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

# Product Sheet

## STING Reporter U937 Cell Line

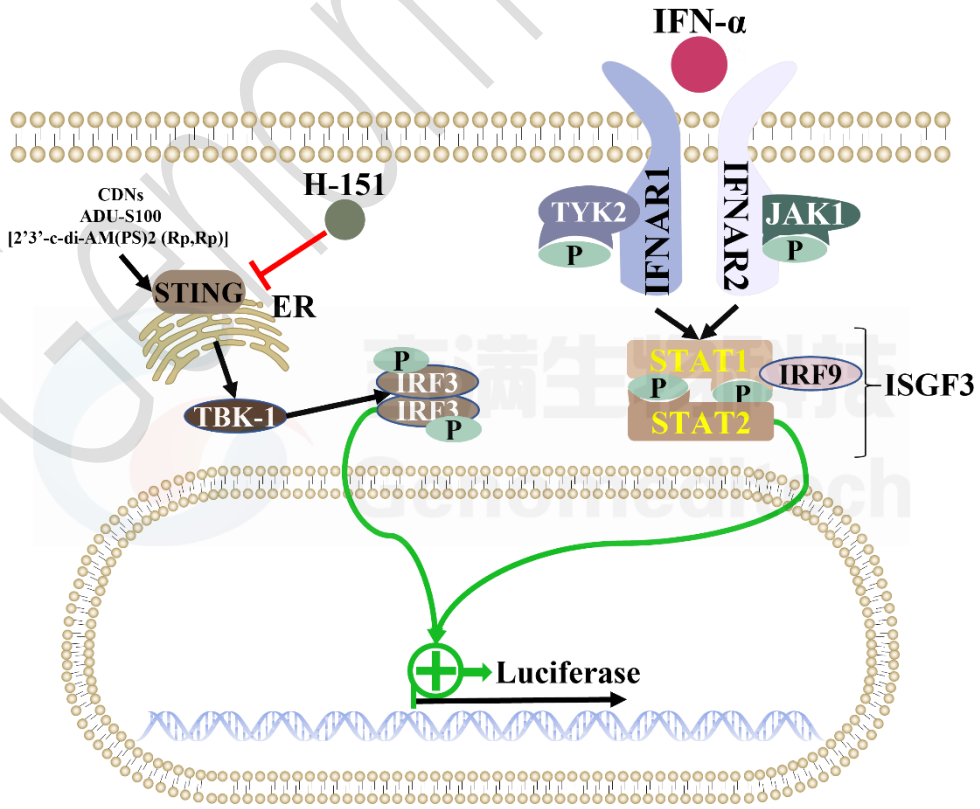
Catalog number: GM-C21917

Version 3.3.1.241217

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 U937 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 STING gene(R232) and IFNAR gene. When ADU-S100 binds to STING, it activates downstream signaling pathways, leading to the expression of luciferase. H-151 can inhibit this signal transmission. 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.



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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+25 μg/mL Blasticidin |
| **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 |
| ADU-S100 disodium salt | MCE/HY-12885A |
| H-151 | MCE/HY-112693 |
| GMOne-Step Luciferase Reporter Gene Assay Kit | Genomeditech/GM-040503 |

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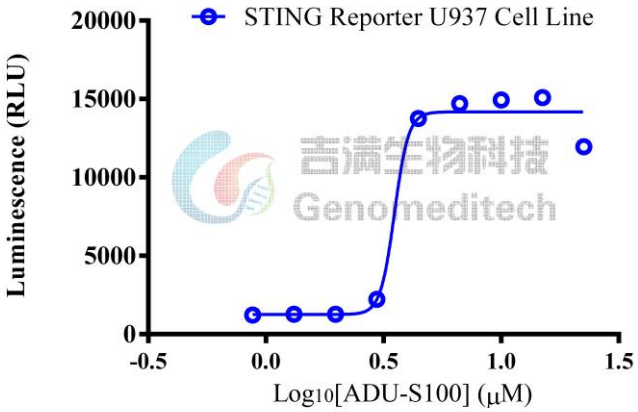
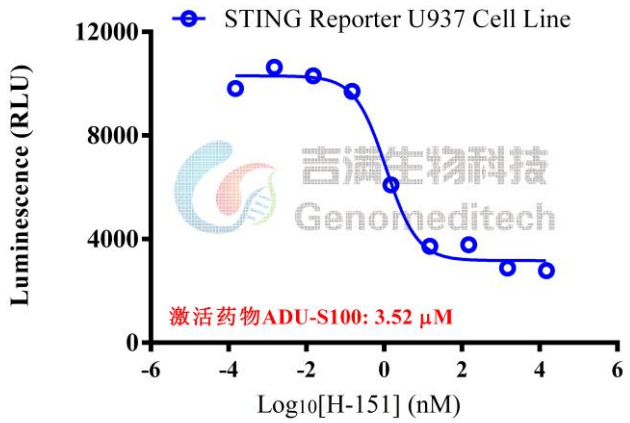
## Figures




| | STING Reporter U937 Cell Line |
|---|---|
| EC50 | 3.520 |

Figure 1 | Response to ADU-S100 disodium salt. The STING Reporter U937 Cell Line (Cat. GM-C21917) at a concentration of 1E5 cells/well (96-well format) was stimulated with serial dilutions of ADU-S100 disodium salt (MCE/HY-12885A) in assay buffer (RPMI 1640 + 1% FBS + 1% P.S) for 7 hours. The firefly luciferase activity was measured using the GMOne-Step Luciferase Reporter Gene Assay Kit (Cat. GM-040503). The maximum induction fold was approximately [10.2]. Data are shown by drug molar concentration.




| | STING Reporter U937 Cell Line |
|---|---|
| IC50 | 1.127 |

Figure 2 | Response to H-151. Serial dilutions of the H-151 (MCE/HY-112693) was incubated with 1E5 cells/well of the STING Reporter U937 Cell Line (Cat. GM-C21917) in a 96-well plate for 1 hour in assay buffer (RPMI 1640 + 1% FBS + 1% P.S). Subsequently, ADU-S100 disodium salt (MCE/HY-12885A) was added to achieve a final concentration of 3.52 μM, and the coculture continued for an additional 7 hours. Firefly luciferase activity is then measured using the GMOne-Step Luciferase Reporter Gene Assay Kit (Cat. GM-040503). The results indicated maximum blocking folds of approximately [3.9]. Data are shown by drug molar concentration.

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## 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).
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+25 μg/mL Blasticidin

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.

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**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.

## 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 KO Reporter THP1 Cell Line | STING Reporter HEK-293 Cell Line |
| STING Reporter THP1 Cell Line | |

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