Description

Membrane TL1A CHO Cell Line is a clonal CHO cell line stably expressing an engineered, cleavage-resistant form of TL1A (TNF-like ligand 1A), that enforces its cell surface localization.

This cell line has been validated by flow cytometry.

Note: This cell line is not suitable for co-culture activation of TL1A-Responsive Luciferase Reporter Jurkat Cell line (#78811). For co-culture activation of TL1A-Responsive Luciferase Reporter Jurkat Cell line, please use TL1A CHO Cell line (#83033).

Background

TL1A, also called TNFSF15, is a member of the tumor necrosis factor family. It is expressed in different immune cells, such as monocytes, macrophages, dendritic cells, T cells, and non-immune cells. It exists in a membrane-bound (mTL1A) and a soluble form (sTL1A), which seem to play different roles in adaptive and innate cells. TL1A competitively binds to DR3 (death receptor 3), having a higher affinity for DcR3 (decoy receptor 3), providing a stimulatory signal for downstream signaling pathways. It then regulates proliferation, activation, apoptosis, and chemokine production in effector cells. The role of DR3 in T cell activation, and consequently in cytokine secretion and cell proliferation, makes it an attractive target in cancer therapy. Inhibition of DR3-TL1A interaction has substantial therapeutic potential in the treatment of solid tumors. Non-secreted TL1A has a role in remodeling the airways in patients suffering from asthma. The study of membrane-bound TL1A and development of blockers specific to this molecule may prove highly beneficial in immune-related disorders.

Application(s)

- Useful for cell-based TL1A binding assays.

Materials Provided

Components	Format
2 vials of frozen cells	Each vial contains >1 x 10^6 cells in 1 ml of Cell Freezing Medium (BPS Bioscience #79796)

Parental Cell Line

CHO-K1 cells, Chinese Hamster Ovary, epithelial-like cells, adherent.

Mycoplasma Testing

The cell line has been screened to confirm the absence of Mycoplasma species.

Materials Required but Not Supplied

These materials are not supplied with the cell line but are necessary for cell culture and cellular assays. BPS Bioscience's reagents are validated and optimized for use with this cell line and are highly recommended for best results. Media components are provided in the Media Formulations section below.

Media Required for Cell Culture

Name	Ordering Information
Thaw Medium 3	BPS Bioscience #60186
Growth Medium 3J	BPS Bioscience #79974

Storage Conditions

Cells are shipped in dry ice and should immediately be thawed or stored in liquid nitrogen upon receipt. Do not use a -80°C freezer for long-term storage. Contact technical support at support@bpsbioscience.com if the cells are not frozen in dry ice upon arrival.

Media Formulations

For best results, the use of validated and optimized media from BPS Bioscience is *highly recommended*. Other preparations or formulations of media may result in suboptimal performance.

Note: Thaw Media do *not* contain selective antibiotics. However, Growth Media *do* contain selective antibiotics, which are used to maintain selective pressure on the cell population expressing the gene of interest. Cells should be grown at 37°C with 5% CO_2. BPS Bioscience's cell lines are stable for at least 10 passages when grown under proper conditions.

Media Required for Cell Culture

Thaw Medium 3 (BPS Bioscience #60186):
F-12K medium supplemented with 10% FBS, 1% Penicillin/Streptomycin.

Growth Medium 3J (BPS Bioscience #79974):
F-12K medium supplemented with 10% FBS, 1% Penicillin/Streptomycin plus 5 µg/ml of Puromycin.

Cell Culture Protocol

Cell Thawing

1. Swirl the vial of frozen cells for approximately 60 seconds in a 37°C water bath. As soon as the cells are thawed (it may be slightly faster or slower than 60 seconds), quickly transfer the entire contents of the vial to a tube containing 10 ml of pre-warmed Thaw Medium 3.

   Note: Leaving the cells in the water bath at 37°C for too long will result in rapid loss of viability.

2. Immediately spin down the cells at 300 *x g* for 5 minutes, remove the medium and resuspend the cells in 5 ml of pre-warmed Thaw Medium 3.

