

Product Sheet

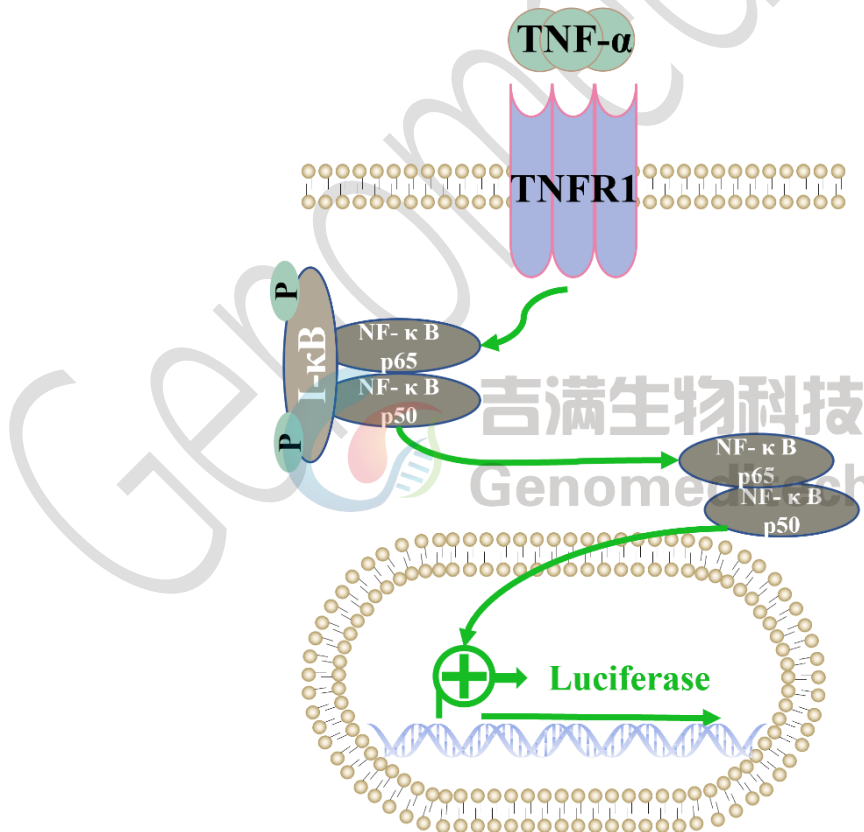
NFKB Reporter Jurkat Cell Line

Catalog number: GM-C24918

Version 3.3.1.241226

NF- κ B is a group of transcription factors, including p65 (RelA), RelB, c-Rel, p50/p105 (NF- κ B1), and p52/p100 (NF- κ B2). These proteins function as dimeric transcription factors and play roles in controlling gene regulation across a wide range of biological processes, including innate and adaptive immunity, inflammation, stress responses, B cell development, and lymphoid organogenesis. Pro-inflammatory cytokines, LPS, growth factors, and antigen receptors activate the IKK complex (IKK β , IKK α , and NEMO), leading to the phosphorylation of I κ B proteins. Phosphorylation of I κ B results in its ubiquitination and proteasomal degradation, releasing the NF- κ B/Rel complex. The active NF- κ B/Rel complex is further activated through phosphorylation and translocates to the nucleus to induce target gene expression.

NFKB Reporter Jurkat Cell Line is a clonal stable Jurkat cell line expressing a firefly luciferase under the control of the NF- κ B response elements, while also endogenously expressing the TNFR1. The binding of the TNF- α protein to TNFR1 activates downstream reporter genes, leading to luciferase expression. Luciferase readings reflect the activation level of signaling pathways and can be used to evaluate the activation effect of TNF- α .



