Genomeditech (Shanghai) Co.,Ltd.
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Product Sheet

H_PD1 SHP1 Reporter Jurkat Cell line

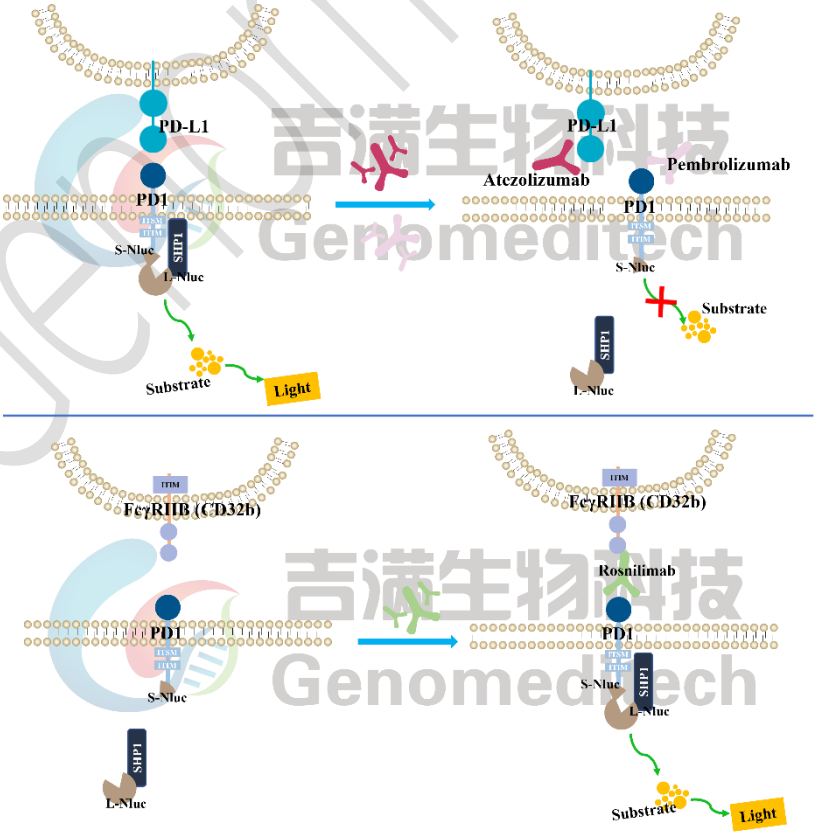
Catalog number: GM-C42135

Version 3.3.1.251212

Programmed cell death protein 1 (PD-1, CD279) is an immune checkpoint receptor on activated T cells, B cells, and some myeloid cells, in the immunoglobulin superfamily. Binding PD-L1 or PD-L2 phosphorylates tyrosine in ITIM/ITSM motifs, recruiting SH2-containing phosphatases, mainly SHP-2 (PTPN11) and sometimes SHP-1 (PTPN6).

SHP-1, highly expressed in hematopoietic cells, inhibits signaling by dephosphorylating TCR, BCR, and downstream molecules, blocking PI3K–AKT and RAS–MAPK pathways to reduce activation and effector function. In tumors and chronic infections, persistent PD-1 signaling recruits SHP-1/2, suppresses T-cell metabolism and cytotoxicity, induces exhaustion, and enables immune evasion via this axis.

H_PD1 SHP1 Reporter Jurkat Cell line is a clonal stable Jurkat cell line constructed using lentiviral technology, constitutive expression of the PD1 receptor gene，and detected using enzyme fragment complementation (EFC) technology. Upon ligand binding or antibody-mediated crosslinking, receptor tyrosine residues are phosphorylated and specifically recruit Src homology region 2 domain–containing phosphatase-1 (SHP-1) fused with a downstream luciferase reporter gene. Upon addition of the luciferase substrate, the enzyme catalyzes the substrate reaction, producing a detectable luminescent signal. Therefore, this system can be used to evaluate the in vitro efficacy of related drugs.



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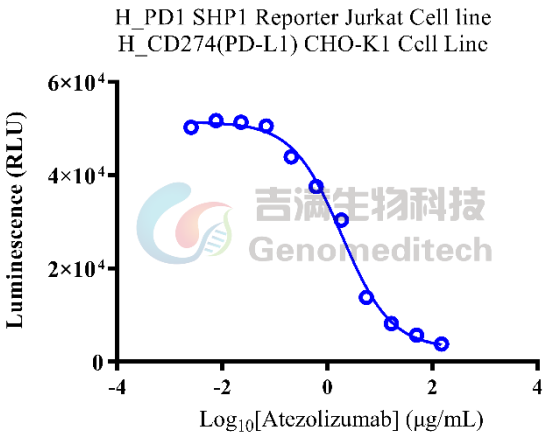
Specifications

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	RPMI 1640+10% FBS+1% P.S
Growth medium	RPMI 1640+10% FBS+1% P.S+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

