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Data Sheet

CD38 - CHO Recombinant Cell Line (High Expression)

Cat #: 79615-H

Product Description

Recombinant clonal stable CHO cell line constitutively expressing full length human CD38 protein, also known as ADPRC1 (Genbank #NM_001775). Surface expression of CD38 was confirmed by flow cytometry. Each stable clonal cell line was selected for different levels of CD38 expression (High, Medium, Low) to mimic different stages of cancer target cells with various CD38 expression levels.

Background

CD38 (cyclic ADP-ribose hydrolase 1, ADPRC1) is a glycoprotein and ectoenzyme which plays an important role in regulating intracellular calcium. CD38 is a highly attractive target antigen for immunotherapy because it is highly expressed on multiple myeloma cells, and at relatively low levels on normal lymphoid and myeloid cells. Expression of CD38 has also been associated with HIV infection, leukemia, and type II diabetes mellitus. CD38 CAR-T is a T cell product engineered by retroviral transduction to express a fully human CD38-specific CAR (chimeric antigen receptor). In 2015, the FDA approved daratumumab (Darzalex), a breakthrough therapy drug targeting CD38, for the treatment of multiple myeloma.

Application

1. Useful as CD38-expressing target cells in co-culture assays with CD38 CAR-T cells, for both CD38-specific cell killing assay and cytokine production assay.
2. Useful for screening and validating antibodies against CD38 and anti-CD38 CAR-T for immunotherapy research and drug discovery.
3. Useful for CD38 binding assays to screen for CD38 ligands.

Host Cell

CHO K1 cell line, Chinese Hamster Ovary

Format

Each vial contains $\sim 2 \times 10^6$ cells in 1 ml of 10% DMSO in FBS.

Storage

Store in liquid nitrogen immediately upon receipt.

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Cell Culture Conditions

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

Growth Medium 3D (BPS Bioscience #79539): F-12K Medium supplemented with 10% FBS, 1% Penicillin/Streptomycin plus 1 mg/ml of G418

Recommended Culture Conditions

Frozen Cells: Prepare a 50 ml conical tube with 10 ml of pre-warmed Thaw Medium 3 (**no G418**). 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 G418**). Avoid pipetting up and down, and gently rock the conical tube.

Spin the cells down. Discard the medium and re-suspend the cell pellet in fresh Thaw Medium 3 (**no G418**). Transfer the entire content to a T25 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 G418**), without disturbing the attached cells. Continue to change the medium every 2-3 days until the cells reach desired confluency. If slow cell growth occurs during resuscitation, increase FBS to 15% for the first week of culture. Switch to Growth Medium 3D after the first passage.

Subculture: When cells reach 90% confluency, remove the medium and GENTLY wash once with PBS (without Magnesium or Calcium). These cells are loosely adherent and detach easily so do not re-suspend the PBS directly onto the cell surface. Treat cells with 2 ml of 0.05% trypsin/EDTA and incubate for 2-3 minutes at 37°C. After confirming cell detachment by light microscopy, add 10 ml pre-warmed medium and gently pipette up and down to dissociate cell clumps. Transfer cells to a 15 ml conical tube and spin down cells. Remove the medium and re-suspend cells in 10 ml of pre-warmed Growth Medium 3D. Dispense 5 ml of the cell suspension into a new T75 flask containing 20 ml pre-warmed media. Incubate cells in a humidified 37°C incubator with 5% CO₂. Freeze cells in freezing medium (10% DMSO in FBS) in cryogenic vials when cells reach 90% confluency. Place vials in an insulated container for slow cooling and store at -80°C overnight. Transfer to liquid nitrogen the next day for storage. Cells have been demonstrated to be stable for at least 15 passages; BPS recommends preparing frozen stocks at an early passage so cells are not used beyond passage 20.

Mycoplasma Testing

This cell line has been screened using the MycoAlert™ Mycoplasma Detection Kit (Lonza, #LT07-118) to confirm the absence of Mycoplasma contamination. MycoAlert Assay Control Set (Lonza, #LT07-518) was used as a positive control.

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Application References

1. van de Donk, NW, *et al.* Monoclonal antibodies targeting CD38 in hematological malignancies and beyond.
Immunological Reviews. 2016 Mar; **270**: 95-112
2. Drent, E, *et al.* Pre-clinical evaluation of CD38 chimeric antigen receptor engineered against T cells for the treatment of multiple myeloma.
Haematologica. 2016 May; **101** (5): 616-625
3. Sanchez, L, *et al.* Daratumumab: a first-in-class CD38 monoclonal antibody for the treatment of multiple myeloma.
Journal of Hematology & Oncology. 2016 Jun; **9**: 51

Vector and Sequence

Human CD38 (NM_001775) was cloned into pIRESneo3.

MANCEFSPVSGDKPCCRLSRRAQLCLGVLSILVLILVVVLAVVVPRWRQQWSGPGTTKRFPETVL
ARCVKYTEIHPEMRHVDCQSVWDAFKGAFISKHPCNITEEDYQPLMKLGTQTVPCNKILLWSRIK
DLAQFTQVQRDMFTLEDTLGLYADDLTWCGEFNTSKINYQSCPDWRKDCSNNPVSFVWKT
SRRFAEAACDVVHMLNGSRSKIFDKNSTFGSVEVHNLQPEKVQTLEAWVIHGGREDSRDLCQ
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Quality Assurance

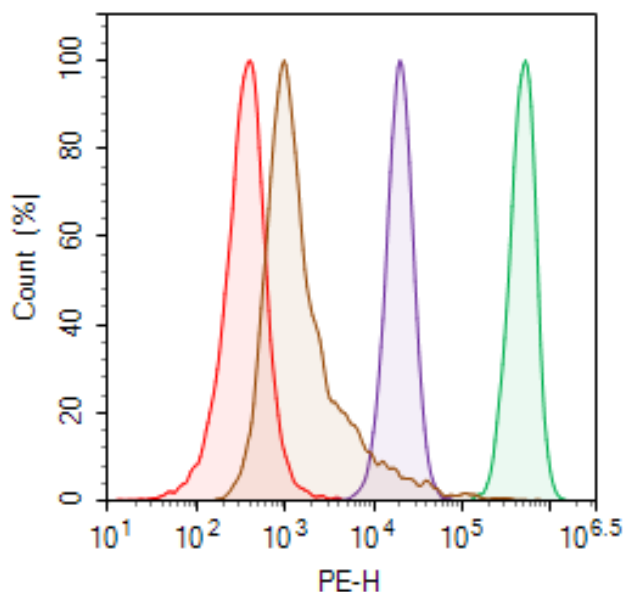


Figure 1. Expression of CD38 validated by flow cytometry. Flow cytometry using PE-conjugated anti-human CD38 antibody (Biolegend, #303505) to detect CD38 surface expression of CD38-CHO Recombinant Cell Lines with different expression levels: 79615-H, high expresser: green; 79615-M, medium expresser: purple; 79615-L, low expresser: brown; WT CHO negative control: red.

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Related Products

<u>Product</u>	<u>Cat. #</u>	<u>Size</u>
CD38 - CHO Recombinant Cell Line (Medium Expression)	79615-M	2 vials
CD38 - CHO Recombinant Cell Line (Low Expression)	79615-L	2 vials
CD38, His-Tag (Human), HiP™	71277	100 µg
CD38, His-Tag (Mouse), HiP™	79070	100 µg
CD38, His-Tag, APC-labeled	71883	100 µg
CD38 Inhibitor Screening Assay Kit (Hydrolase Activity)	79287	96 rxns.

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