

# Product Sheet

## H\_TACI Reporter Cell Line

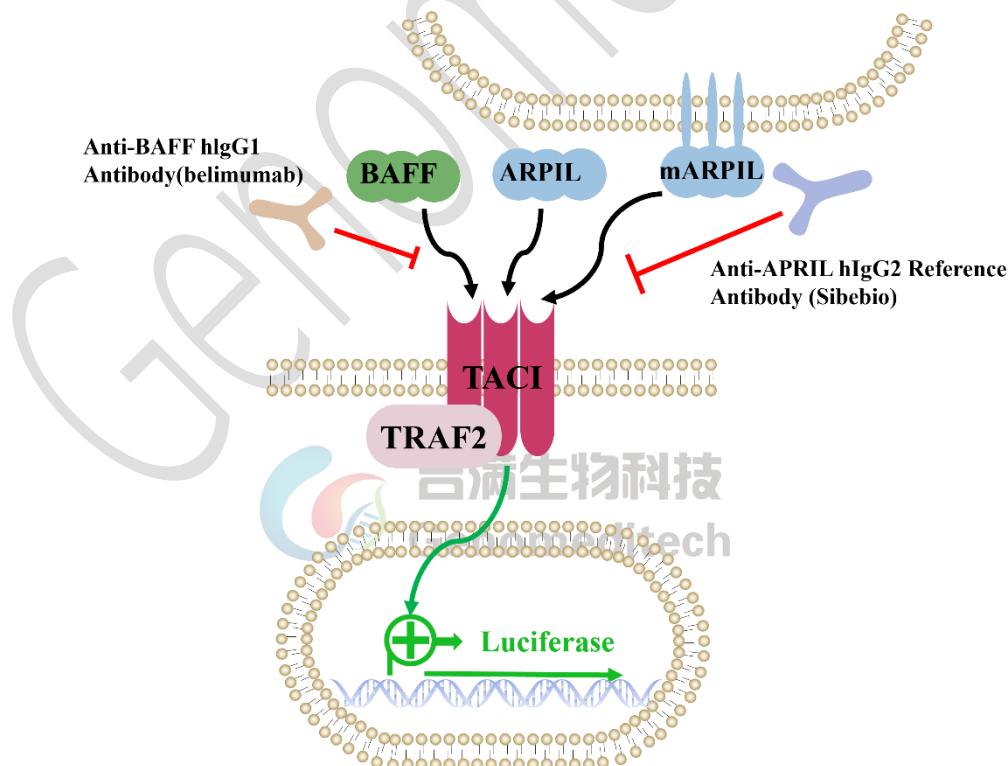
Catalog number: **GM-C35041**

Version 3.3.1.260604

TACI (Transmembrane Activator and CAML Interactor) is a key immune receptor mainly found on B cells, dendritic cells, and other immune cells. It regulates B cell survival, proliferation, and differentiation by binding to BAFF and APRIL, playing a crucial role in antibody production and immune homeostasis, especially in immune responses and autoimmune diseases.

In signaling pathways, TACI activation leads to receptor aggregation and downstream signaling upon binding to BAFF and APRIL. It primarily mediates signaling through TRAF (TNF receptor-associated factor) proteins, activating the NF- $\kappa$ B and MAPK pathways. This activation promotes B cell survival, proliferation, and differentiation while enhancing antibody production.

H\_TACI Reporter Cell Line is a clonal stable cell line constructed using lentiviral technology, constitutive expression of the TACI gene, along with signal-dependent expression of a luciferase reporter gene. When BAFF or APRIL binds to TACI, it activates downstream signaling pathways, leading to the expression of luciferase. Blockade antibodies 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 TACI.



## Specifications

<b>Quantity</b>	5E6 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
<b>Recovery Medium</b>	RPMI 1640+10% FBS+1% P.S
<b>Growth medium</b>	RPMI 1640+10% FBS+1% P.S+3.5 µg/mL Blasticidin+0.75 µg/mL Puromycin
<b>Note</b>	None
<b>Freezing Medium</b>	90% FBS+10% DMSO
<b>Growth properties</b>	Suspension
<b>Growth Conditions</b>	37°C, 5% CO <sub>2</sub>
<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.

