

# Product Sheet

## IFN $\alpha$ Reporter MDCK Cell Line

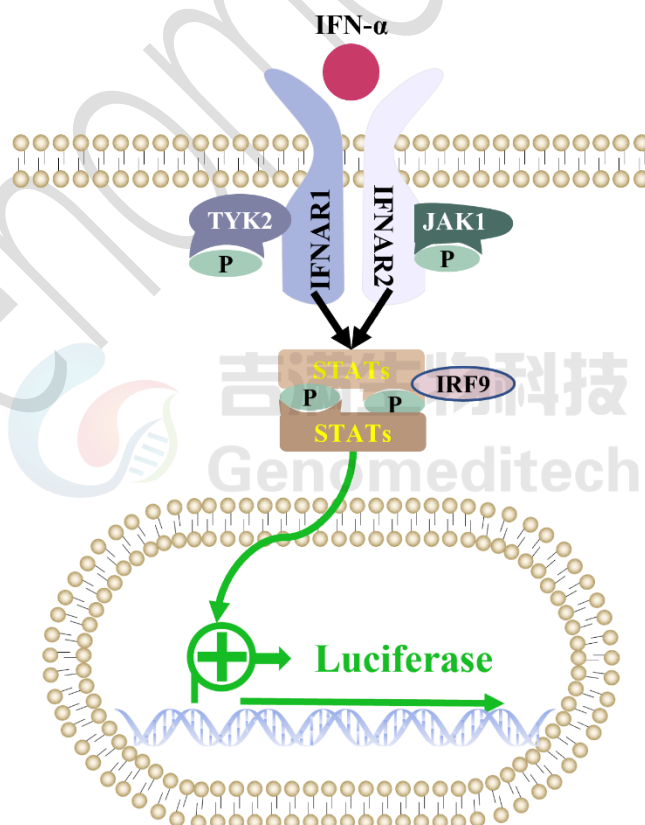
Catalog number: GM-C33668

Version 3.3.1.250108

Interferon alpha (IFN $\alpha$ ) is a crucial cytokine in the interferon family, primarily produced by leukocytes and other immune cells. It enhances antiviral immunity by increasing host cell resistance to viruses and regulating immune responses. IFN $\alpha$  binds to cell surface interferon receptors, activating signaling pathways that promote the expression of antiviral genes, thus inhibiting viral replication and spread.

IFN $\alpha$  activates the JAK-STAT signaling pathway by binding to the interferon alpha/beta receptor (IFNAR). This activation leads to the phosphorylation of JAK kinases, which activate STAT proteins (like STAT1 and STAT2). The phosphorylated STAT proteins then move to the nucleus, binding to the promoters of interferon-stimulated genes (ISGs) to promote antiviral protein synthesis.

IFN $\alpha$  Reporter MDCK Cell Line is a clonal stable cell line constructed using lentiviral technology, along with signal-dependent expression of a luciferase reporter gene. When IFN $\alpha$  binds to IFNAR, it activates downstream signaling pathways, leading to the expression of luciferase. 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 IFN $\alpha$ .



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## Specifications

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<b>Quantity</b>	2E6 Cells per vial,1 mL
<b>Product Format</b>	1 vial of frozen cells
<b>Shipping</b>	Shipped on dry ice
<b>Storage Conditions</b>	Liquid nitrogen immediately upon receipt

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<b>Recovery Medium</b>	MEM+10% FBS+1% P.S
<b>Growth medium</b>	MEM+10% FBS+1% P.S+2 µg/mL Blasticidin
<b>Note</b>	None
<b>Freezing Medium</b>	90% FBS+10% DMSO
<b>Growth properties</b>	Adherent
<b>Growth Conditions</b>	37°C, 5% CO <sub>2</sub>

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<b>Mycoplasma Testing</b>	The cell line has been screened to confirm the absence of Mycoplasma species.
<b>Safety considerations</b>	Biosafety Level 2
<b>Note</b>	It is recommended to expand the cell culture and store a minimum of 10 vials at an early passage for potential future use.

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## Materials

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<b>Reagent</b>	<b>Manufacturer/Catalogue No.</b>
MEM	gibco/11095-080
Fetal Bovine Serum	Cegrogen biotech/A0500-3010
Pen/Strep	Thermo/15140-122
Blasticidin	Genomeditech/ <a href="#">GM-040404</a>
Recombinant Canine α - Interferon, Freeze-dried	ringpu/
GMOne-Step Luciferase Reporter Gene Assay Kit	Genomeditech/ <a href="#">GM-040503</a>