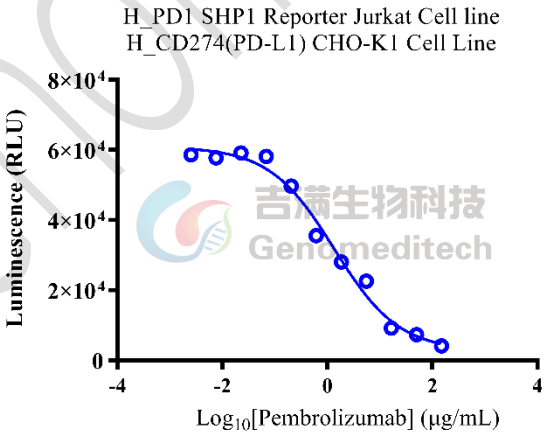
Reagent	Manufacturer/Catalogue No.
RPMI 1640	gibco/C11875500BT
Fetal Bovine Serum	ExCell/FSP500
Pen/Strep	Thermo/15140-122
Puromycin	Genomeditech/GM-040401
H_FCGR2B(CD32B) CHO-K1 Cell Line	Genomeditech/GM-C16925
H_CD274(PD-L1) CHO-K1 Cell Line	Genomeditech/GM-C01115
Anti-PD1 hIgG4 Reference Antibody (Pembio)	Genomeditech/GM-87802MAB
Anti-PD1 hIgG1 Reference Antibody(Rosnbio)	Genomeditech/GM-87930MAB
Anti-H_PDL1 hIgG1 Reference Antibody(Atezbio)	Genomeditech/GM-86854MAB

Figures



	H_PD1 SHP1 Reporter Jurkat
EC50	1.891

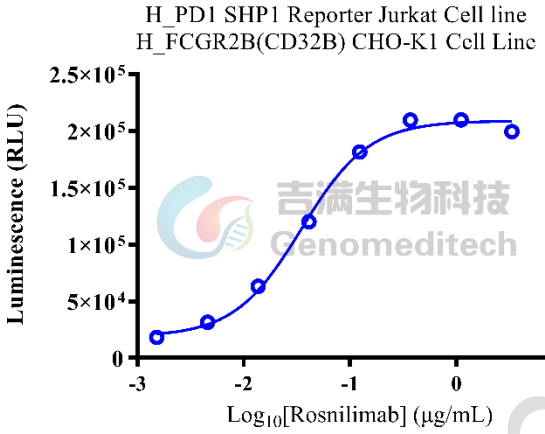
Figure 1 | Response to Atezolizumab. H_CD274(PD-L1) CHO-K1 Cell Line (Cat. GM-C01115) was seeded at a density of 1E4 cells per well in a 96-well plate and incubated overnight. The next day, aspirate the supernatant, then add serially diluted H_PDL1 hIgG1 reference antibody (Atezbio)(cat. GM-86854MAB) and incubate for 1 h. After 1 h, add 1E5 cells/well of the H_PD1 SHP1 Reporter Jurkat Cell Line (Cat. GM-C42135). The mixture was incubated for an additional 6 hours. Firefly luciferase activity was then measured using the Luciferase Reporter Assay Kit (Genomeditech). The results indicated maximum blocking folds of approximately [13.4]. Data are shown by drug mass concentration.



	H_PD1 SHP1 Reporter Jurkat
EC50	1.356

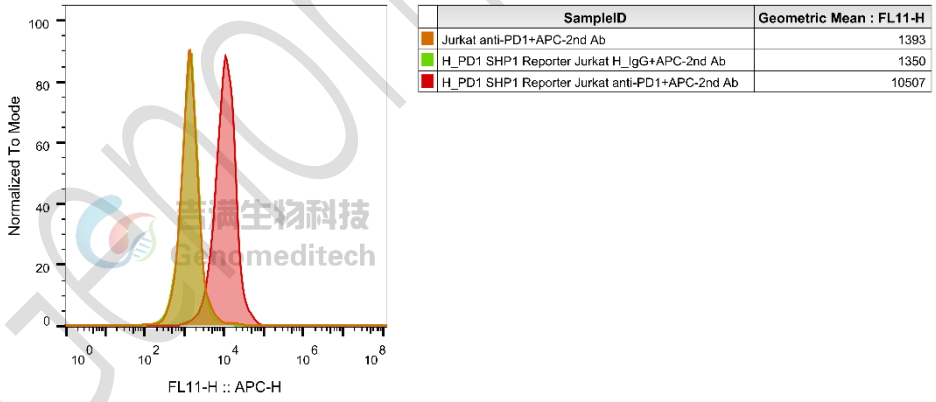
Figure 2 | Response to Pembrolizumab. H_CD274(PD-L1) CHO-K1 Cell Line (Cat. GM-C01115) was seeded at a density of 1E4 cells per well in a 96-well plate and incubated overnight. The next day, serial dilutions of the Anti-PD1 hIgG4 Reference Antibody (Pembio) (Cat. GM-87802MAB) were incubated with 1E5 cells/well of the H_PD1 SHP1 Reporter Jurkat Cell line(Cat. GM-C42135) in a 96-well plate for 1 hour, and then added to the pre-seeded cells. The mixture was incubated for an additional 6 hours. Firefly luciferase activity was then measured using the

Luciferase Reporter Assay Kit (Genomeditech). The results indicated maximum blocking folds of approximately [12.1]. Data are shown by drug mass concentration.