## Materials

<b>Reagent</b>	<b>Manufacturer/Catalogue No.</b>
RPMI 1640	gibco/C11875500BT
Fetal Bovine Serum	ExCell/FSP500
Pen/Strep	Thermo/15140-122
Blasticidin	Genomeditech/ <a href="#">GM-040404</a>
Puromycin	Genomeditech/ <a href="#">GM-040401</a>
H_TACI Reporter Cell Line	Genomeditech/ <a href="#">GM-C35041</a>
Human BAFF Protein; His Tag	Genomeditech/ <a href="#">GM-87735RP</a>
Anti-BAFF hIgG1 Antibody(belimumab)	Genomeditech/ <a href="#">GM-87690AB</a>
APC anti-human CD267 (TACI) Antibody	BioLegend/311911
Human APRIL / TNFSF13 Protein, His,Flag Tag	ACRO/APL-H52D1
Anti-APRIL hIgG2 Reference Antibody (Sibebio)	Genomeditech/GM-88014MAB
GMOne-Step 2.0 Luciferase Reporter Gene Assay Kit	Genomeditech/ <a href="#">GM-040513</a>

## Figures

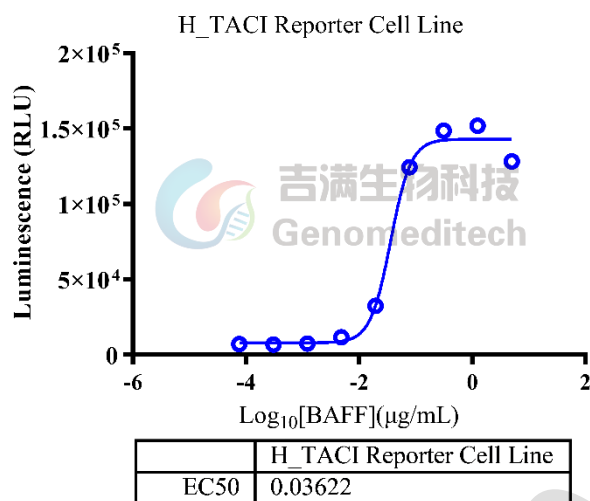


Figure 1 | Response to Human BAFF Protein. The H\_TACI Reporter Cell Line (Cat. [GM-C35041](#)) at a concentration of 1E5 cells/well (96-well format) was stimulated with serial dilutions of Human BAFF Protein (Cat. [GM-87735RP](#)) in assay buffer (RPMI 1640 + 1% FBS + 1% P.S) for 6 hours. The firefly luciferase activity was measured using the Luciferase Reporter Assay Kit (Genomeditech). The maximum induction fold was approximately [18.2]. Data are shown by drug mass concentration.

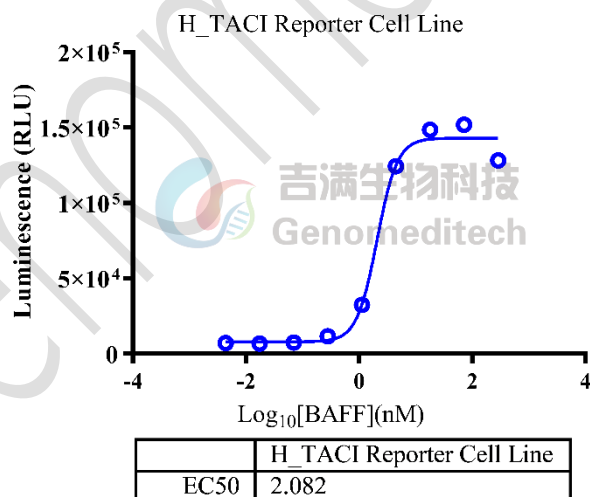


Figure 2 | Response to Human BAFF Protein. The H\_TACI Reporter Cell Line (Cat. [GM-C35041](#)) at a concentration of 1E5 cells/well (96-well format) was stimulated with serial dilutions of Human BAFF Protein (Cat. [GM-87735RP](#)) in assay buffer (RPMI 1640 + 1% FBS + 1% P.S) for 6 hours. The firefly luciferase activity was measured using the Luciferase Reporter Assay Kit (Genomeditech). The maximum induction fold was approximately [18.2]. Data are shown by drug molar concentration.