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+3.5 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
Recombinant Human TNF-α	PEPROTECH/300-01A
GMOne-Step Luciferase Reporter Gene Assay Kit	Genomeditech/ GM-040503

Figures

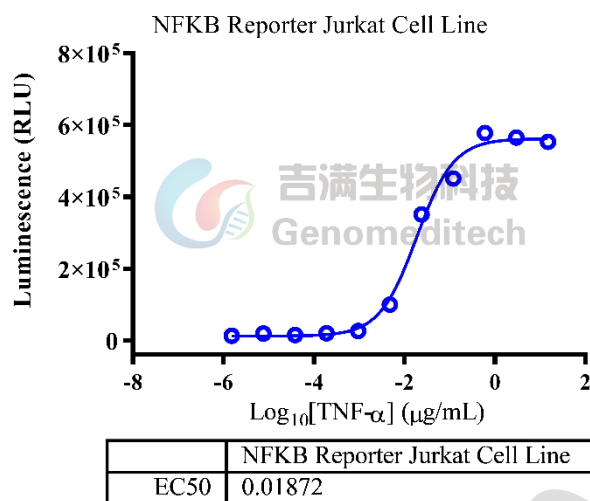


Figure 1 | Response to Human TNF- α protein. NFKB Reporter Jurkat Cell Line (Cat. GM-C24918) at a concentration of 1E5 cells/well (96-well format) was stimulated with serial dilutions of Recombinant Human TNF- α (PEPROTECH/300-01A) in assay buffer (RPMI 1640 + 1% FBS + 1% P.S) for 7 hours. The firefly luciferase activity was measured using the GMOne-Step Luciferase Reporter Gene Assay Kit (Cat. GM-040503). The maximum induction fold was approximately [42.3]. Data are shown by drug mass concentration.

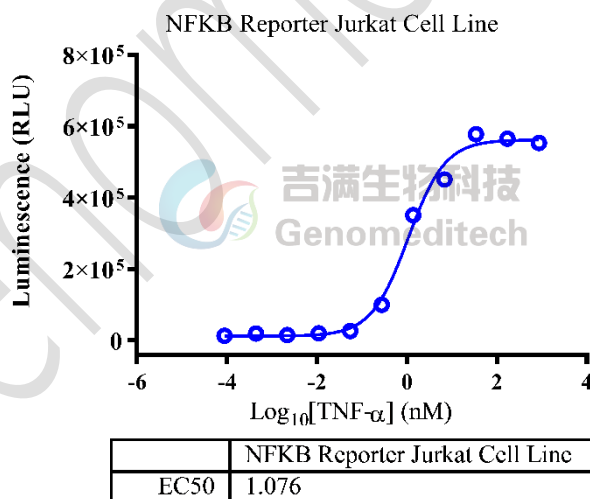


Figure 2 | Response to Human TNF- α protein. NFKB Reporter Jurkat Cell Line (Cat. GM-C24918) at a concentration of 1E5 cells/well (96-well format) was stimulated with serial dilutions of Recombinant Human TNF- α (PEPROTECH/300-01A) in assay buffer (RPMI 1640 + 1% FBS + 1% P.S) for 7 hours. The firefly luciferase activity was measured using the GMOne-Step Luciferase Reporter Gene Assay Kit (Cat. GM-040503). The maximum induction fold was approximately [42.3]. Data are shown by drug molar concentration.

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.

- 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 $176 \times g$ for 5 minutes. Discard supernatant.
- Resuspend cell pellet with the recommended complete medium. And dispense the suspension into 1 - 2 T-25 culture flasks.
- 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

- 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 5×10^6 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: RPMI 1640+10% FBS+1% P.S+3.5 $\mu\text{g}/\text{mL}$ 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.

- When the cell density reaches $1.5 - 2 \times 10^6$ cells/mL, subculture the cells. Do not allow the cell density to exceed 2×10^6 cells/mL.
- It is recommended to use T-25 flasks for subculturing.
- These cells are suspension cells, and it is recommended to use the "half-medium change" method to maintain optimal cell conditions during passaging.
- 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 3×10^5 and 1×10^6 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

NFKB	
NFKB Reporter HEK-293 Cell Line	NFKB Reporter TF-1 Cell Line
NFKB Reporter THP1 Cell Line	

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