

**Description**

Recombinant CD5-CHO K1 cell line stably expressing a full-length human CD5 receptor (accession number: NM\_014207.3). Surface expression of hCD5 was confirmed by flow cytometry. Each stable clonal cell line was selected for different levels of hCD5 expression (High, Medium and Low) to mimic different stages of cancer target cells with various CD5 expression levels.

**Background**

CD5 is a type-1 transmembrane glycoprotein with an extracellular region composed of three scavenger receptor, cysteine-rich domains. This lymphocytic-specific scavenger receptor functions at the interphase of the innate and adaptive immune responses. It is involved in: (i) microbial-associated pattern recognition; and (ii) modulation of intracellular signals mediated by antigen-specific receptor present in T and B cells. CD5 is expressed by all T cells and some B cell subsets (B1a and Breg or B10). T cells usually express higher levels of CD5 than B cells, and CD5 is upregulated in T cells upon strong activation. CD5 is a signaling co-receptor, associated with the antigen-specific receptor complex of T and B cells, and down-modulates the activation/differentiation signals delivered upon specific antigen recognition. The signaling pathway used by CD5 is only partially known.

**Application**

- Screen for activators or inhibitors of antibody-mediated signaling for immunotherapy research and drug discovery.
- Characterize CD5 antibodies and ligands.

**Materials Provided**

| Components              | Format  |
|-------------------------|---|
| 2 vials of frozen cells | ~2 x 10 <sup>6</sup> cells in 1 ml of 90% FBS, 10% DMSO |

**Host Cell**

CHO K1

**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 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    | <a href="#">BPS Bioscience #60186</a> |
| Growth Medium 3B | <a href="#">BPS Bioscience #79529</a> |

**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](mailto: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 a comparable but not BPS-validated media, formulation components can be found below.



Note: Thaw Media does *not* contain selective antibiotics. However, Growth Media *does* contain selective antibiotics, which are used for maintaining cell lines over many passages. Cells should be grown at 37 °C with 5% CO<sub>2</sub>. BPS Bioscience's cell lines are stable for at least 15 passages when grown under proper conditions.

## Media Required for Cell Culture

*Thaw Medium 3 (BPS Bioscience #60186):*

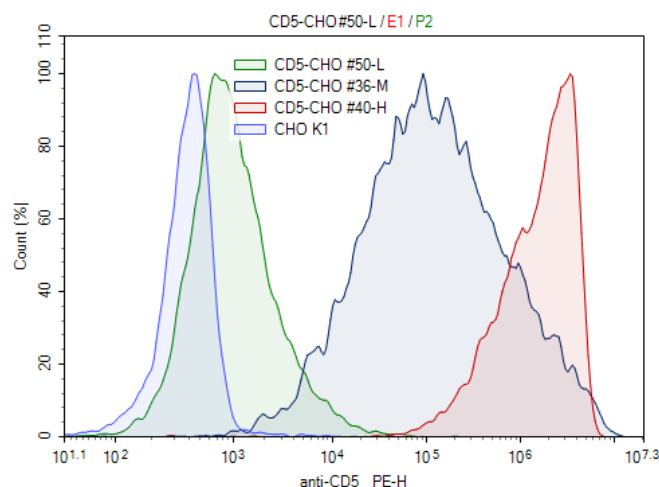
Ham's F-12 medium (Hyclone, #SH30526.01) supplemented with 10% FBS (Thermo Fisher, #26140079), 1% Penicillin/Streptomycin (Hyclone, #SV30010.01)

*Growth Medium 3B (BPS Bioscience #79529):*

Thaw Medium 3 (BPS Bioscience, #60186) plus 500 µg/ml of Hygromycin B (Thermo Fisher, #10687010).

## Validation

Cell surface expression of human CD5 in CHO K1 cells was confirmed by flow cytometry.



**Figure 1.** Flow cytometry analysis of cell surface expression of hCD5 in CHO K1 cells. CD5-CHO K1 cells or control CHO K1 cells were stained with PE-labeled anti-human CD5 antibody (Biolegend, #980358) and analyzed by flow cytometry. Y-axis is the % cell number. X-axis is the intensity of PE.

Green: low expression cell line; black: medium expression cell lines; red: high expression cell lines; blue: parental control CHO K1 cells.

## Sequence

Human CD5 sequence (accession number: NM\_014207.3)

MPMGSLQPLATLYLLGMLVASCLGRLSWYDPDFQARLTRSNSKCQGQLEVYLKDGWHMVCSQSWGRSSKQWEDPSQASKVC  
QRLNCGVPLSLGPFLVTYTPQSSIICYGQLGSFSNCSHSRNDMCHSLGLTCLEPQKTTPTTRPPPTTTPEPTAPPRLQLVAQSGGQ  
HCAGVVEFYSGSLGGTISYEAQDKTQDLENFLCNNLQCGSFLKHLPETEAGRAQDPGEPREHQPLPIQWKIQNSSCTSLEHCFRKI  
KPQKSGRVLALLCSGFQPKVQSRLVGGSSICEGTVEVRQGAQWAALCDSSSARSSLRWEEVCREQQCGSVNSYRVLDAGDPTSR  
GLFCPHQKLSQCHELWERNYSYCKKVFTVCQDPNPAGLAAGTVASIILALVLLVLLVVCPLAYKKLVKKFRQKKQRQWIGPTGM  
NQNMFSHRNHTATVRSHAENPTASHVDNEYSQPPRNSHLSAYPALEGALHRSSMQPDNSSDSYDLHGAQRL

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## Troubleshooting Guide

Visit [bpsbioscience.com/cell-line-faq](https://bpsbioscience.com/cell-line-faq) for detailed troubleshooting instructions. For all further questions, please email [support@bpsbioscience.com](mailto:support@bpsbioscience.com).

## Related Products

| <i>Products</i>  | <i>Catalog #</i> | <i>Size</i> |
|--|------------------|-------------|
| CD5 (Human) CRISPR/Cas9 Lentivirus (Non-Integrating)   | 78198            | 500 µl x 2  |
| CD5 (Human) CRISPR/Cas9 Lentivirus (Integrating)       | 78119            | 500 µl x 2  |
| CD5 – CHO K1 Recombinant Cell Line (Medium Expression) | 78290-M          | 2 vials     |
| CD5 – CHO K1 Recombinant Cell Line (Low Expression)    | 78290-L          | 2 vials     |
| CD5, Fc Fusion, Avi-Tag, Biotin-labeled, HiP™          | 101006           | 20 µg/50 µg |
| CD5L, Avi-His-Tag                                      | 101007           | 100 µg/1 mg |