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

Product Sheet

STING KO Reporter THP1 Cell Line

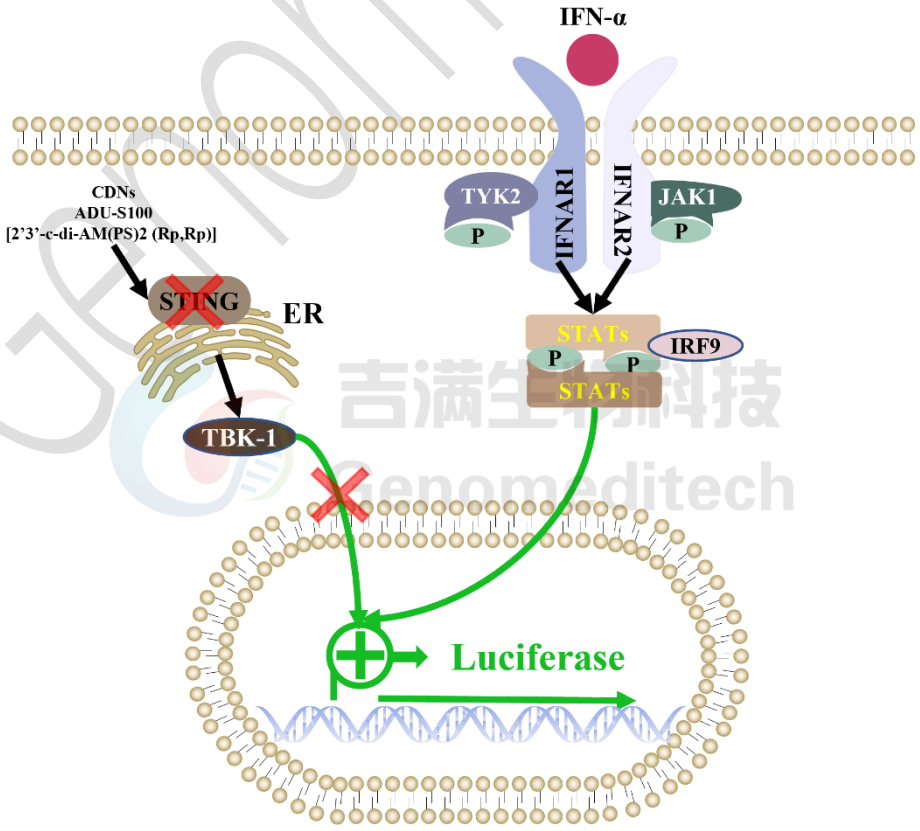
Catalog number: GM-C21622

Version 3.3.1.250116

STING (Stimulator of Interferon Genes) is a key intracellular receptor involved in the immune response to viral and bacterial infections. It recognizes cyclic dinucleotides like cGAMP in the cytoplasm, which are produced by pathogens or synthesized by host cells during infection. STING activation enhances the production of interferons and inflammatory factors, boosting antiviral and antitumor responses.

The STING signaling pathway is mediated by its interaction with TBK1 and IRF3. When STING binds to cGAMP, it recruits TBK1, which phosphorylates IRF3, activating and translocating it to the nucleus. There, IRF3 promotes the transcription of interferon genes, initiating antiviral responses. STING can also activate the NF-κB pathway, enhancing inflammation.

STING Reporter THP1 Cell Line is a clonal stable cell line with signal-dependent expression of a luciferase reporter gene constructed using lentiviral technology, and it endogenously expresses IFNAR gene and knockout STING gene. When IFN-α binds to IFNAR, it activates downstream signaling pathways, leading to the expression of luciferase. This product is usually used in conjunction with STING Reporter THP1 Cell Line. The luciferase activity measurement indicates the activation level of the signaling pathway and can thus be used to evaluate the in vitro effects of drugs related to STING.



