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Data Sheet
PMSA (FOLH1)-CHO Recombinant Cell Line
(High Expression)
Catalog # 79641-H

Description

Recombinant clonal stable CHO cell line constitutively expressing full length human PMSA protein (Genbank #NM_004476.1). Surface expression of PMSA was confirmed by flow cytometry. This clonal cell line was selected for high level expression of PMSA. Clones exhibiting lower levels of PMSA expression are also available (#79641-M and 79641-L). Each stable clonal cell line was selected for different levels of PMSA expression to mimic different stages of cancer target cells with various PMSA expression levels.

Background

PMSA (prostate-specific membrane antigen), 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-Akt and MAPK-ERK1/2 pathways. PMSA/FOLH1 has been used as a target for imaging prostate cancer and is expressed in other tumor types and some normal tissues. Currently, PMSA/FOLH1 is the target of clinical trials of CAR-T cells and bi-specific antibodies.

Application

Useful for screening and validating antibodies against PMSA and PMSA CAR-T for immunotherapy research and drug discovery. Also useful for PMSA binding assays to screen for PMSA ligands.

Host Cell

CHO K1 cell line, Chinese Hamster Ovary

Format

Each vial contains ~ 2.5 x 10⁶ cells in 1 ml of FBS + 10% DMSO.

Storage

Store in liquid nitrogen immediately upon receipt.

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Cell Culture

Thaw Medium 3 (BPS Bioscience, #60186): Ham's F-12K medium (Hyclone, #SH30526.01) supplemented with 10% FBS (Life Technologies, #26140-079), 1% Penicillin/Streptomycin (Hyclone, #SV30010.01).

Growth Medium 3B (BPS Bioscience, #79529): Thaw Medium 3 (BPS Bioscience, #60186) plus 500 µg/ml Hygromycin (Thermo Fisher/Life Technologies, #10687010).

Recommended Culture Condition

Thawing cells: Prepare a 15 ml conical tube with 10 ml of pre-warmed Thaw Medium 3 (**no hygromycin**). Quickly thaw cells in a 37°C water bath with constant and slow agitation. Clean the outside of the vial with 70% ethanol and immediately transfer the entire content to Thaw Medium 3 (**no hygromycin**). Avoid pipetting up and down, and gently rock the conical tube.

Spin the cells down at 150 x g for 5 minutes. Discard the medium and re-suspend the cell pellet in fresh Thaw Medium 3 (**no hygromycin**). Transfer the entire content to a T75 flask to distribute the cells. Incubate the cells in a humidified 37°C incubator with 5% CO₂. After 48-72 hours of incubation, change to fresh Thaw Medium 3 (**no hygromycin**), without disturbing the attached cells. Switch to Growth Medium 3B at the first passage.

Subculture: When cells reach 90% confluency, remove the medium and wash twice with PBS (without magnesium or calcium). Treat cells with 1 ml of 0.05% trypsin/EDTA and incubate for 2-3 minutes at 37°C. After confirming cell detachment by light microscopy, add 14 ml pre-warmed medium and gently pipette up and down to dissociate cell clumps. Dispense 0.5 ml of the cell suspension into a new T75 flask containing 9.5 ml pre-warmed media. Incubate cells in a humidified 37°C incubator with 5% CO₂. Cells should be split twice per week at a 1:30 split ratio. Freeze cells in Thaw Medium 3 + 10% DMSO. Cells have been demonstrated to be stable for at least 20 passages; BPS recommends preparing frozen stocks at an early passage.

Mycoplasma Testing

This cell line has been screened using the Quick Test Mycoplasma Detection Kit (Biotool.com, #B39032) to confirm the absence of Mycoplasma contamination.

Application References

1. Zuccolotto, G., *et al.* PSMA-specific CAR-engineered T cells eradicate disseminated prostate cancer in preclinical models. *PLOS One*. 2014 Oct, **9(10)**: 1-12.
2. Junghans, R., *et al.* Phase I trial of anti-PSMA designer CAR-T cells in prostate cancer: possible role for interacting interleukin 2-T cell pharmacodynamics as a determinant of clinical response. *Prostate*. 2016 Oct, **76(14)**: 1257-1270.
3. Shengnan, Y., *et al.* Recent advances of bispecific antibodies in solid tumors. *J. Hematol. Oncol.* 2017, **10 (155)**: 1-16.
4. Kaittanis, C., *et al.* Prostate-specific membrane antigen cleavage of vitamin B9 stimulates oncogenic signaling through metabotropic glutamate receptors. *J. Exp. Med.* 2018 Jan 2, **215(1)**: 159-175.

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Vector and Sequence

Human PMSA (NM_004476.1) was cloned into pCMV3.

