Genomeditech (Shanghai) Co.,Ltd.
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Product Sheet

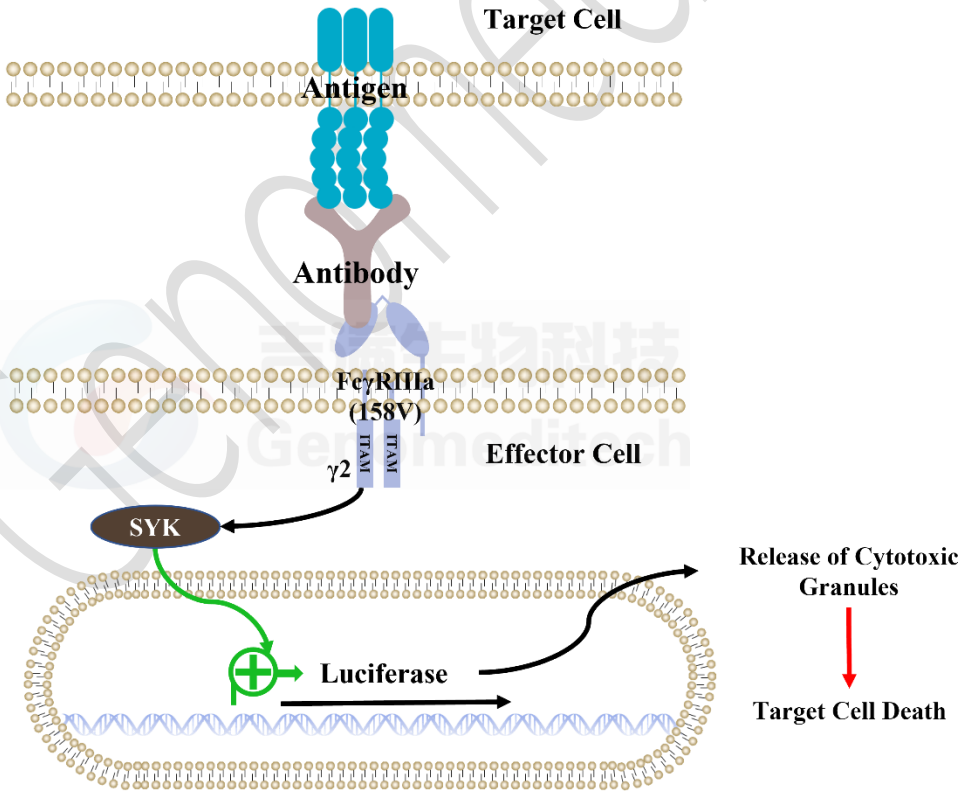
ADCC FcγRIIIa(158V) Jurkat Effector Cell Line

Catalog number: GM-C05619

Version 3.3.1.241205

ADCC, or antibody-dependent cell-mediated cytotoxicity, refers to the process by which immune cells expressing Fc receptors directly kill target cells that specifically bind to antibodies through recognition of the Fc region of the antibodies. Nowadays, the mechanism of ADCC is used to detect and evaluate the efficacy of antibodies or target cells. Antibodies bind to target antigens on the cell surface. If the Fc region of the antibody simultaneously binds to the FcγRIIIa receptor on the surface of effector cells (primarily natural killer cells), the two types of cells undergo multiple cross-linking, leading to the activation of the ADCC signaling pathway. The 158V variant is a polymorphism where valine (V) replaces phenylalanine (F) at position 158, and the 158V mutation exhibits high affinity.

ADCC FcγRIIIa(158V) Jurkat Effector Cell Line is a clonal stable Jurkat cell line constructed using lentiviral technology, constitutive expression of the FcγRIIIa(158V) gene, along with signal-dependent expression of a luciferase reporter gene. When IgG binds to target cells and effector cells, it leads to the expression of luciferase, which can be used to evaluate the biological activity of antibodies in the mechanism of ADCC.



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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 Blastincidin+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
Puromycin	Genomeditech/GM-040401
H_CLDN18.2(isoform2) CHO-K1 Cell Line	Genomeditech/GM-C05273
Raji Cell Line	Genomeditech/GM-C19100
Anti-CLDN18.2 hIgG1 Antibody(Zolbetuximab)	Genomeditech/GM-34137AB
Anti-H_MS4A1(CD20) hIgG1 Antibody(Ocrelizumab)	Genomeditech/GM-27200AB
PE anti-human CD16 Antibody	BioLegend/302007
GMOne-Step Luciferase Reporter Gene Assay Kit	Genomeditech/GM-040503