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(ATCC)+20% FBS+1% P.S+0.05 mM β-Me
Growth medium	RPMI 1640(ATCC)+10% FBS+1% P.S+0.05 mM β-Me+2 μg/mL Blasticidin+400 μg/mL G418+0.5 μg/mL Puromycin
Note	Cells should be cultured using ATCC/30-2001 RPMI 1640 medium or Growth medium from Genomeditech. The serum should be Cegrogen biotech/A0500-3010 or sourced from Gibco.
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(ATCC)	ATCC/30-2001
Fetal Bovine Serum	Cegrogen biotech/A0500-3010
Pen/Strep	Thermo/15140-122
2-Mercaptoethanol(β-Me)	gibco/21985-023
Blasticidin	Genomeditech/GM-040404
G418	Genomeditech/GM-040402
Puromycin	Genomeditech/GM-040401
STING Reporter THP1 Cell Line	Genomeditech/GM-C21640
ADU-S100 disodium salt	MCE/HY-12885A
Recombinant Human IFN-α2 (carrier-free)	BioLegend/592702
GMOne-Step Luciferase Reporter Gene Assay Kit	Genomeditech/GM-040503

Figures

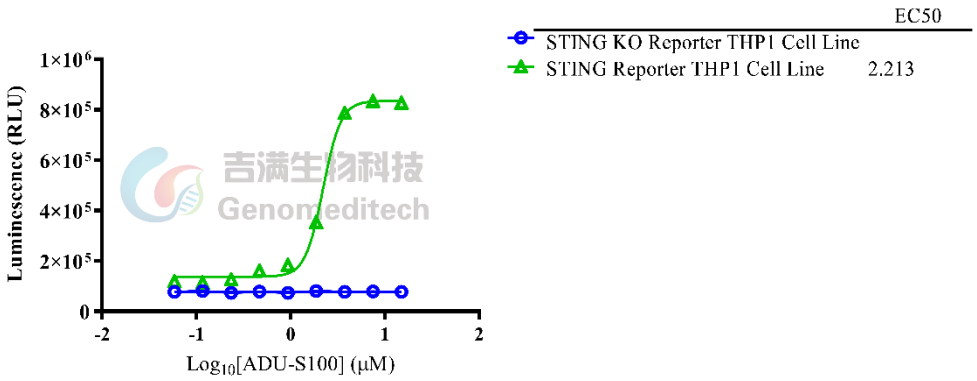


Figure 1 | Response to ADU-S100 disodium salt. The STING Reporter THP1 Cell Line (Cat. GM-C21640) and STING KO Reporter THP1 Cell Line (Cat. GM-C21622) at a concentration of 1E5 cells/well (96-well format) were stimulated with serial dilutions of ADU-S100 disodium salt (MCE/HY-12885A) in assay buffer (RPMI 1640(ATCC) + 1% FBS + 1% P.S) for 16 hours. The firefly luciferase activity was measured using the GMOne-Step Luciferase Reporter Gene Assay Kit (Cat. GM-040503). Data are shown by drug molar concentration.

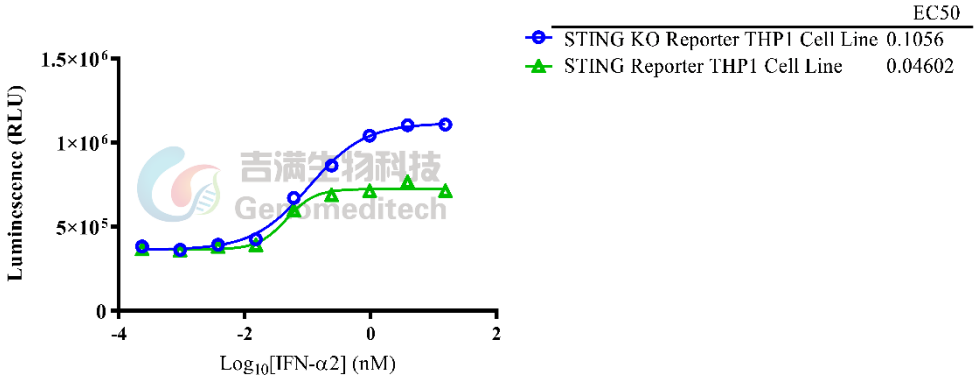


Figure 2 | Response to Recombinant Human IFN-α2 . The STING Reporter THP1 Cell Line (Cat. GM-C21640) and STING KO Reporter THP1 Cell Line (Cat. GM-C21622) at a concentration of 1E5 cells/well (96-well format) were stimulated with serial dilutions of Recombinant Human IFN-α2 (BioLegend/592702) in assay buffer (RPMI 1640(ATCC) + 1% FBS + 1% P.S) for 16 hours. The firefly luciferase activity was measured using the GMOne-Step Luciferase Reporter Gene Assay Kit (Cat. GM-040503). Data are shown by drug molar concentration.

