

Description

PSMA (FOLH1) Luciferase CHO Cell Line is a clonal CHO cell line stably expressing both full length human PSMA protein (NM_004476.1) and firefly luciferase.

Background

Prostate-specific membrane antigen (PSMA), also known as Folate hydrolase 1 (FOLH1), is expressed at high levels on prostate cancer cells. It has been reported to play a role in tumor progression through the PI3K (phosphoinositide 3-kinase)-Akt and MAPK (mitogen activated protein kinase)-ERK1/2 (extracellular signal regulated kinase 1/2) pathways. PSMA/FOLH1 is a target for imaging prostate cancer and a therapeutic target for isotope-conjugated antibodies. It is expressed in some other tumor types and a few normal tissues. Currently, PSMA/FOLH1 is the target of clinical trials of CAR (chimeric antigen receptor)-T cells and bispecific antibodies.

Application(s)

- Useful for screening and validating anti-PSMA bispecific antibodies.
- Useful for screening and validating anti-PSMA CAR cells.

Materials Provided

Components	Format
2 vials of frozen cells	Each vial contains $\geq 1 \times 10^6$ 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. 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 3C	BPS Bioscience #79537

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 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% CO₂. BPS Bioscience's cell lines are stable for at least 10 passages when grown under proper conditions.

Media Required for Cell Culture and Functional Cellular Assay

Thaw Medium 3 (BPS Bioscience #60186):

F-12K medium supplemented with 10% FBS, 1% Penicillin/Streptomycin.

Growth Medium 3C (BPS Bioscience #79537):

F-12K medium supplemented with 10% FBS, 1% Penicillin/Streptomycin plus 500 µg/ml of Hygromycin B and 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% CO₂ 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% CO₂ incubator at 37°C until the cells are ready to passage.
5. Cells should be passaged before they reach 100% confluent. Switch to Growth Medium 3C for passage.

Cell Passage

1. Aspirate the medium, wash the cells with phosphate buffered saline (PBS) without Ca²⁺/Mg²⁺, and detach the cells from the culture vessel with 0.25% Trypsin/EDTA following volumes recommended for the cell vessel being used.
2. Once the cells have detached, add Growth Medium 3C 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 3C.
4. Seed into new culture vessels at the recommended sub-cultivation ratio of 1:10 to 1:20 twice per 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 $\sim 2 \times 10^6$ cells/ml.
3. Dispense 1 ml of cell suspension into 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 storage.



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

Validation Data

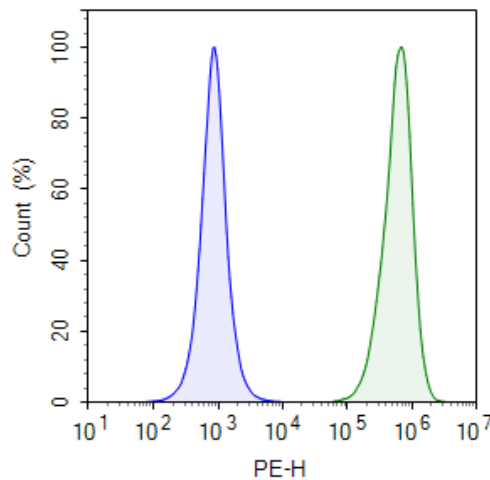


Figure 1: Expression of PSMA in PSMA (FOLH1) Luciferase CHO Cell Line assessed by flow cytometry.

PSMA (FOLH1) Luciferase CHO cells (green) and parental CHO-K1 (blue) were analyzed by flow cytometry using FluoSite Anti-PSMA Antibody, PE-Labeled (#101976). The y-axis represents the cell % and the x-axis indicates PE intensity.

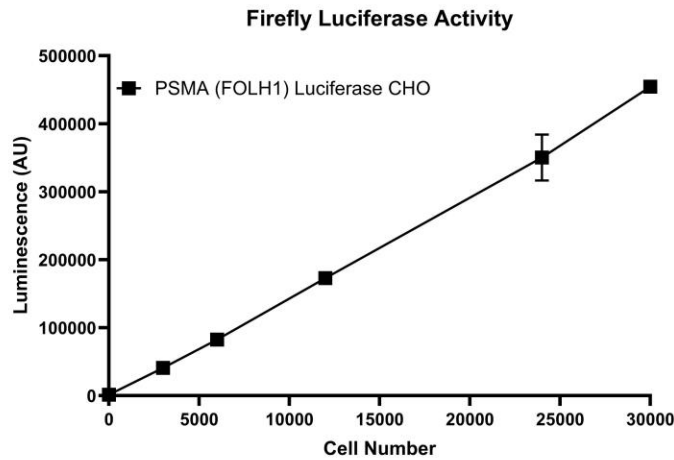


Figure 2: Luciferase Activity of PSMA (FOLH1) Luciferase CHO Cell Line.

PSMA (FOLH1) Luciferase CHO cells were seeded in a 96-well plate at various densities, and the luciferase activity was measured using the ONE-Step™ Luciferase Assay System (#60690).

Data shown is representative.

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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>.

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