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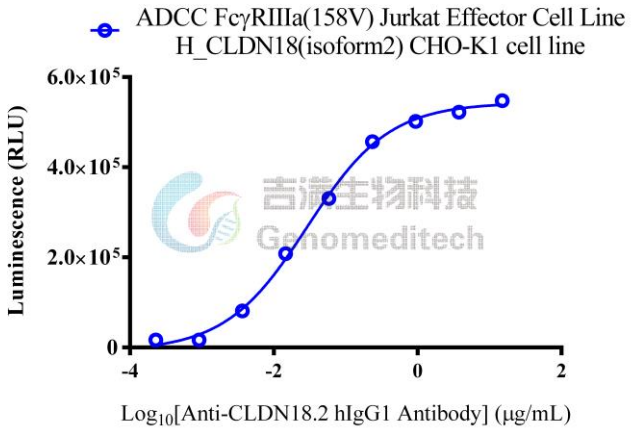
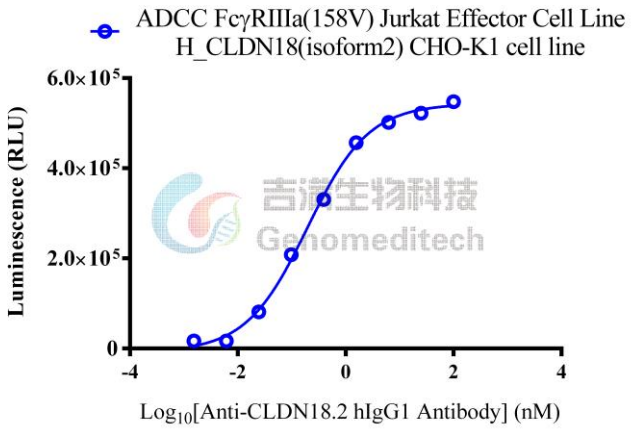
Figures



	ADCC 158V Jurkat Effector
EC50	0.02919

Figure 1 | Response to Anti-CLDN18.2 hIgG1 Antibody. Serial dilutions of the Anti-CLDN18.2 hIgG1 Antibody(Zolbetuximab) (Cat. GM-34137AB) and 1.5E5 cells/well of the ADCC FcγRIIIa(158V) Jurkat Effector Cell Line (Cat. GM-C05619) were added to 1.5E4 cells/well of H_CLDN18.2 CHO-K1 cell line (Cat. GM-C05273) for 6 hours. Firefly luciferase activity is then measured using the GMOne-Step Luciferase Reporter Gene Assay Kit (Cat. GM-040503). The maximum induction fold was approximately[49.8]. Data are shown by drug mass concentration.



	ADCC 158V Jurkat Effector
EC50	0.1946

Figure 2 | Response to Anti-CLDN18.2 hIgG1 Antibody. Serial dilutions of the Anti-CLDN18.2 hIgG1 Antibody(Zolbetuximab) (Cat. GM-34137AB) and 1.5E5 cells/well of the ADCC FcγRIIIa(158V) Jurkat Effector Cell Line (Cat. GM-C05619) were added to 1.5E4 cells/well of H_CLDN18.2 CHO-K1 cell line (Cat. GM-C05273) for 6 hours. Firefly luciferase activity is then measured using the GMOne-Step Luciferase Reporter Gene Assay Kit (Cat. GM-040503). The maximum induction fold was approximately[49.8]. Data are shown by drug molar concentration.

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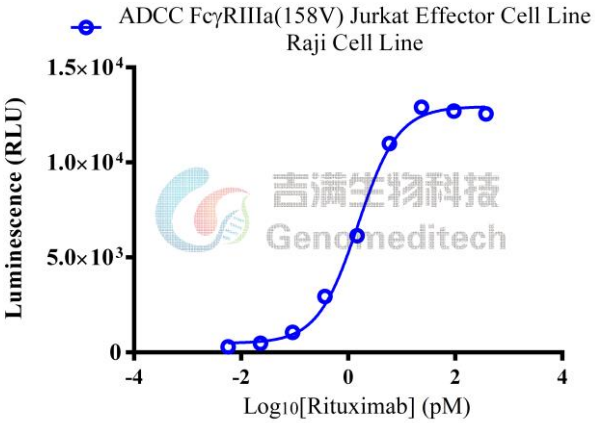

	ADCC 158V Jurkat Effector -Raji
EC50	1.523

Figure 3 | Response to Anti-CD20(Rituximab). Serial dilutions of the Anti-CD20(Rituximab) and 1.5E5 cells/well of the ADCC FcγRIIIa(158V) Jurkat Effector Cell Line (Cat. GM-C05619) were added to 2.5E4 cells/well of Raji cell line (Cat. GM-C19100) for 6 hours. Firefly luciferase activity is then measured using the GMOne-Step Luciferase Reporter Gene Assay Kit (Cat. GM-040503). The maximum induction fold was approximately[45.9]. Data are shown by drug molar concentration.