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Figures

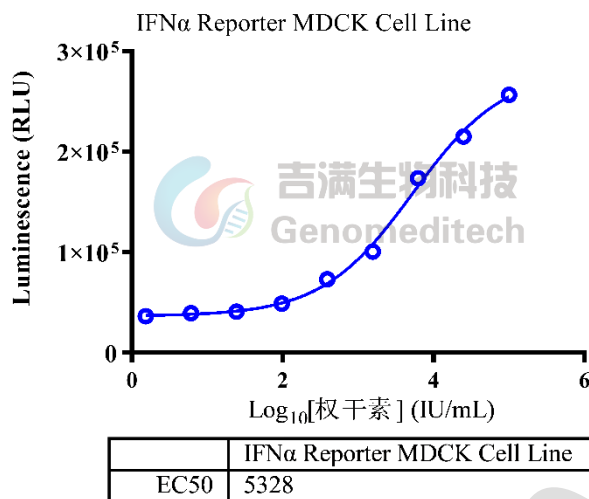


Figure 1 | Response to Recombinant Canine  $\alpha$ - Interferon,Freeze-dried. The IFN $\alpha$  Reporter MDCK Cell Line (Cat. GM-C33668) at a concentration of 1.2E4 cells/well (96-well format) was stimulated with serial dilutions of Recombinant Canine  $\alpha$ - Interferon,Freeze-dried (ringpu) in assay buffer (MEM + 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). The maximum induction fold was approximately [7.1]. Data are shown by drug activity concentration.

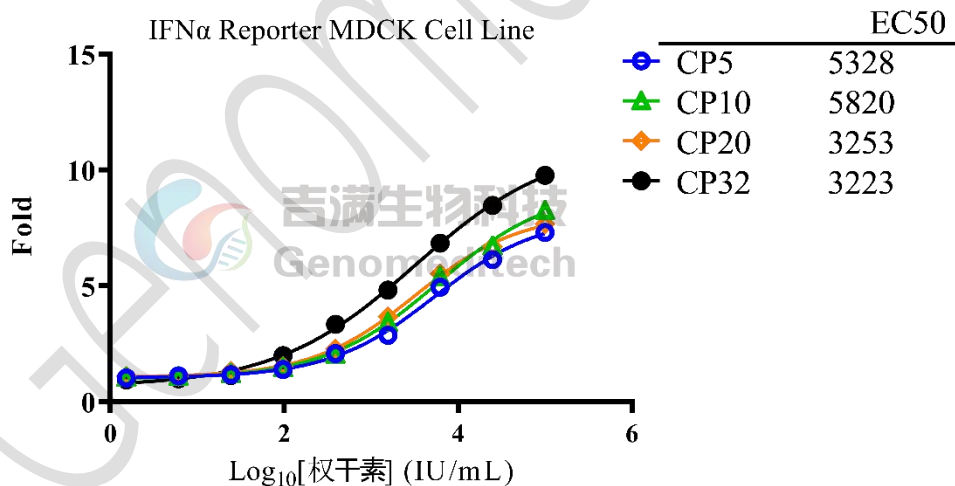


Figure 2 | The passage stability of response to Recombinant Canine  $\alpha$ - Interferon,Freeze-dried. The passage 5, 10, 20 and 32 of IFN $\alpha$  Reporter MDCK Cell Line (Cat. GM-C33668) at a concentration of 1.2E4 cells/well (96-well format) were stimulated with serial dilutions of Recombinant Canine  $\alpha$ - Interferon,Freeze-dried (ringpu) in assay buffer (MEM + 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 activity concentration.

## Cell Recovery

Recovery Medium: MEM+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  $-70^{\circ}\text{C}$ . Storage at  $-70^{\circ}\text{C}$  will result in loss of viability.

- Thaw the vial by gentle agitation in a  $37^{\circ}\text{C}$  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  $176 \times g$  for 5 minutes. Discard supernatant.
- Resuspend cell pellet with the recommended recovery medium. And dispense into appropriate culture dishes.
- Incubate the culture at  $37^{\circ}\text{C}$  in a suitable incubator. A 5%  $\text{CO}_2$  in air atmosphere is recommended if using the medium described on this product sheet.

## Cell Freezing

Freezing Medium: 90% FBS+10% DMSO

- Centrifuge at  $176 \times g$  for 3 minutes to collect cells.
- Resuspend the cells in pre-cooled freezing medium and adjust the cell density to  $2\text{E}6$  cells/mL.
- Aliquot 1 mL into each vial.
- Place the vial in a controlled-rate freezing container and store at  $-80^{\circ}\text{C}$  for at least 1 day, then transfer to liquid nitrogen as soon as possible.

