

Product Sheet

ADCC FcγRIIIa(158V) NK-92 Cell Line

Catalog number: GM-C44572

Version 4.0.26.929



Specifications

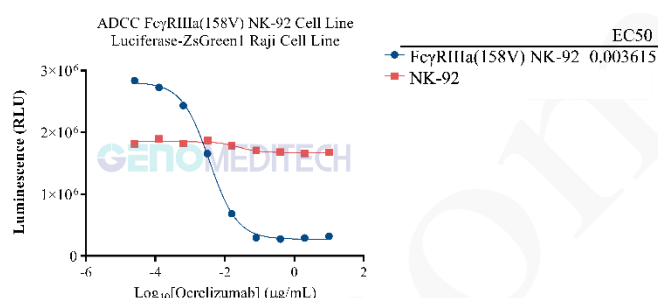
Description	ADCC FcγRIIIa(158V) NK-92 Cell Line is a clonal stable NK-92 cell line that constitutively expresses the Human FcγRIIIa(158V) gene, constructed using electroporation technology.
Quantity	2E6 Cells per vial, 1 mL
Product Format	1 vial of frozen cells
Shipping	Shipped on dry ice
Storage Conditions	Liquid nitrogen immediately upon receipt
Target	Human FcγRIIIa(158V)
Gene ID/Uniprot ID	P08637 (p.F176V)
Host Cell	NK-92
Recovery Medium	NK-92 cell-specific medium supplemented with 100 U/mL IL-2
Growth medium	NK-92 cell-specific medium supplemented with 100 U/mL IL-2
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

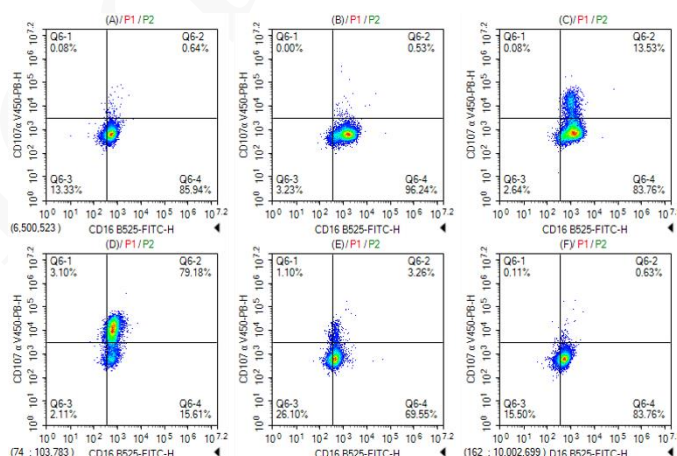
Reagent	Manufacturer/Catalogue No.
Specialized Culture Medium for NK-92 Cells	Procell/CM-0530
PE anti-human CD16 Antibody	BioLegend/302007
Anti-H_MS4A1(CD20) hIgG1 Antibody(Ocrelizumab)	Genomeditech/ GM-27200AB
FITC anti-human CD16 Antibody	Biolegend/302005
APC anti-human CD56 (NCAM) Antibody	Biolegend/318309
Brilliant Violet 421™ anti-human CD107a (LAMP-1) Antibody	Biolegend/328625
Raji Cell Line	Genomeditech/GM-C19100
CytoTox 96®Non-Radioactive Cytotoxicity Assay	Promega/G1780
Countess 3 Automated Cell Counter	ThermoFisher/A49891
NovoCyte Flow Cytometer	Agilent/NovoCyte 2060R
SpectraMax® L Microplate Luminometer	Moleculardevices/SpectraMax L

Data

Applications

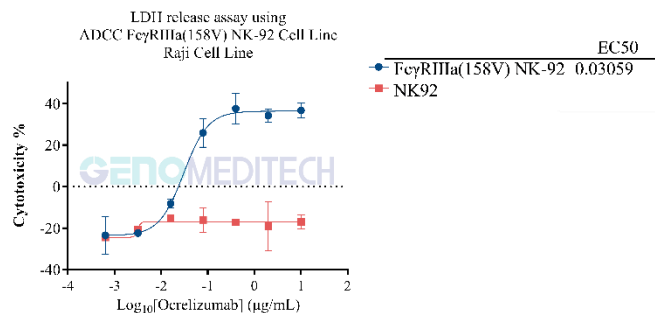


Ocrelizumab-mediated ADCC assays on NK-92 cells. The ADCC FcγRIIIa(158V) NK-92 Cell Line (Cat. GM-C44572) at a density of 1E5 cells/well was co-cultured with Luciferase-ZsGreen1 Raji Cell Line (Cat. GM-C25554) at a density of 2E4 cells/well, in the presence of serial dilutions of the Anti-H_MS4A1(CD20) hIgG1 Antibody(Ocrelizumab) (Cat. [GM-27200AB](#)) in assay buffer (Specialized Culture Medium for NK-92 Cells, without IL-2) for 6 hours (96-well format). The firefly luciferase activity was measured using the Luciferase Reporter Assay Kit (Genomeditech).