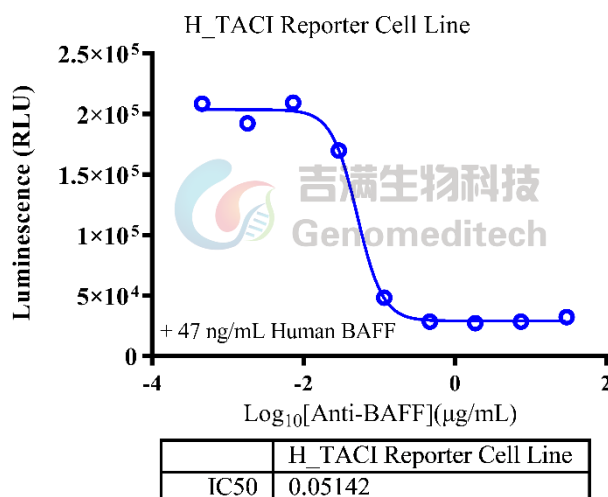


Figure 3 | Response to Anti-BAFF hlgG1 Antibody(belimumab). Serial dilutions of Anti-BAFF hlgG1 Antibody(belimumab) (Cat. [GM-87690AB](#)) was incubated with 4.7 ng/well of Human BAFF Protein (Cat. [GM-87735RP](#)) for 1 hour in assay buffer (RPMI 1640 + 1% FBS + 1% P.S). After pre-incubation, add the mixture to the H\_TACI Reporter Cell Line (Cat. [GM-C35041](#)) at a density of 1E5 cells/well in a 96-well format, and incubate for 6 hours. Firefly luciferase activity is then measured using the Luciferase Reporter Assay Kit (Genomeditech). The results indicated maximum blocking folds of approximately [6.5]. Data are shown by drug mass concentration.

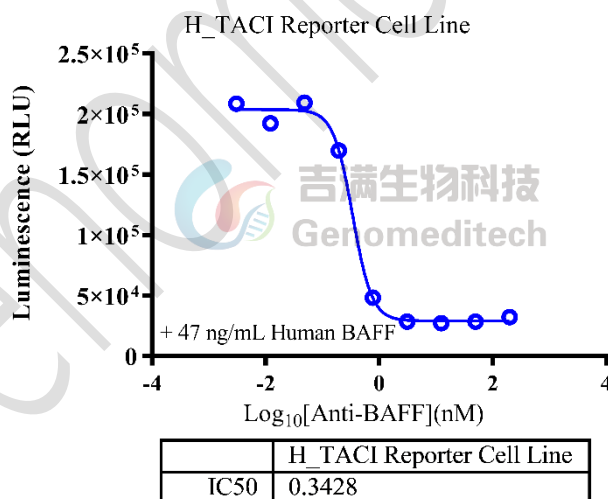


Figure 4 | Response to Anti-BAFF hlgG1 Antibody(belimumab). Serial dilutions of Anti-BAFF hlgG1 Antibody(belimumab) (Cat. [GM-87690AB](#)) was incubated with 4.7 ng/well of Human BAFF Protein (Cat. [GM-87735RP](#)) for 1 hour in assay buffer (RPMI 1640 + 1% FBS + 1% P.S). After pre-incubation, add the mixture to the H\_TACI Reporter Cell Line (Cat. [GM-C35041](#)) at a density of 1E5 cells/well in a 96-well format, and incubate for 6 hours. Firefly luciferase activity is then measured using the Luciferase Reporter Assay Kit (Genomeditech). The results indicated maximum blocking folds of approximately [6.5]. Data are shown by drug molar concentration.

