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**Data Sheet**  
**CD37/CHO Recombinant Cell Line**  
**(High Expression)**  
**Catalog #79607-H**

**DESCRIPTION:**

Recombinant clonal stable CHO cell line constitutively expressing full length human CD37 protein, also known as GP52-40; TSPAN26; leukocyte antigen CD37 (Genbank #NM\_001774). Surface expression of CD37 was confirmed by flow cytometry. Each stable clonal cell line was selected for different levels of CD37 expression, (High, Medium, Low), to mimic different stages of cancer target cells with various CD37 expression levels.

**BACKGROUND:**

CD37 expression is restricted to cells of the immune system, with highest abundance on mature B cells, and lower expression is found on T cells and myeloid cells. CD37 is a cell surface glycoprotein that is known to complex with integrins and other transmembrane 4 superfamily proteins. It is also expressed in B-cell non-Hodgkin Lymphomas, in chronic lymphocytic leukemia (CLL), and in some cases of cutaneous and peripheral T-cell lymphomas.

CAR-37 T cells have demonstrated antigen-specific activation, cytokine production, and cytotoxic activity in models of B- and T-cell lymphomas *in vitro* and *in vivo*, including patient-derived xenografts. T cells expressing anti-CD37 CAR have substantial activity against 2 different lymphoid lineages, without evidence of significant T cell fratricide. Furthermore, anti-CD37 CARs have been combined with anti-CD19 CARs to generate dual-specific CAR T cells capable of recognizing CD19 and CD37 alone or in combination. CD37-CAR T cells represent a novel therapeutic agent for the treatment of patients with CD37-expressing lymphoid malignancies.

**APPLICATION:**

1. Useful as CD37-expressing target cells in co-culture assay with CD37-CAR-T cells, for both CD37-specific cell killing assay and cytokine production assay.
2. Useful for screening and validating antibodies against CD37 and anti-CD37 CAR-T for immunotherapy research and drug discovery.
3. Useful for CD37 binding assays to screening for CD37 ligands.

**HOST CELL:**

CHO K1 cell line, Chinese Hamster Ovary

**FORMAT:**

Each vial contains ~ 2 x 10<sup>6</sup> cells in 1 ml of 10% DMSO in FBS.

**STORAGE:**

Store in liquid nitrogen immediately upon receipt.

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#### **CELL CULTURE:**

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

**Growth Medium 3D (BPS Bioscience, #79539):** Thaw Medium 3 (BPS Bioscience, #60186) plus 1 mg/ml G418 (Thermo Fisher, #11811031).

#### **RECOMMENDED CULTURE CONDITION:**

**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 at 150 x g for 5 minutes. 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% CO<sub>2</sub>. 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 0.25% 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 centrifuge at 200 x g for 5 minutes. 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% CO<sub>2</sub>. Freeze cells in freezing medium (10% DMSO in FBS) when cells reach 90% confluency. 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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#### REFERENCES:

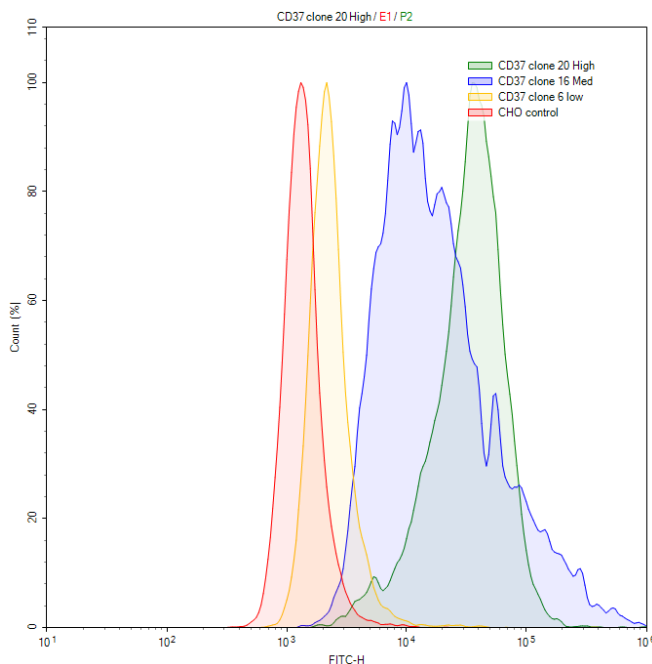
1. Scarfò, I. *et al.* Anti-CD37 chimeric antigen receptor T cells are active against B and T cell lymphomas. *Blood*. 2018 Oct; **132(14)**:1495-1506
2. Witkowska, M. *et al.* Investigational therapies targeting CD37 for the treatment of B-cell lymphoid malignancies. *Expert Opin Investig Drugs*. 2018 Feb; **27(2)**:171-177

#### VECTOR AND SEQUENCE:

Human CD37 (NM\_001774) was cloned into pIRESneo.

MSAQESCLSLIKYFLVFNLFVFLVGLSLIFCFGIWILIDKTSFVSVFVGLAFVPLQIWSKVLAIISGIFT  
MGIALLGCVGALKELRCLLGLYFGMLLLL FATQITLGILISTQRAQLERSLRDVVEKTIQKYGTNP  
EETAEEESWDYVQFQLRCCGWHYPQDWFQVLILRGNNGSEAHRVPCSCYNLSATNDSTILDKVI  
LPQLSRLGHLARSRHSADICAVPAESHYREGCAQGLQKWLHNNLISIVGICLGVGLLELGFMTL  
SIFLCRNLDHVYNRLARYR

#### QUALITY ASSURANCE:



**Figure 1. Expression of CD37 validated by flow cytometry.** Flow cytometry using FITC-conjugated anti-human CD37 antibody (Biolegend, #356304) detects CD37 surface expression of CD37-CHO Recombinant Cell Lines with different expression levels: #79607-H, high expresser, clone 20, green; #79607-M, medium expresser, clone 16, blue; #79607-L, low expresser, clone 6, yellow; WT CHO negative control: red.

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**RELATED PRODUCTS:**

<b>Product</b>	<b>Cat. #</b>	<b>Size</b>
CD37/CHO Recombinant Cell Line (Medium Expression)	79607-M	2 vials
CD37/CHO Recombinant Cell Line (Low Expression)	79607-L	2 vials
CS1/SLAMF7/CD319 Recombinant Cell Line (High Expression)	79608-H	2 vials
CS1/SLAMF7/CD319 Recombinant Cell Line (Medium Expression)	79608-M	2 vials
CS1/SLAMF7/CD319 Recombinant Cell Line (Low Expression)	79608-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 (High Expression)	79500-H	2 vials
BCMA/CHO Recombinant Cell Line (Medium Expression)	79500-M	2 vials
BCMA/CHO Recombinant Cell Line (Low Expression)	79500-L	2 vials

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