	H_PD1 SHP1 Reporter Jurkat
EC50	0.03504

Figure 3 | Response to Rosnilimab. Serial dilutions of the Anti-PD1 hIgG1 Reference Antibody(Rosnbio) (Cat. GM-87930MAB)and 1E5 cells/well of the H_PD1 SHP1 Reporter Jurkat Cell line (Cat. GM-C42135) were added to 1E4 cells/well of H_FCGR2B(CD32B) CHO-K1 Cell Line (Cat. GM-C16925) for 6 hours. The maximum induction fold was approximately [15.7]. Data are shown by drug mass concentration.



SampleID	Geometric Mean : FL11-H
Jurkat anti-PD1+APC-2nd Ab	1393
H_PD1 SHP1 Reporter Jurkat H_IgG+APC-2nd Ab	1350
H_PD1 SHP1 Reporter Jurkat anti-PD1+APC-2nd Ab	10507

Figure 4 | H_PD1 SHP1 Reporter Jurkat Cell line (Cat. GM-C42135) was determined by flow cytometry using Anti-PD1 hIgG4 Reference Antibody (Pembio) (Cat. GM-C42135).

Cell Recovery

Recovery Medium: RPMI 1640+10% FBS+1% P.S

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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+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

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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

PD-1:PD-L1(B7-H1):PDL2	
Mouse_PDL1 KO LLC1 Cell Line	Mouse_PDL1 KO MC38 Cell Line
aAPC(OKT3) PDL1 CHO-K1 Cell Line	H_PD-1 Reporter Jurkat Cell Line
H_PDCD1LG2(PDL2) aAPC CHO-K1 Cell Line	Mouse PDL1 aAPC CHO-K1 Cell Line
Mouse_PD-1 Reporter Jurkat Cell Line	Canine_PD-1 CHO-K1 Cell Line
Canine_PD-1 HEK-293 Cell Line	Cynomolgus_PD1 CHO-K1 Cell Line
Cynomolgus_PD-L1 HEK-293 Cell Line	H_CD274(PD-L1) CHO-K1 Cell Line
H_CD274(PD-L1) MC38 Cell Line	H_PDCD1(PD-1) CHO-K1 Cell Line
H_PDCD1(PD-1) CHO-K1 Cell Line (Low Expression)	H_PDCD1(PD-1) HEK-293 Cell Line
H_PDCD1LG2(PDL2) CHO-K1 Cell Line	H_PD-L1 HEK-293 Cell Line
H_PDL1 LLC1(mouse_PDL1 KO) Cell Line	H_PDL1 LLC1(mouse_PDL1 KO) Cell Line
H_PDL1 MC38(mouse PDL1 KO) Cell Line	H_PD-L1 Raji Cell Line
M_PDCD1(PD-1) CHO-K1 Cell Line	
Anti-Canine_PD1 mIgG2a Antibody(4F12-E6)	Anti-H_CD274(PDL1) hIgG1 Antibody(Atezolizumab)
Anti-H_PDCD1(PD1) hIgG1 Antibody(Budigalimab)	Anti-H_PDCD1LG2 mIgG1 Antibody(3G2)
Anti-H_PDL1 hIgG1 Reference Antibody(Atezbio)	Anti-mouse PD1 RIgG2a Antibody(RMP1-14)
Anti-mouse PD-L1 mIgG1 Antibody(10F.9G2)	Anti-Mouse_PD1 mIgG1 Antibody(29F.1A12)
Anti-mouse_PD1 mIgG1 Antibody(RMP1-14)	
Anti-PD1 hIgG1 Reference Antibody(Rosnbio)	Anti-PD1 hIgG4 Antibody(Pembrolizumab)
Anti-PD1 hIgG4 Reference Antibody (Nivbio)	Anti-PD1 hIgG4 Reference Antibody (Pembio)
Anti-PD1 hIgG4 Reference Antibody (Sintbio)	Anti-PD-1 hIgG4 Reference Antibody (Torbio)
Anti-PD1 hIgG4 Reference Antibody(Cambio)	Anti-PD-1 hIgG4 Reference Antibody(Tislbio)
Anti-PD-L1 hIgG1 Reference Antibody(Avebio)	Anti-PDL1 hIgG4 Reference Antibody(Adebio)
Anti-PD-L2 hIgG1 Antibody(Hz25G4-1.1)	
Biotinylated Human PD1 Protein; His-Avi Tag	Biotinylated Human PDL1 Protein; His-Avi Tag
Canine PD1 Protein; hFc Tag	Cynomolgus PDL1 Protein; His Tag
Human PD1 Protein; hFc Tag	Human PD1 Protein; His Tag
Human PDL1 Protein; His Tag	Human PDL1 Protein; mFc Tag
Human PDL2 Protein; mFc Tag	Mouse PDL1 Protein; His Tag

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