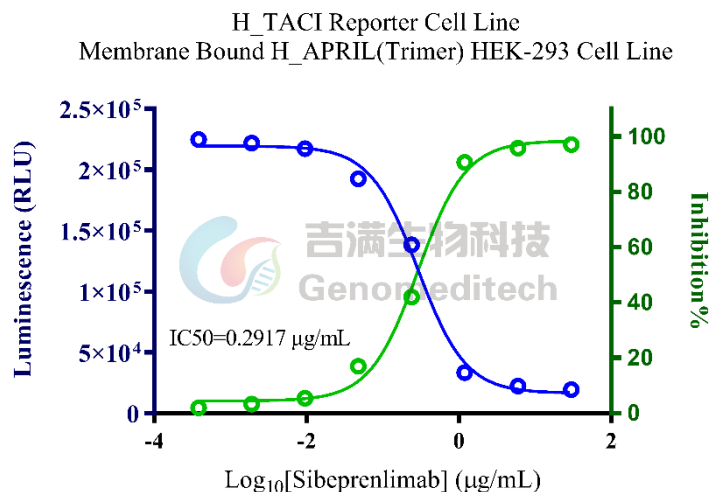


Figure 5 | Inhibition of Membrane Bound H\_APRIL-induced reporter activity by Sibeprenlimab. Serial dilutions of the Anti-APRIL hIgG2 Reference Antibody (Sibebio)(Cat. GM-88014MAB) were incubated with 1.5E4 cells/well of the Membrane Bound H\_APRIL(Trimer) HEK-293 Cell Line (Cat. GM-C40503) in a 96-well plate for 1 hour in assay buffer (RPMI 1640+1% FBS+1% P.S). Subsequently, the H\_TACI Reporter Cell Line (Cat. GM-C35041) at a concentration of 1E5 cells/well was added, and the co-culture proceeded for an additional 6 hours. Firefly luciferase activity was then measured using the Luciferase Reporter Assay Kit (Genomeditech) (left Y-axis, relative luminescence units), with inhibition percentages shown on the right Y-axis. Data are shown by drug mass concentration.

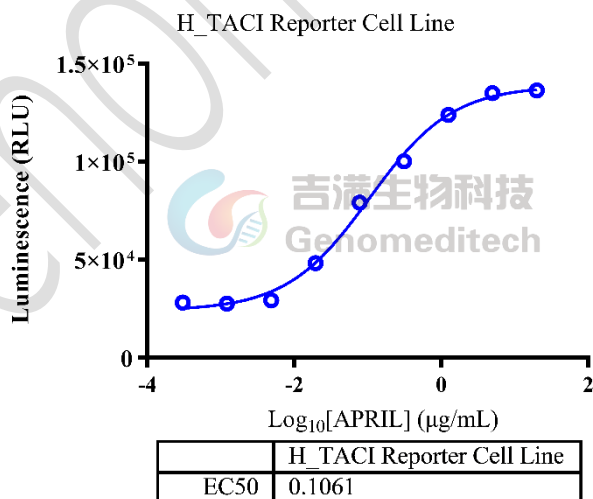


Figure 6 | Response to Human APRIL / TNFSF13 Protein. The H\_TACI Reporter Cell Line (Cat. GM-C35041) at a concentration of 1E5 cells/well (96-well format) was stimulated with serial dilutions of Human APRIL/TNFSF13 Protein (ACRO/APL-H52D1) in assay buffer (RPMI 1640 + 1% FBS + 1% P.S) for 6 hours. The firefly luciferase activity was measured using the Luciferase Reporter Assay Kit (Genomeditech). The maximum induction fold was approximately [4.6]. Data are shown by drug mass concentration.

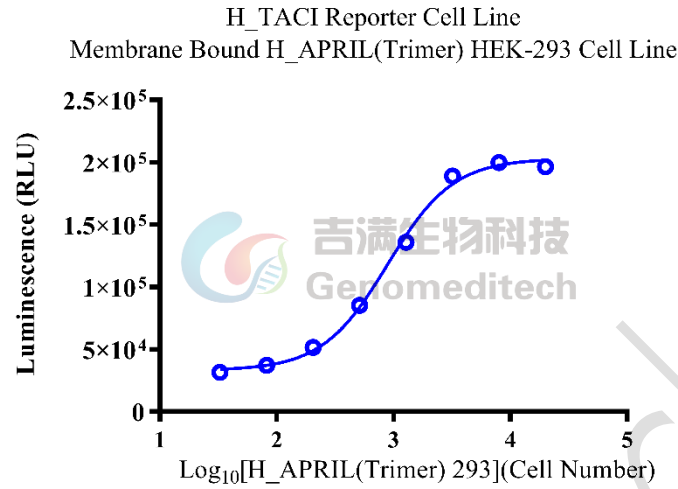


Figure 7 | Response to Membrane Bound H\_APRIL(Trimer) HEK-293 Cell Line. H\_TACI Reporter Cell Line (Cat. [GM-C35041](#)) at a concentration of 1E5 cells/well (96-well format) was stimulated with serial dilutions of Membrane Bound H\_APRIL(Trimer) HEK-293 Cell Line (Cat. [GM-C40503](#)) for 6 hours. The firefly luciferase activity was measured using the Luciferase Reporter Assay Kit (Genomeditech).