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CGCTGGGGCGCTGGTGTGGCGGGTGGCTTCTTTCTCCTCGGCTTCTTCCGGGTGGTTTATAAA
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HYDVLLSYPNKTHPNYISIINEDGNEIFNTSLFEPPIPGYENVSIVPPFSFSPQGMPEGLVYVNYARTE
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AETLSEVA
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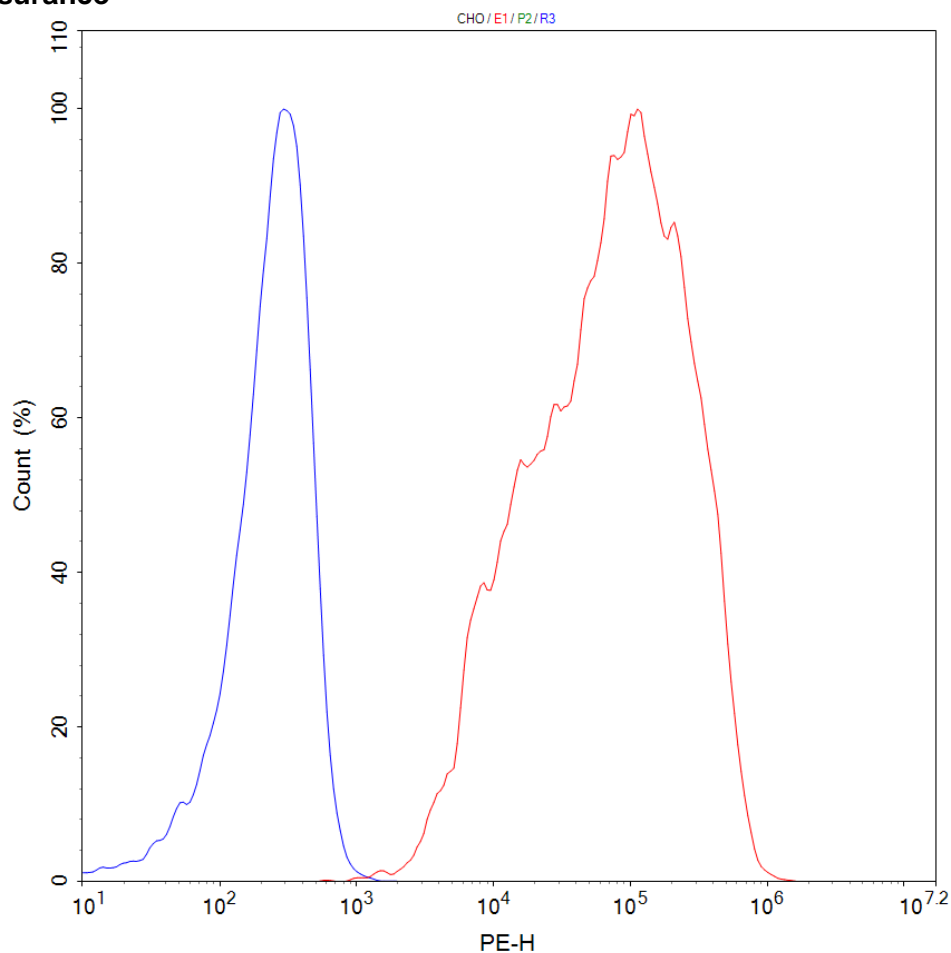


Figure 1. Expression of PMSA validated by flow cytometry. Flow cytometry using PE-conjugated anti-human PMSA/FOLH1 antibody (Biolegend, #342504) detects PMSA on the surface of PMSA-CHO Recombinant Cell Line, #79641-H. (PMSA-CHO, red; CHO parental, blue).

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Related Products

Product	Cat. #	Size
PMSA (FOLH1)-CHO Recombinant Cell Line (Medium Expression)	79641-M	2 vials
PMSA (FOLH1)-CHO Recombinant Cell Line (Low Expression)	79641-L	2 vials
Growth Medium 3B	79529	500 ml
Thaw Medium 3	60186	100, 500ml
CD123 (IL3Ra)-CHO Recombinant Cell Line (High Expression)	79640-H	2 vials
CD123 (IL3Ra)-CHO Recombinant Cell Line (Medium Expression)	79640-M	2 vials
CD123 (IL3Ra)-CHO Recombinant Cell Line (Low Expression)	79640-L	2 vials
CD19-CHO Recombinant Cell Line (High Expression)	79561-H	2 vials
CD19-CHO Recombinant Cell Line (Medium Expression)	79561-M	2 vials
CD19-CHO Recombinant Cell Line (Low Expression)	79561-L	2 vials
CD22-CHO Recombinant Cell Line (High Expression)	79557-H	2 vials
CD22-CHO Recombinant Cell Line (Medium Expression)	79557-M	2 vials
BCMA-CHO Recombinant Cell Line (Medium Expression)	79500-M	2 vials
BCMA-CHO Recombinant Cell Line (High Expression)	79500-H	2 vials
BCMA-CHO Recombinant Cell Line (Low Expression)	79500-L	2 vials

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