Description
Recombinant CHO-K1 cells expressing the cell surface glycoprotein TROP2 (Trophoblast cell-surface antigen 2); ref. seq. NM_002353.2.

Background
Trophoblast cell-surface antigen 2 (TROP-2), also referred to as tumor associated calcium signal transducer 2 (TACSTD2), GA733-1 or M1S1, is a cell surface glycoprotein that is highly expressed in a variety of solid cancers, yet has low expression in normal cells. Through a variety of signaling pathways, TROP2 regulates cancer growth and metastasis and is a favorable target for antibody drug conjugates (ADC) and immunotherapy.

Application
TROP2 can be exploited as a therapeutic target in battling tumors via immunotherapy. The TROP2 – CHO-K1 cell line is useful for screening and characterizing antibodies to TROP2.

Materials Provided

Components	Format
2 vials of frozen cells	2 x 10^6 cells in 1 ml of FBS containing 10% DMSO

Host Cell
CHO-K1

Mycoplasma Testing
The cell line has been screened using the MycoAlert™ Mycoplasma Detection kit (Lonza, #LT07-218) to confirm the absence of Mycoplasma species.

Materials Required but Not Supplied
These materials are not supplied with this cell line but are necessary for cell culture and cellular assays. BPS Bioscience reagents systems 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.

Materials Required for Cell Culture

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

Materials Required for Cellular Assay

Name	Ordering Information
Human TruStain FcX™ (Fc Receptor Blocking Solution)	Biolegend #422302
PE anti-human TACSTD2 (TROP2) Antibody	Biolegend #363803
Flow Cytometer	

Storage Conditions

Cells will arrive upon 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, it is *highly recommended* to use these validated and optimized media from BPS Bioscience. To formulate comparable but not BPS-validated media, formulation components can be found below.

Note: Thaw Medium does *not* contain selective antibiotics. However, Growth Medium *does* contain selective antibiotics, which are used for maintaining cell lines over many passages. Cells should be grown at 37°C with 5% CO_2 using Growth Medium 3J.

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 to ensure recombinant expression

Cell Culture Protocol

Cell Thawing

1. To thaw the cells, it is recommended to quickly thaw the frozen cells from liquid nitrogen in a 37°C water-bath, then transfer the entire contents of the vial to a tube containing 10 ml of Thaw Medium 3 (**no Puromycin**).
2. Spin down the cells, remove supernatant and resuspend cells in 5 ml of pre-warmed Thaw Medium 3 (**no Puromycin**).
3. Transfer the resuspended cells to a T25 flask and incubate at 37°C in a 5% CO_2 incubator.
4. After 24 hours of culture, add an additional ~3 ml of Thaw Medium 3 (**no Puromycin**), and continue growing culture in a CO_2 incubator at 37°C until the cells are ready to passage.
5. Cells should be passaged before they are fully confluent. At first passage, switch to Growth Medium 3J (**contains Puromycin**).

Cell Passage

1. To passage the cells, remove the medium, rinse cells with phosphate buffered saline (PBS), and detach cells from culture vessel with 0.05% Trypsin/EDTA.
2. After detachment, add Growth Medium 3J **(contains Puromycin)** and transfer to a tube, spin down cells, resuspend cells in Growth Medium 3J and seed appropriate aliquots of cell suspension into new culture vessels. Sub cultivation ratio: 1:10 weekly.

Cell Freezing

1. To freeze down the cells, remove the medium, rinse cells with phosphate buffered saline (PBS), and detach cells from culture vessel with 0.05% Trypsin/EDTA.

2. After detachment, add Thaw Medium 3 (**no Puromycin**) and count the cells, then transfer to a tube, spin down cells, and resuspend in 4°C Freezing Medium (BPS Bioscience #79796) at ~2 x 10^6 cells/ml.
3. Dispense 1 ml of cell aliquots into cryogenic vials. Place vials in an insulated container for slow cooling and store at -80°C overnight.
4. Transfer to liquid nitrogen the next day for storage.

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

Validation Data

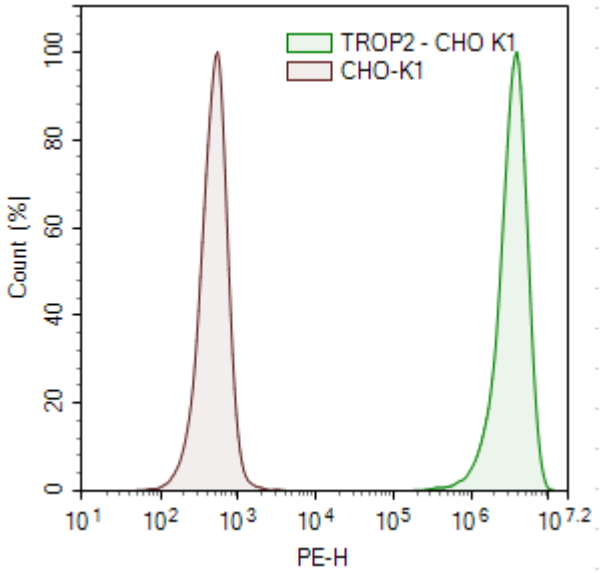

Figure 1. TROP2-CHO K1 cells (green) or control CHO K1 cells (red), were labelled with PE anti-human TACSTD2 (TROP2) Antibody (Biolegend #363803) and analyzed by FACS. Y-axis is the % cell number. X-axis is the intensity of PE.

Sequence

Human TROP2 (Trophoblast cell-surface antigen 2) sequence (accession number NM_002353.2)

MARGPGLAPPPLRLPLLLLVLAAVTGHTAAQDNCTCPTNKMTVCSPDGPGGRCQCRALGSGMAVDCSTLTSKCLLLKARMSAP
KNARTLVRPSEHALVDNDGLYDPDCDPEGRFKARQCNQTSVCWCVNSVGVRRTDKGDLSLRCDELVRTHHILIDLRHRPTAGAF
NHSDLDAELRRLFRERYRLHPKFVAAVHYEQPTIQIELRQNTSQKAAGDVDIGDAAYYFERDIKGESLFQGRGGLDLRVRGEPLQV
ERTLIYYLDEIPPKFSMKRLTAGLIAVIVVVVVALVAGMAVLVITNRRKSGKYKKVEIKELGELRKEPSL

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Troubleshooting Guide

Visit bpsbioscience.com/cell-line-faq for detailed troubleshooting instructions. For all further questions, please email support@bpsbioscience.com.

Related Products

Products	*Catalog #*	*Size*
EPCAM, Avi-His-Tag	100461	100 µg
EPCAM, Avi-His-Tag, Biotin Labeled	100462-1	25 µg
EPCAM, Avi-His-Tag, Biotin Labeled	100462-2	50 µg