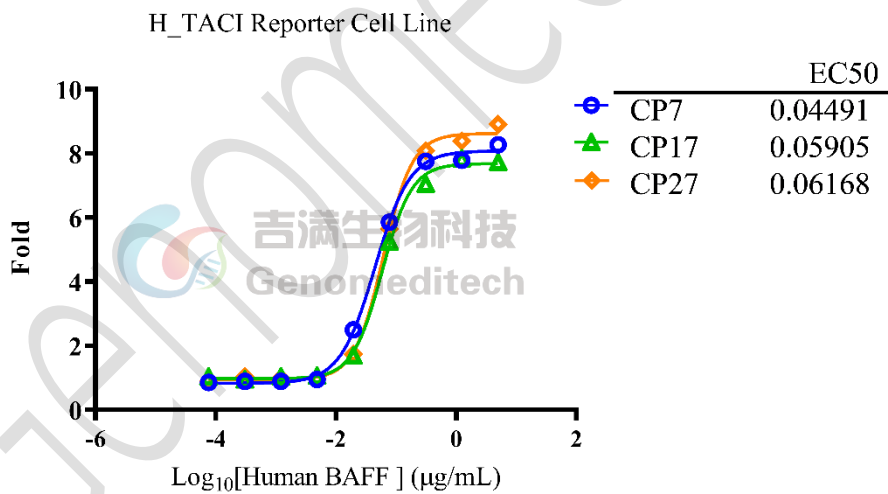


Figure 8 | The passage stability of response to Human BAFF Protein; His Tag. The passage 7, 17, and 27 of H\_TACI Reporter Cell Line (Cat. [GM-C35041](#)) at a concentration of 1E5 cells/well (96-well format) were stimulated with serial dilutions of Human BAFF Protein (Cat. [GM-87735RP](#)) in assay buffer (RPMI 1640+1% FBS+1% P.S) for 6 hours. The firefly luciferase activity was measured using the Luciferase Reporter Assay Kit (Genomeditech).

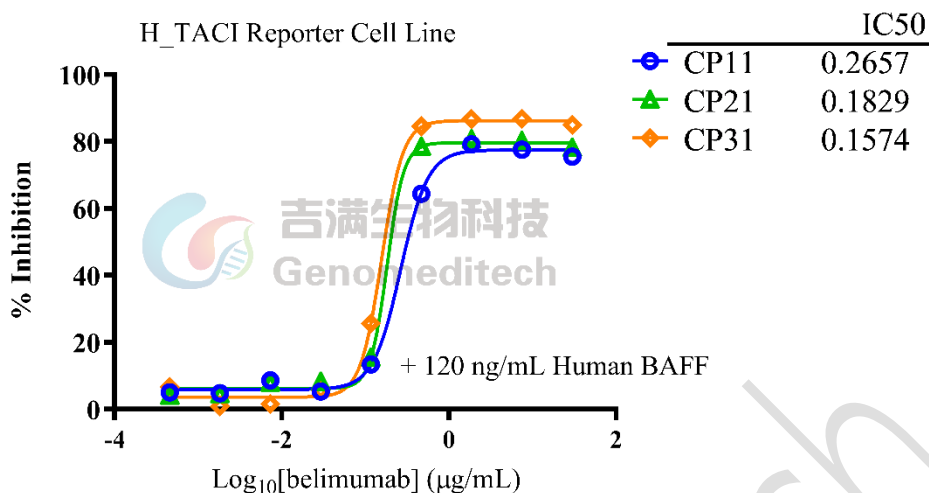


Figure 9 | The passage stability of response to Anti-BAFF hlgG1 Antibody(belimumab). Serial dilutions of Anti-BAFF hlgG1 Antibody(belimumab) (Cat. GM-87690AB) was incubated with 12 ng/well of Human BAFF Protein; His Tag (Cat. GM-87735RP) for 1 hour in assay buffer (RPMI 1640+1% FBS+1% P.S). Subsequently, the passage 11, 21, and 31 of H\_TACI Reporter Cell Line (Cat. GM-C35041) at a concentration of 1E5 cells/well was added, and the coculture proceeded for an additional 6 hours. Firefly luciferase activity is then measured using the Luciferase Reporter Assay Kit (Genomeditech). Data are shown by drug mass concentration.

