Genomeditech (Shanghai) Co.,Ltd.
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Product Sheet

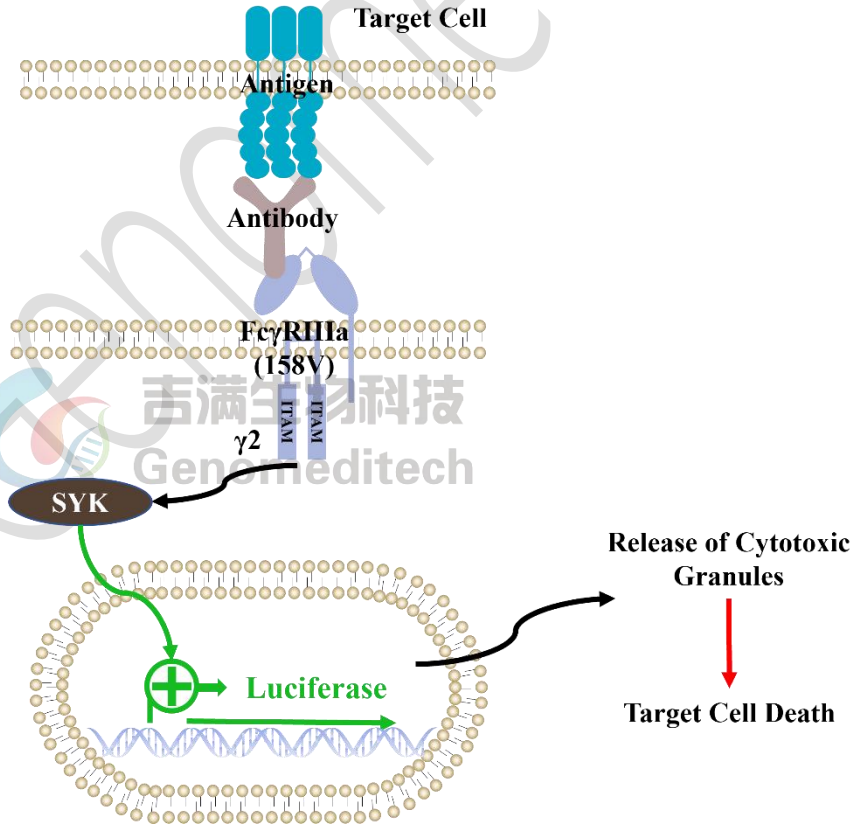
ADCC FcγRIIIa(158V) Reporter NK-92 Cell Line

Catalog number: GM-C34558

Version 3.3.1.250801

Antibody-dependent cell-mediated cytotoxicity (ADCC) refers to the process by which immune cells expressing Fc receptors recognize the Fc region of antibodies and directly kill target cells bound by these antibodies. Today, the ADCC mechanism is widely used to evaluate the efficacy of antibodies and target cells. When an antibody binds to the target antigen on a cell surface, its Fc region can also bind to FcγRIIIa receptors on effector cells—primarily natural killer (NK) cells—leading to cross-linking of the two cell types and activation of the ADCC signaling pathway. The ultimate outcome of this pathway is the lysis of the target cell, which serves as a key endpoint in classical ADCC bioassays. Traditional ADCC assays use donor-derived peripheral blood mononuclear cells (PBMCs) or NK cell subsets as effector cells, but these cells exhibit significant variability, are difficult to prepare, and often generate high background signals.

ADCC FcγRIIIa(158V) Reporter NK-92 Cell Line is a clonal stable NK-92 cell line constructed using non-viral transfection, constitutive expression of the FcγRIIIa (158V) gene, along with signal-dependent expression of a luciferase reporter gene. When antibodies bind to target cells, FcγRIIIa-mediated signaling activates reporter gene expression, resulting in a quantifiable luminescent signal.