3. Transfer the resuspended cells to a T25 flask or T75 flask and incubate at 37°C in a 5% CO_2 incubator.

4. After 48-72 hours of culture, check for cell attachment and viability. Change medium to fresh Thaw Medium 3 and continue growing in a 5% CO_2 incubator at 37°C until the cells are ready to passage.

5. Cells should be passaged before they reach 100% confluence. Switch to Growth Medium 3J for passage.

Cell Passage

1. Aspirate the medium, wash the cells with phosphate buffered saline (PBS) without Ca^{2+}/Mg^{2+}, and detach the cells from the culture vessel with 0.25% Trypsin/EDTA, following the volumes recommended for the cell vessel being used.

2. Once the cells have detached, add Growth Medium 3J and transfer to a tube.

3. Spin down cells at 300 *x g* for 5 minutes, remove the medium and resuspend the cells in Growth Medium 3J.

4. Seed into new culture vessels at the recommended sub-cultivation ratio of 1:6 to 1:8 once or twice a week.

Cell Freezing

1. After detachment, spin down the cells at 300 *x g* for 5 minutes.

2. Remove the medium and resuspend the cells in 4°C Cell Freezing Medium (BPS Bioscience #79796) at ~2 x 10^6 cells/ml.

3. Dispense 1 ml of cell suspension into each cryogenic vial. Place the vials in an insulated container for slow cooling and store at -80°C overnight.

4. Transfer the vials to liquid nitrogen the next day for long term storage.

Note: It is recommended to expand the cells and freeze at least 10 vials at an early passage for future use.

Validation Data

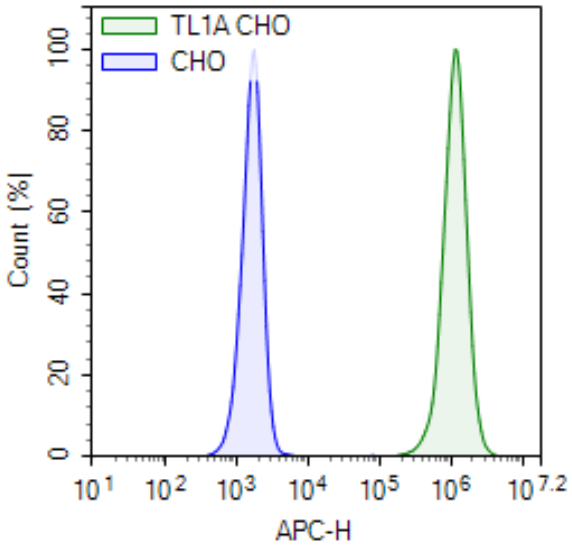

Figure 1: Cell surface expression of TL1A in membrane TL1A CHO Cell Line assessed by flow cytometry.
Membrane TL1A CHO cells (green) and parental CHO-K1 (blue) were stained with TL1A antibody Tulisokibart (#83613) followed by Alexa Fluor® 647 anti-human IgG Fc Antibody (Jackson ImmunoResearch #109-606-008) and analyzed by flow cytometry. The y axis represents the cell %, while the x axis indicates Alexa Fluor 647 intensity.

Data shown is representative.

References

Biener-Ramanujan., *et al.*, 2010 *FEBS Letters* 584 (2010) 2376–2380.
Ferdinand J., *et al.*, 2018 *Journal of Immunology* 200 (4): 1360-1369.

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Troubleshooting Guide
Visit bpsbioscience.com/cell-line-faq for detailed troubleshooting instructions. For lot-specific information and all other questions, please visit https://bpsbioscience.com/contact.

Related Products

Products	*Catalog #*	*Size*
TL1A CHO Cell Line	83033	2 vials
Tulisokibart	83613	1 mg/ 5 mg
Anti-TL1A Neutralizing Antibody	101729	50 µg/ 100 µg
TL1A-Responsive Luciferase Reporter Jurkat Cell Line	78811	2 vials

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