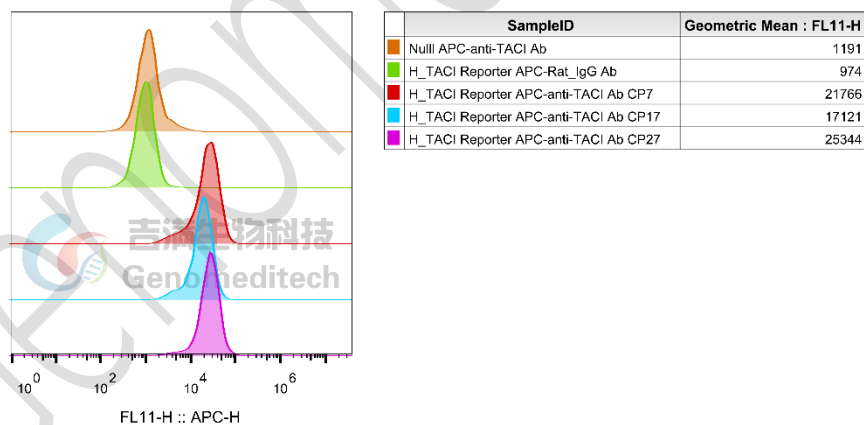


Figure 10 | The passage stability of the H\_TACI Reporter Cell Line (Cat. GM-C35041) was determined by flow cytometry using APC anti-human CD267 (TACI) Antibody (Biolegend/311911).

## 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  $-70^{\circ}\text{C}$ . Storage at  $-70^{\circ}\text{C}$  will result in loss of viability.

- a) 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).
- 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  $176 \times g$  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  $37^{\circ}\text{C}$  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

- a) Centrifuge at  $176 \times g$  for 3 minutes to collect cells.
- b) Resuspend the cells in pre-cooled freezing medium and adjust the cell density to  $5 \times 10^6$  cells/mL.
- c) Aliquot 1 mL into each vial.
- d) 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: RPMI 1640+10% FBS+1% P.S+3.5  $\mu\text{g}/\text{mL}$  Blasticidin+0.75  $\mu\text{g}/\text{mL}$  Puromycin

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  $1.5 - 2 \times 10^6$  cells/mL, subculture the cells. Do not allow the cell density to exceed  $2 \times 10^6$  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 concentration between  $3 \times 10^5$  and  $1 \times 10^6$  viable cells/mL.**

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

## Notes

- These cells are sensitive to density, so please ensure that the cell density is maintained within an appropriate range during culture and subculturing.
- 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

