

Description

Recombinant CHO-K1 cells expressing GPC3 (Glypican 3), a cell surface proteoglycan bearing heparin-sulfate; ref. seq. NM_004484.2.

Background

GPC3, also known as Glypican-3 and OCI5, belongs to the glypican family and is highly expressed in the lungs, liver and kidneys. Its function is tissue dependent and can either promote or suppress tumorigenesis. Being a heparin sulfate proteoglycan, it is overexpressed in neoplasms including malignant melanoma, hepatocellular carcinoma, and testicular yolk sac tumors and plays a significant role in cell growth and differentiation.

Application

1. Useful for screening and validating antibodies against GPC3 and anti-GPC3 CAR-T for immunotherapy research and drug discovery.
2. Useful for GPC3 binding assays to screen for GPC3 ligands.

Materials Provided

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

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
Human Glypican 3 APC-conjugated Antibody	R&D Systems #FAB2119A
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% CO₂ using Growth Medium 3J.

Media Required for Cell Culture

Thaw Medium 3 (BPS Bioscience #60186):

Ham's F-12 (Kaighn's) medium (Thermo Fisher, #21127030) supplemented with 10% FBS (Thermo Fisher, #26140079), 1% Penicillin/Streptomycin (Thermo Fisher, #15140163)

Growth Medium 3J (BPS Bioscience #79974):

Thaw Medium 3 (BPS Bioscience, #60186) plus 5 µg/ml of Puromycin (Clontech #631306)

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% CO₂ incubator.
4. After 24 hours of culture, add an additional ~3 ml of Thaw Medium 3 (**no Puromycin**), and continue growing culture in a CO₂ 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 10⁶ 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

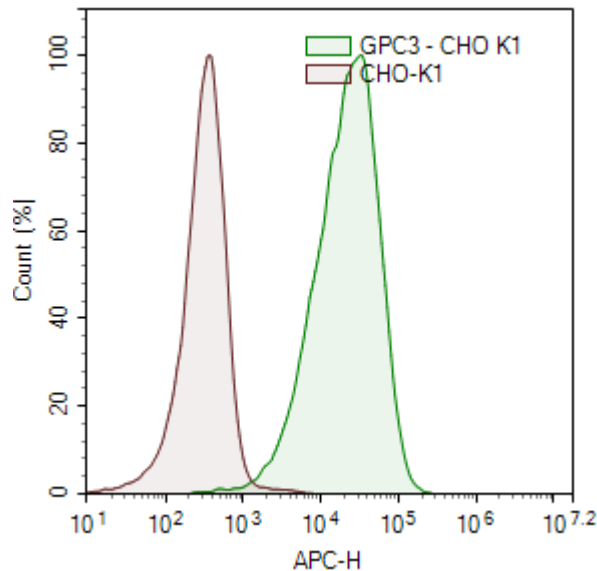


Figure 1. GPC3-CHO K1 cells (green) or control CHO K1 cells (red), were labelled with APC-conjugated Anti-GPC3 Antibody (R&D systems, #FAB2119A) and analyzed by FACS.

Sequence

Human GPC3 (Glypican 3) sequence (accession number NM_004484.2)

MAGTVRTACLVVAMLLSLDFPGQAQPPPPPDATCHQVRSFFQRLQPGLKWVPETVPVGS DLQVCLPKGPTCCSRKMEEKYQL
 TARLNMEQLQASAMELKFLIIQNAAVFQEA FEIVVRHAKNYTNAMFKNNYPSLTPQA FEFVGEFFTDVSLYILGSDINVD DMVN
 ELFDSLFPVIYTQLMNPGLPDSALDINECLRGARRDLKVFGNFPKLIMTQVSKSLQVTRIFLQALNLGIEVINTTDHLKFSKDCGRML
 TRMWYCSYQCGLMMVKPCGGYCNVVMQGC MAGVVEIDKYWREYILSLEELVNGMYRIYDMENVLLGLFSTIHDSIQYVQKNA
 GKLT TTIGKLCAHSQQRQYRSAYYPEDLFIDKKVLKVAHVEHEETLSSRRRELIQKLKSFISFYSALPGYICSHSPVAENDTL CWNGQ
 ELVERY SQKAARNGMKNQFNLHELKMKGPEPVVSQIIDKLKHINQLLRTMSMPKGRVLDKNLDEEGFESGDCGDD EDECIGGS
 GDGMIVKNQLRFLAELAYDLDDVDDAPGNSQQATPKDNEISTFHN LGNVHSPLKLLTSM AISVVCFFFLVH

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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

<i>Products</i>	<i>Catalog #</i>	<i>Size</i>
GPC3, Avi-His-Tagged	100071	100 µg
GPC3, Avi-His-Tagged, Biotin-Labeled	100072	50 µg
GPC3, His-tag [Monkey (<i>M. fascicularis</i>)]	71260	100 µg