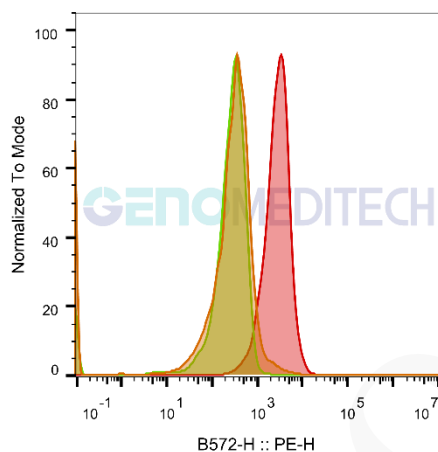
CD107a degranulation flow cytometry validation. The ADCC FcγRIIIa(158V) NK-92 Cell Line (Cat. GM-C44572) was treated with Anti-H_MS4A1(CD20) hIgG1 Antibody(Ocrelizumab) (Cat. [GM-27200AB](#)) or PMA/Iono. FITC anti-human CD16 Antibody (Biolegend/302005) and Brilliant Violet 421™ anti-human CD107a (LAMP-1) Antibody (Biolegend/328625) were analyzed by flow cytometry. Groups: (A) C44572 unstained/unstimulated; (B) C44572+Raji; (C) C44572+Raji+Ocrelizumab; (D) C44572+PMA/Iono; (E) NK92+Raji+Ocrelizumab; (F) C44572+Raji+IgG control. Results show that FcγRIIIa(158V) NK-92 exhibits significant antibody-mediated degranulation, confirming effective ADCC triggering by the high-affinity variant.

Assay Performance



ADCC mediated by Raji and NK-92-derived cell lines was determined as the percentage of maximum LDH release from target cells. The ADCC FcγRIIIa(158V) NK-92 Cell Line (Cat. GM-C44572) at a density of 1×10^5 cells/well was co-cultured with Raji Cell Line (Cat. GM-C19100) at a density of 2×10^4 cells/well in a 96-well U-bottom plate. Serial dilutions of the Anti-H_MS4A1(CD20) hIgG1 Antibody(Ocrelizumab) (Cat. [GM-27200AB](#)) were added in assay buffer (RPMI 1640 + 1% FBS + 1% P.S). After 2 hours of incubation, LDH release was detected using the CytoTox 96®Non-Radioactive Cytotoxicity Assay (Promega/G1780).

Expression



SampleID	Geometric Mean : B572-H
NK-92 PE-anti-CD16 Ab	177
NK-92 H_FCGR3A(CD16A) PE-M_IgG Ab	207
NK-92 H_FCGR3A(CD16A) 158V PE-anti-CD16 Ab	2701

H_FCGR3A(CD16A) 158V NK-92 Cell Line (Cat. GM-C44572) was determined by flow cytometry using PE anti-human CD16 Antibody (Biolegend/302007).

Cell Recovery

Recovery Medium: NK-92 cell-specific medium supplemented with 100 U/mL IL-2

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.

- 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).
- 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.
- 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.
- Resuspend cell pellet with the recommended recovery medium. And dispense into appropriate culture dishes.
- Incubate the culture at 37°C in a suitable incubator. A 5% CO₂ in air atmosphere is recommended if using the medium described on this product sheet.

Cell Freezing

Freezing Medium: 90% FBS+10% DMSO

- Centrifuge at 176 x g for 3 minutes to collect cells.
- Resuspend the cells in pre-cooled freezing medium and adjust the cell density to 5E6 cells/mL.
- Aliquot 1 mL into each vial.
- 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: NK-92 cell-specific medium supplemented with 100 U/mL IL-2

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

- 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.
- 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.
- 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

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

Sequence

FcγRIIIa(158V) [P08637\(p.F176V\)](#)

MWQLLLPTALLLVVSAGMRTEDLPKAVVFLEPQWYRVLEKDSVTLKCQGAYSPEDNSTQWFHNESLISSQASSY
FIDAATVDDSGEYRCQTNLSTLSDPVQLEVHIGWLLLQAPRWVFKEDPIHLRCHSWKNTALHKVTYLQNGKGR
KYFHHNSDFYIPKATLKDSGSYFCRGLVGSKNVSSETVNITITQGLAVSTISSFFPPGYQVSFCLVMVLLFAVDTGL
YFSVKTNIRSSSTRDWKDHKFKWRKDPQDK

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	H_FcRn-GFP HEK-293 Cell Line
Mouse_FcγRIV FcγRIIb aAPC CHO-K1 Cell Line	Mouse_FcγRIV FcγRIIb CHO-K1 Cell Line
Mouse_FcRn MDCK Cell Line	
Anti-FcRn hIgG4 Reference Antibody(Rozabio)	Anti-H_FcRn IgG4 Antibody(Rozanolixizumab)
Anti-Mouse CD16/32 mIgG2b Antibody(2.4G2)	
Human IgG1 Fc Protein; His Tag	
ADCCP	
ADCC FcγRIIIa(158F) Jurkat Effector Cell Line	ADCC FcγRIIIa(158V) DDX35TM Jurkat Effector Cell Line
ADCC FcγRIIIa(158V) Jurkat Effector Cell Line	ADCC FcγRIIIa(158V) Reporter Jurkat(CD3 KO) Cell Line
ADCC FcγRIIIa(158V) Reporter Jurkat(CD3 KO) Cell Line	ADCC FcγRIIIa(158V) Reporter NK-92 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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