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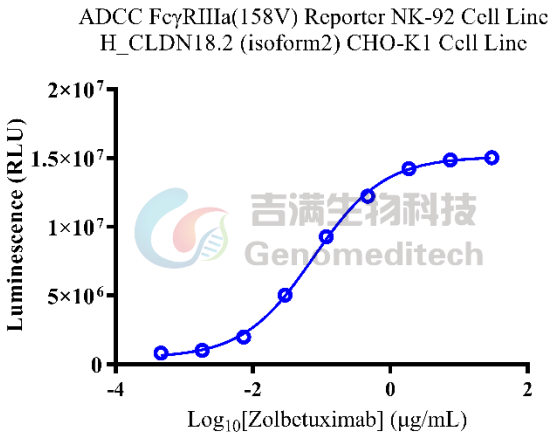
Specifications

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	Specialized Culture Medium for NK-92 Cells
Growth medium	Specialized Culture Medium for NK-92 Cells
Note	Cells should be cultured using Procell-CM-0530 NK-92 Cell Culture Medium.
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

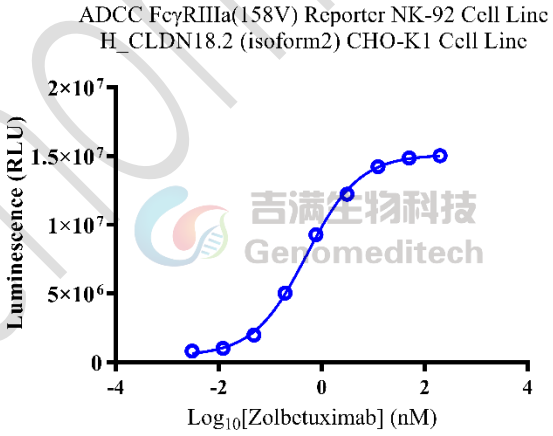
Reagent	Manufacturer/Catalogue No.
Specialized Culture Medium for NK-92 Cells	Procell/CM-0530
H_CLDN18.2(isoform2) CHO-K1 Cell Line	Genomeditech/GM-C05273
Anti-CLDN18.2 hIgG1 Antibody(Zolbetuximab)	Genomeditech/GM-34137AB
GMOne-Step 2.0 Luciferase Reporter Gene Assay Kit	Genomeditech/GM-040513

Figures



	FcγRIIIa(158V) Reporter NK-92
EC50	0.07641

Figure 1 | Response to Anti-CLDN18.2 hIGg1 Antibody (Zolbetuximab). Serial dilutions of the Anti-CLDN18.2 hIGg1 Antibody (Zolbetuximab) (Cat. GM-34137AB) and 1E5 cells/well of the ADCC FcγRIIIa(158V) Reporter NK-92 Cell Line (Cat. GM-C34558) were added to 1E4 cells/well of H_CLDN18.2 (isoform2) CHO-K1 Cell Line (Cat. GM-C05273) for 6 hours. Firefly luciferase activity is then measured using the GMOne-Step 2.0 Luciferase Reporter Gene Assay Kit (Cat. GM-040513). The maximum induction fold was approximately[19.7]. Data are shown by drug mass concentration.



	FcγRIIIa(158V) Reporter NK-92
EC50	0.5094

Figure 2 | Response to Anti-CLDN18.2 hIGg1 Antibody (Zolbetuximab). Serial dilutions of the Anti-CLDN18.2 hIGg1 Antibody (Zolbetuximab) (Cat. GM-34137AB) and 1E5 cells/well of the ADCC FcγRIIIa(158V) Reporter NK-92 Cell Line (Cat. GM-C34558) were added to 1E4 cells/well of H_CLDN18.2 (isoform2) CHO-K1 Cell Line (Cat. GM-C05273) for 6 hours. Firefly luciferase activity is then measured using the GMOne-Step 2.0 Luciferase Reporter Gene Assay Kit (Cat. GM-040513). The maximum induction fold was approximately[19.7]. Data are shown by drug molar concentration.