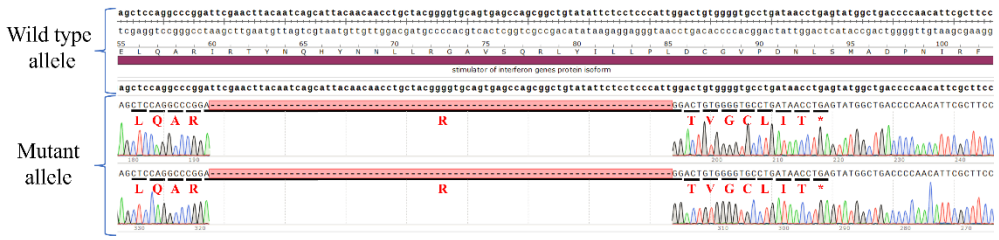
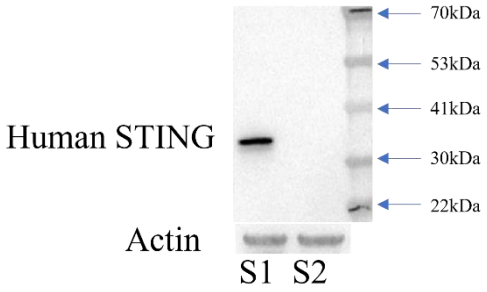


Figure 3 | The Sanger sequencing of the STING KO Reporter THP1 Cell Line showed successful knockout of STING.

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



S1：CON S2： H_STING KO (Cat. GM-C21622)

Figure 4 | The protein expression levels of STING in the STING Reporter THP1 Cell Line (Cat. GM-C21640) and STING KO Reporter THP1 Cell Line (Cat. GM-C21622) were determined by Western blotting (WB).

Cell Recovery

Recovery Medium: RPMI 1640(ATCC)+20% FBS+1% P.S+0.05 mM β-Me

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 an appropriate culture flask and initially place the flask in an upright position after thawing.

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.

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

Cell passage

Growth medium: RPMI 1640(ATCC)+10% FBS+1% P.S+0.05 mM β-Me+2 μg/mL Blasticidin+400 μg/mL G418+0.5 μg/mL Puromycin

During the first two passages after cell thawing, use the recovery medium. Once the cell status stabilizes, switch to growth medium containing antibiotics.

a) When the cell density reaches 8E5 cells/mL, subculture the cells. Do not allow the cell density to exceed 1E6 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 2.5E5 and 8E5 viable cells/mL.

Medium Renewal: Every 2 to 3 days

Notes

a) After thawing, cell growth is slow, and there will be a significant amount of cellular debris in the background. As the cells recover, the background will gradually become cleaner, with a recovery period estimated at 1 to 1.5 weeks.

b) These cells are sensitive to cell density, so please ensure that cell density is maintained within an appropriate range during culture and passaging.

c) The culture medium for these cells must be supplemented with β-mercaptoethanol. Failure to add this supplement may negatively affect cell status.

d) Cells should be cultured using ATCC/30-2001 RPMI 1640 medium or complete medium purchased from Geomeditech. The serum used should be the same as specified in the manual or Gibco serum.

Related Products

TLR7	
H_TLR7 Reporter 293 Cell Line	Mouse_TLR7 Reporter 293 Cell Line
TLR9	
H_TLR9 Reporter 293 Cell Line	Mouse_TLR9 Reporter 293 Cell Line
TLR8	
H_TLR8 Reporter 293 Cell Line	H_TLR8 HEK-293 Cell Line
STING	
H_STING KO THP1 Cell Line	H_STING KO U937 Cell Line
STING Reporter HEK-293 Cell Line	STING Reporter THP1 Cell Line
STING Reporter U937 Cell Line	

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.