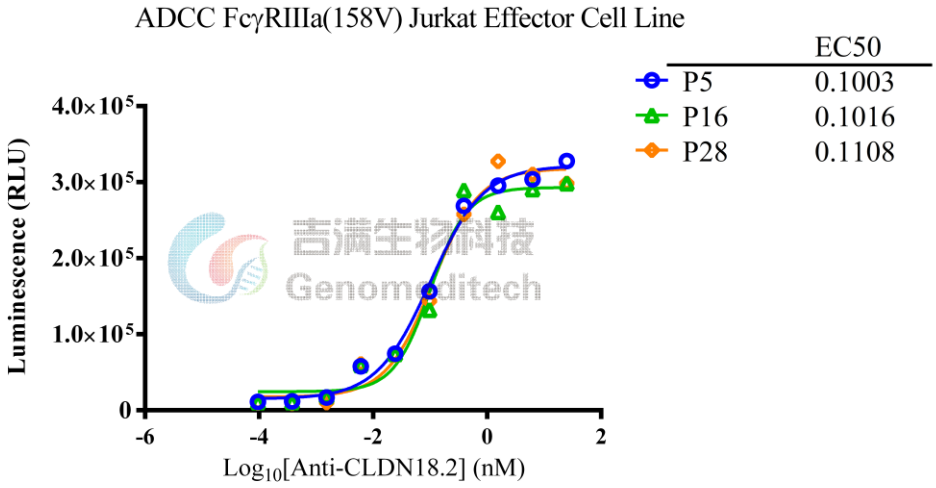

Figure 4 | Response to Anti-CLDN18.2 hIgG1 Antibody. Serial dilutions of the Anti-CLDN18.2 hIgG1 Antibody(Zolbetuximab) (Cat. GM-34137AB) and 1.5E5 cells/well of the passage 5, 16 and 28 of the ADCC FcγRIIIa(158V) Jurkat Effector Cell Line (Cat. GM-C05619) were added to 1.5E4 cells/well of H_CLDN18.2 CHO-K1 cell line (Cat. GM-C05273) for 6 hours. Firefly luciferase activity is then measured using the GMOne-Step Luciferase Reporter Gene Assay Kit (Cat. GM-040503). Data are shown by drug molar concentration.

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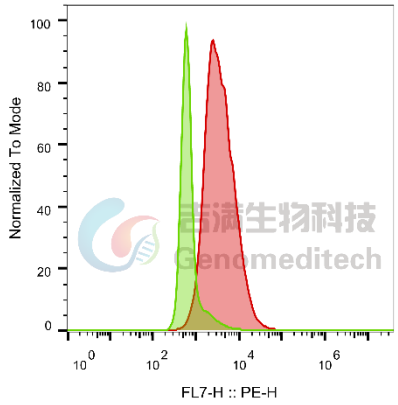
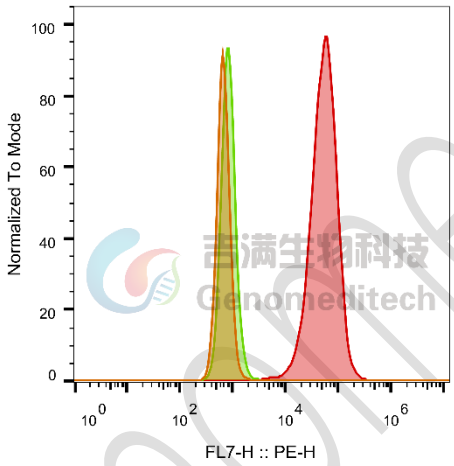


SampleID	Geometric Mean : FL7-H
ADCC FcγRIIIa(158V) Jurkat Effector PE-M_IgG	697
ADCC FcγRIIIa(158V) Jurkat Effector PE-Anti-CD16	3664

Figure 5 | ADCC FcγRIIIa(158V) Jurkat Effector Cell Line (Cat. GM-C05619) was determined by flow cytometry using PE anti-human CD16 Antibody (BioLegend/302007).



SampleID	Geometric Mean : FL7-H
Raji Null	684
Raji H_IgG+PE-2nd Ab	853
Raji anti-CD20+PE-2nd Ab	52017

Figure 6 | Raji cell line (Cat. GM-C19100) was determined by flow cytometry using Anti-H_MS4A1(CD20) hIgG1 Antibody(Ocrelizumab) (Cat. GM-27200AB).

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).

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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 Blastincidin+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.

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Related Products

FcγR	
Cynomolgus_FcRn MDCK Cell Line	H_FCGR1A(CD64) CHO-K1 Cell Line
H_FCGR1A(CD64) HEK-293 Cell Line	H_FCGR2A(CD32A) CHO-K1 Cell Line
H_FCGR2B(CD32B) CHO-K1 Cell Line	H_FCGR3A(CD16a) 158F CHO-K1 Cell Line
H_FCGR3A(CD16a) 158V CHO-K1 Cell Line	H_FCGR3B(CD16b) CHO-K1 Cell Line
H_FcRn CHO-K1 Cell Line	H_FcRn MDCK Cell Line
Mouse_FcRn MDCK Cell Line	
Anti-FcRn hIgG4 Reference Antibody(Rozabio)	Anti-H_FcRn IgG4 Antibody(Rozanolixizumab)
Anti-Mouse CD1632 mIgG2b Antibody(2.4G2)	
ADCCP	
ADCC FcγRIIIa(158F) Jurkat Effector Cell Line	ADCC FcγRIIIa(158V) DDX35TM Jurkat Effector Cell Line
ADCC M_FcγRIV Jurkat Effector Cell Line	ADCP FcγRIIa DDX35TM Jurkat Effector Cell Line
ADCP FcγRIIa Jurkat Effector Cell Line	ADCP FcγRIIb Jurkat Effector Cell Line

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