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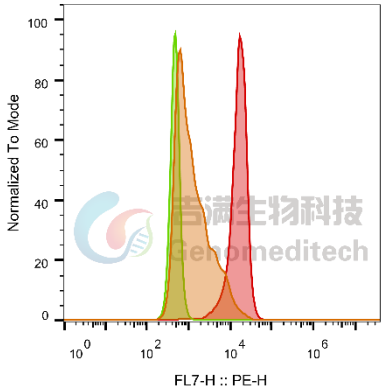

SampleID	Geometric Mean : FL7-H
NK-92 PE-anti-CD16 Ab	1295
ADCC FcγRIIIa(158V) NK-92 Effector PE-Mouse_IgG Ab	484
ADCC FcγRIIIa(158V) NK-92 Effector PE-anti-CD16 Ab	15642

Figure 3 | ADCC FcγRIIIa(158V) Reporter NK-92 Cell Line (Cat. GM-C34558) was determined by flow cytometry using PE anti-human CD16 Antibody (Cat. Biolegend/302007).

Cell Recovery

Recovery Medium: NK-92 细胞专用培养基（普诺赛/CM-0530）

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 recovery medium. And dispense into appropriate culture dishes.

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.

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Cell passage

Growth medium: NK-92 细胞专用培养基（普诺赛/CM-0530）

For the first 1 to 2 passages post-resuscitation, use the recovery medium. Once the cells have stabilized, switch to a growth medium.

a) Cell recovery after thawing is challenging, and initial cell growth is slow (approximately one week), with a subset of cells undergoing lysis, leading to a large number of dead cells and cellular debris. The culture condition usually improves after two weeks. It is recommended to centrifuge the culture at 176 × g for 5 minutes every 1–2 weeks to remove part of the cellular debris and particles by discarding the supernatant and replacing it with fresh recovery medium. Upon initial recovery, if the cells are not passaged within 48 hours, it is advisable to supplement the culture with additional recovery medium.

b) When the cell density reaches 1.5–2E6 cells/mL, passage the cells at a 1:3 ratio, and continue subculturing every 2–3 days. Care should be taken not to allow the density to exceed 2E6 cells/mL. Passage cultures are recommended to be maintained in T25 flasks.

c) Except for the first passage post-thaw (which requires centrifugation to collect cells), subsequent media changes or subculturing are preferably carried out using a half-medium change approach: allow the cells to settle by gravity, aspirate half of the spent medium, then add an equal volume of fresh medium to the flask. Gently pipette to resuspend the cells evenly or split them into two new T25 flasks at a 1:2 ratio, and then add fresh complete medium to a final volume of 8–10 mL per flask.

Subcultivation Ratio: Maintain cultures at a cell concentraion between 3E5 and 1E6 viable cells/mL.

Medium Renewal: Every 2 to 3 days

Notes

a) This cell line is highly sensitive to cell density. Please ensure that cell density is maintained within an appropriate range during cultivation and passaging.

b) Cell growth is dependent on IL-2; in the absence of IL-2 in the culture medium, the cells are prone to rapid cell death. IL-2 is stable at -5 to -20°C and should be protected from repeated freeze-thaw cycles. Since IL-2 is prone to degradation, freshly prepared complete medium should be used within one week.

c) Cells grow in clusters (cell aggregation). The presence of numerous cell debris and granules during the logarithmic growth phase is normal. When cell density becomes high or the culture medium turns yellow, partial or complete medium replacement should be performed promptly. During medium change, disperse the cell clusters as much as possible.

Related Products

FcγR	
H_CD32B aAPC CHO-K1 Cell Line	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_FcgRIV FcgRIIb aAPC CHO-K1 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 FcγRIIIa(158V) Jurkat Effector Cell Line	ADCC M_FcγRIV Jurkat Effector Cell Line
ADCP FcγRI Jurkat Effector Cell Line	ADCP FcγRIIa DDX35TM Jurkat Effector Cell Line
ADCP FcγRIIa Jurkat Effector Cell Line	ADCP FcγRIIa R131 Jurkat Effector Cell Line
ADCP FcγRIIb Jurkat Effector Cell Line	

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