appropriate biosafety measures according to local regulations.
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
Clear Flat-Bottom Immuno Nonsterile 96-Well Plates	Thermo/442404
PMA/TPA	Beyotime/S1819
Ionomycin	MCE/HY-13434
Anti-CD3 epsilon hIgG1 Antibody [OKT-3 (muromonab)]	Genomeditech/GM-51478AB
Anti-H_CD28 hIgG4 Antibody(Theralizumab)	Genomeditech/GM-27197AB
GMOne-Step Luciferase Reporter Gene Assay Kit	Genomeditech/GM-040503

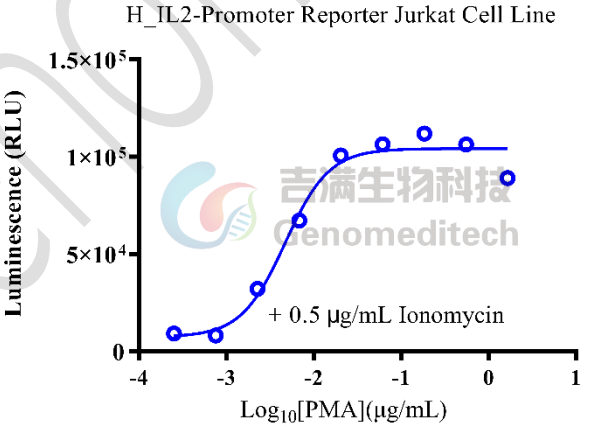
Genomeditech (Shanghai) Co.,Ltd.
Order: +86 021-68455258/50432826/50432825
Toll-free: +86 400 627 9288
Email: service@genomeditech.com

Figures



	H_IL2-Promoter Reporter Jurkat
EC50	0.4366

Figure 1 | Response to OKT-3 and Anti-H_CD28 hIgG4 Antibody. H_IL2-Promoter Reporter Jurkat Cell Line (Cat. GM-C25629) at a concentration of 1E5 cells/well in a 96-well format. The wells were coated overnight with serial dilutions of Anti-CD3 epsilon Antibody [OKT-3 (muromonab)] (Cat. GM-51478AB) and Anti-H_CD28 hIgG4 Antibody(Theralizumab) (Cat. GM-27197AB) in assay buffer (RPMI 1640 + 1% FBS + 1% P.S). After coating, the cells were added and incubated 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 [136.9]. Data are shown by drug mass concentration.



	H_IL2-Promoter Reporter Jurkat
EC50	0.004748

Figure 2 | Response to PMA/TPA and Ionomycin. The H_IL2-Promoter Reporter Jurkat Cell Line (Cat. GM-C25629) at a concentration of 1E5 cells/well (96-well format) were stimulated with 50 ng/wells Ionomycin (MCE/HY-13434) and serial dilutions of PMA/TPA (Beyotime/S1819) in assay buffer (RPMI 1640 + 1% FBS + 1% P.S) for 6 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.

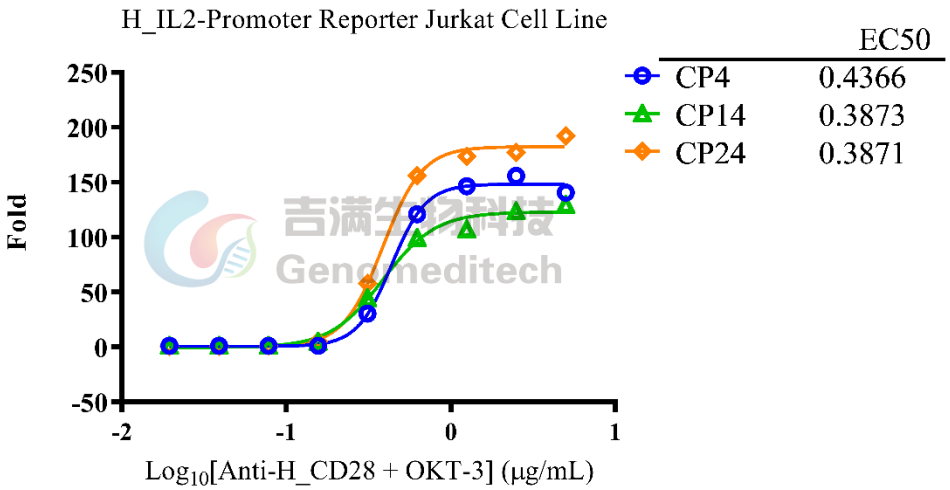


Figure 3 | The passage stability of response to OKT-3 and Anti-H_CD28 hIgG4 Antibody. The passage 4, 14 and 24 of H_IL2-Promoter Reporter Jurkat Cell Line (Cat. GM-C25629) at a concentration of 1E5 cells/well in a 96-well format. The wells were coated overnight with serial dilutions of Anti-CD3 epsilon Antibody [OKT-3 (muromonab)] (Cat. GM-51478AB) and Anti-H_CD28 hIgG4 Antibody(Theralizumab) (Cat. GM-27197AB) in assay buffer (RPMI 1640 + 1% FBS + 1% P.S). After coating, the cells were added and incubated 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.

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.

Genomeditech (Shanghai) Co.,Ltd.
Order: +86 021-68455258/50432826/50432825
Toll-free: +86 400 627 9288
Email: service@genomeditech.com

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

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

TCR	
H_FOXP3-Promoter Reporter Jurkat Cell Line	NFAT-Luc Reporter Jurkat Cell Line
TCR Knockout Reporter Cell Line(CD4+)	OKT3(CD3 ScFv) CHO-K1 Cell Line
Anti-CD3-CD19 Bispecific Antibody(Blinatumomab)	

Genomeditech (Shanghai) Co.,Ltd.
Order: +86 021-68455258/50432826/50432825
Toll-free: +86 400 627 9288
Email: service@genomeditech.com

Limited Use License Agreement

Genomeditech (Shanghai) Co., Ltd grants to the Licensee all intellectual property rights, exclusive, non-transferable, and non-sublicensable rights of the Licensed Materials; Genomeditech (Shanghai) Co., Ltd will retain ownership of the Licensed Materials, cell line history packages, progeny, and the Licensed Materials including modified materials.

Between Genomeditech (Shanghai) Co., Ltd, and Licensee, Licensee is not permitted to modify cell lines in any way. The Licensee shall not share, distribute, sell, sublicense, or otherwise provide the Licensed Materials, or progenitors to third parties such as laboratories, departments, research institutions, hospitals, universities, or biotechnology companies for use other than for the purpose of outsourcing the Licensee's research.

Please refer to the Genomeditech Cell Line License Agreement for details.