## Cell passage

Growth medium: MEM+10% FBS+1% P.S+2  $\mu\text{g}/\text{mL}$  Blasticidin

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

- Remove and discard culture medium.
- Briefly rinse the cell layer with PBS to remove all traces of serum that contains trypsin inhibitor.
- Add 1.0 mL of 0.25% (w/v) Trypsin-EDTA solution to the dish to rinse and then aspirate. Repeat this step once. Then, add 2.0 mL of 0.25% (w/v) Trypsin-EDTA solution and observe the cells under an inverted microscope until the cell layer is dispersed (usually within 15 to 20 minutes at  $37^{\circ}\text{C}$ ).
- Note: To avoid clumping do not agitate the cells by hitting or shaking the flask while waiting for the cells to detach. Cells that are difficult to detach may be placed at  $37^{\circ}\text{C}$  to facilitate dispersal.
- Add 3.0 mL of growth medium to mix well and aspirate cells by gently pipetting.
- After centrifugation, resuspend the pellet and add appropriate aliquots of the cell suspension to new culture vessels.
- Incubate cultures at  $37^{\circ}\text{C}$ .

**Subcultivation Ratio: A subcultivation ratio of 1:3 - 1:4 is recommended**

**Medium Renewal: Every 2 to 3 days**

## Notes

- a) After the stabilization of the cell condition, there will be fewer dead cells post-passage, the cell growth rate will tend to stabilize, cell morphology will become uniform, and the cells will appear robust.

## Related Products

CD40: CD40L	
<a href="#">H_CD40(TNFRSF5) Reporter 293 Cell Line</a>	<a href="#">H_CD40(TNFRSF5) Reporter Jurkat Cell Line</a>
<a href="#">Cynomolgus_CD40 CHO-K1 Cell Line</a>	<a href="#">Cynomolgus_CD40L CHO-K1 Cell Line</a>
<a href="#">H_CD40(TNFRSF5) CHO-K1 Cell Line</a>	<a href="#">H_CD40(TNFRSF5) HEK-293 Cell Line</a>
<a href="#">H_CD40L CHO-K1 Cell Line</a>	<a href="#">H_CD40L HEK-293 Cell Line</a>
<a href="#">Anti-H_CD40 hIgG1 Antibody(APX005M)</a>	<a href="#">Anti-H_CD40 hIgG1 Antibody(ravagalimab)</a>
<a href="#">Anti-H_CD40L hIgG1 Antibody(dapirolizumab)</a>	<a href="#">Anti-H_CD40L hIgG1 Antibody(frexalimab)</a>
<a href="#">Biotinylated Human CD40 Protein; His-Avi Tag</a>	<a href="#">Cynomolgus CD40 Protein; His Tag</a>
<a href="#">Human CD40 Protein; His Tag</a>	<a href="#">Human CD40L Protein; His Tag</a>
IFN- $\alpha$	
<a href="#">IFN<math>\alpha</math> Reporter HEK-293 Cell Line</a>	<a href="#">IFN<math>\alpha</math> Reporter THP1 Cell Line</a>
IFN- $\gamma$	
<a href="#">GAS Reporter HCT116 Cell Line</a>	
BCMA:BAFFR:TACI	
<a href="#">H_BAFFR Jurkat Blockade Reporter Cell Line</a>	<a href="#">H_BAFFR Reporter Cell Line</a>
<a href="#">H_BCMA Reporter Cell Line</a>	<a href="#">H_TACI Reporter Cell Line</a>
<a href="#">Cynomolgus_BCMA CHO-K1 Cell Line</a>	<a href="#">H_BCMA CHO-K1 Cell Line</a>
<a href="#">H_BCMA HEK-293 Cell Line</a>	
<a href="#">Anti-BAFF hIgG1 Antibody(belimumab)</a>	<a href="#">Anti-BAFFR hIgG1 Antibody(ianalumab)</a>
<a href="#">Anti-BCMA hIgG1 Antibody(Belantamab)</a>	<a href="#">Anti-BCMA hIgG1 Antibody(SEA-BCMA)</a>
<a href="#">Anti-BCMA hIgG4 Antibody(BCMB69)</a>	
<a href="#">Biotinylated Human BAFF Protein; His-Avi Tag</a>	<a href="#">Cynomolgus BAFF Protein; His Tag</a>
<a href="#">Human BAFF Protein; His Tag</a>	<a href="#">Mouse BAFF Protein; His Tag</a>
BDCA2(CLEC4C)	
<a href="#">H_BDCA2 Reporter Jurkat Cell Line</a>	<a href="#">Cynomolgus_BDCA2 CHO-K1 Cell Line</a>
<a href="#">Cynomolgus_BDCA2 Jurkat Cell Line</a>	<a href="#">H_BDCA2 CHO-K1 Cell Line</a>
<a href="#">H_BDCA2 HEK-293 Cell Line</a>	<a href="#">H_BDCA2 Jurkat Cell Line</a>
<a href="#">Anti-H_BDCA2 hIgG1 Antibody(Litifilimab)</a>	
<a href="#">Cynomolgus BDCA2 Protein; His Tag</a>	<a href="#">Human BDCA2 Protein; His Tag</a>

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