CD40:CD40L	
H_CD40(TNFRSF5) Reporter 293 Cell Line	H_CD40(TNFRSF5) Reporter Jurkat Cell Line
Cynomolgus_CD40 CHO-K1 Cell Line	Cynomolgus_CD40L CHO-K1 Cell Line
H_CD40(TNFRSF5) CHO-K1 Cell Line	H_CD40(TNFRSF5) HEK-293 Cell Line
H_CD40L CHO-K1 Cell Line	H_CD40L HEK-293 Cell Line
Mouse_CD40L CHO-K1 Cell Line	Rabbit_CD40L NIH-3T3 Cell Line
Anti-CD40 hIgG1 Reference Antibody (Sotibio)	Anti-CD40 hIgG1 Reference Antibody (Tenebio)
Anti-CD40L hIgG1 Reference Antibody (Frebio)	Anti-H_CD40 hIgG1 Antibody(APX005M)
Anti-H_CD40 hIgG1 Antibody(ravagalimab)	Anti-H_CD40L hIgG1 Antibody(dapirolizumab)
Anti-H_CD40L hIgG1 Antibody(frexalimab)	
Biotinylated Human CD40 Protein; His-Avi Tag	Cynomolgus CD40 Protein; His Tag
Human CD40 Protein; His Tag	Human CD40L Protein; His Tag
IFN- $\alpha$	
IFN $\alpha$ Reporter HEK-293 Cell Line	IFN $\alpha$ Reporter MDCK Cell Line
IFN $\alpha$ Reporter THP1 Cell Line	
BCMA:BAFFR:TACI	
H_BAFFR Jurkat Blockade Reporter Cell Line	H_BAFFR Reporter Cell Line
H_BCMA Reporter Cell Line	Cynomolgus_BCMA CHO-K1 Cell Line
Cynomolgus_BCMA HEK-293 Cell Line	H_BCMA CHO-K1 Cell Line
H_BCMA HEK-293 Cell Line	Membrane Bound H_APRIL(Trimer) HEK-293 Cell Line
Anti-BAFF hIgG1 Antibody(belimumab)	Anti-BAFFR hIgG1 Antibody(ianalumab)
Anti-BCMA hIgG1 Antibody(Belantamab)	Anti-BCMA hIgG1 Antibody(SEA-BCMA)
Anti-BCMA hIgG4 Antibody(BCMB69)	Anti-CD3E $\times$ BCMA hIgG4 Reference Antibody (Tecbio)
Anti-TNFSF13B(BAFF) hIgG1 Reference Antibody (Belibio)	
Biotinylated Human BAFF Protein; His-Avi Tag	Biotinylated Human BCMA Protein; His-Avi Tag
Cynomolgus BAFF Protein; His Tag	Cynomolgus BCMA Protein; hFc Tag
Cynomolgus BCMA Protein; His Tag	Human APRIL Protein; hFc Tag
Human BAFF Protein; His Tag	Human BCMA Protein; hFc Tag
Human BCMA Protein; His Tag	Mouse BAFF Protein; His Tag
BDCA2(CLEC4C)	
H_BDCA2 Reporter DDX35TM Jurkat Cell Line	H_BDCA2 Reporter Jurkat Cell Line

Cynomolgus_BDCA2 CHO-K1 Cell Line	Cynomolgus_BDCA2 Jurkat Cell Line
H_BDCA2 CHO-K1 Cell Line	H_BDCA2 HEK-293 Cell Line
H_BDCA2 Jurkat Cell Line	
Anti-H_BDCA2 hIgG1 Antibody(Litifilimab)	
Cynomolgus BDCA2 Protein; His Tag	Human BDCA2 Protein; His Tag
<b>CD3</b>	
Jurkat CD3-BsAb Reporter Cell Line	Cynomolgus_CD3 HEK-293 Cell Line
Cynomolgus_CD3E(Membrane Bound ECD) CHO-K1 Cell Line	H_CD3 CHO-K1 Cell Line
H_CD3 HEK-293 Cell Line	H_CD3(TCR V2) CHO-K1 Cell Line
H_CD3(TCR V2) HEK-293 Cell Line	H_CD3D CD3E KO Jurkat Cell Line
H_CD3E KO Jurkat Cell Line	H_CD3E(Membrane Bound ECD) CHO-K1 Cell Line
Mouse_CD3 HEK-293 Cell Line	
Anti-CD19×CD3 hIgG1 Antibody[PIT-565(CD58 K34A)]	Anti-CD3 epsilon hIgG1 Antibody [OKT-3 (muromonab)]
Anti-CD3 hIgG1 Antibody(CH2527)	Anti-CD3×CD20 hIgG1 Bispecific Antibody (Epcobio)
Anti-CD3×FCRL5 hIgG1 Bispecific Antibody(cevostamab)	Anti-CD3E×BCMA hIgG4 Reference Antibody (Tecbio)
Anti-CD3E×DLL3 hIgG1 Bispecific Antibody(Tarlabio)	Anti-CD3E×MUC17 hIgG1 Bispecific Antibody(Vepsitbio)
Anti-mouse CD3ε mIgG2a Antibody(145-2C11)	

## License Agreement:

**By purchasing and using this cell line product, the user voluntarily agrees to accept and abide by the following policies:**

- This cell line product is restricted to research use only and shall not be used for any commercial purposes.
- This product is strictly prohibited from being used in the diagnosis or treatment of human or animal diseases, and shall not be directly used in experiments involving humans.
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