

Description

Cadherin 17 (CDH17) HEK293 Cell Line is a HEK293 cell line expressing CDH17 (Cadherin 17; NM_004063.4) under the control of the Elongation Factor 1 alpha (EF1 α) promoter. This cell line was generated by lipophilic transfection followed by zeocin selection and limited dilution. Individual clones were screened for CDH17 expression levels by flow cytometry, and a high expressing clone was selected to generate this cell line.

This cell line has been validated by flow cytometry.

Background

Human CDH17 (Cadherin 17) is an oncofetal protein that is reactivated in adult tissues to drive the progression of various diseases, especially gastrointestinal cancers. Its overexpression is strongly associated with gastrointestinal adenocarcinomas, including colorectal, gastric, and pancreatic cancers. CDH17's role extends to promoting key cancer hallmarks like cell proliferation, invasion, and metastasis. As a cell adhesion molecule, CDH17 facilitates metastatic spread by interacting with other proteins, such as integrins, and mediating cell-to-cell junctions within tumor clusters. Furthermore, CDH17 expression helps maintain the "stemness" of cancer cells, which is linked to tumor recurrence and resistance to chemotherapy.

Application

- Screen therapeutic antibodies, ADCs (antibody drug conjugates), or CAR (chimeric antigen receptor) constructs targeting CDH17.

Materials Provided

Components	Format
2 vials of frozen cells	Each vial contains >1 x 10 ⁶ cells in 1 ml of Cell Freezing Medium (BPS Bioscience #79796)

Parental Cell Line

HEK293, Human Embryonic Kidney, 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 and cellular assays. 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 1	BPS Bioscience #60187
Growth Medium 1Z	BPS Bioscience #83620

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 at support@bpsbioscience.com 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**Thaw Medium 1 (BPS Bioscience #60187):*

MEM medium supplemented with 10% FBS, 1% non-essential amino acids, 1 mM Na pyruvate, 1% Penicillin/Streptomycin.

Growth Medium 1Z (BPS Bioscience #83620):

MEM medium supplemented with 10% FBS, 1% non-essential amino acids, 1 mM Na pyruvate, 1% Penicillin/Streptomycin plus 100 µg/ml Zeocin.

Cell Culture Protocol

Note: HEK293 cells are derived from human material and thus the use of adequate safety precautions is recommended.

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 1.

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 1.
3. Transfer the resuspended cells to a T25 flask or T75 flask and incubate at 37°C in a 5% CO₂ incubator.
4. After 24 hours of culture, check for cell attachment and viability. Change medium to fresh Thaw Medium 1 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 are fully confluent. At first passage and subsequent passages, use Growth Medium 1Z.

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 0.05% Trypsin/EDTA.
2. Once the cells have detached, add Growth Medium 1Z 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 1Z.
4. Seed into new culture vessels at the recommended sub-cultivation ratio of 1:8 twice per week.

Cell Freezing

1. Aspirate the medium, wash the cells with PBS without Ca²⁺/Mg²⁺, and detach the cells from the culture vessel with 0.05% Trypsin/EDTA.
2. Once the cells have detached, add Growth Medium 1Z and count the cells.
3. Spin down the cells at 300 x g for 5 minutes, remove the medium and resuspend the cells in 4°C Cell Freezing Medium (BPS Bioscience #79796) at ~2 x 10⁶ cells/ml.
4. Dispense 1 ml of cell suspension into each cryogenic vial. Place the vials in an insulated container for slow cooling and store at -80°C overnight.
5. Transfer the vials to liquid nitrogen the next day for long term storage.



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

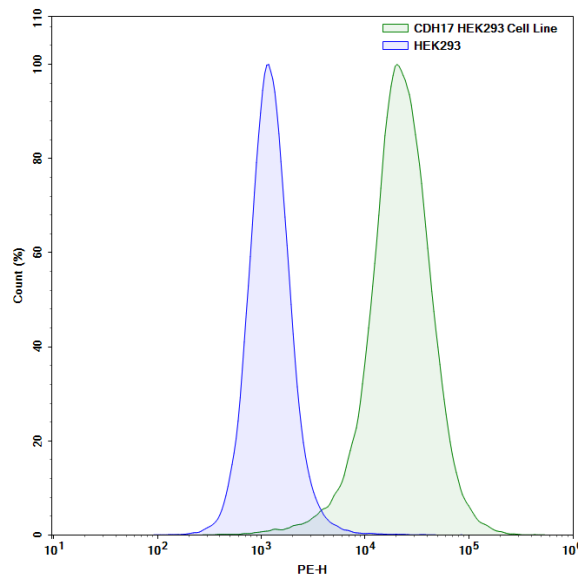


Figure 1: Flow cytometry analysis of CDH17 cell surface expression in Cadherin 17 (CDH17) HEK293 Cell Line.

CDH17 HEK293 cells (#83601) (green) and control parental HEK293 cells (blue) were stained with FluoSite™ Anti-CDH17 Antibody, PE-Labeled (#102827) and analyzed by flow cytometry. The y-axis shows the % cell number, and the x-axis characterizes the PE intensity.

Data shown is representative.

Sequence

Human CDH17 sequence (accession number NM_004063.4)

MILQAHLHSLCLLMLYLATGYGQEGKFSGPLKPMTFSIYEGQEPSQIIFQFKANPPAVTFELTGETDNIFVIEREGLLYNRALDRET
RSTHNLQVAALDANGIIVEGPVPITIKVKDINDNRPTFLQSKYEGSVRQNSRPGKPFYVFNATDLDDPATPNGQLYYQIVIQLPMI
NNVMYFQINNKTGAISLTREGSQELNPAKNPSYNLVISVKDMGGQSENSFSDDTTSVDIIVTENIWKAPKPVEMVENSTDPHPIKIT
QVRWNDPGAQYSLVDKEKLPFRPFIDQEGDIYVTQPLDREEKDAYVFYAVAKDEYKPLSYPLEIHVKVKDINDNPPTCPSPVTV
FEVQENERLGNISIGTLTAHDRDEENTANSFLNYRIVEQTPKLPMDGLFLIQTYAGMLQLAKQSLKKQDTPQYNLTIEVSDKDFKTL
CFVQINVIDINDQIPIFEKSDYGNLTLAEDTNIGSTILTIQATDADEPFTGSSKILYHIKGDSEGR LGVDTDPHTNTGYVIIKKPLDFET
AAVSNIVFKAENPEPLVFGVKYNASSFAKFTLIVTDVNEAPQFSQHVFQAKVSEDVAIGTKVGNVTAKDPEGLDISYSLRGDTRG
WLKIDHVTGEIFSVAPLDREAGSPYRVQVATEVGGSSLSVSEFHLILMDVNDNPPRLAKDYTG LFFCHPLSAPGSLIFEATDDD
QHLFRGPHFTFSLGSGSLQNDWEVSKINGTHARLSTRHTEFEEREYVVLIRINDGGRPPLEGIVSLPVTFCSCVEGSCFRPAGHQTG
IPTVGMVAVGILLTLLVIGIILAVVFIRIKKDKGKDNVESQAQASEVKPLRS

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<i>Products</i>	<i>Catalog #</i>	<i>Size</i>
FluoSite™ Anti-CDH17 Antibody, PE-Labeled	102827	25 tests/ 100 tests
FluoSite™ Anti-CDH17 Antibody, APC-Labeled	102828	25 tests/ 100 tests
CDH17 Lentivirus	82346	500 µl x 2

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