

Description

Firefly Luciferase BCMA Raji Cell Line is a Raji cell line constitutively expressing full length human BCMA (B-cell maturation antigen, also known as CD269; NM_001192) and firefly luciferase.

This cell line has been validated by flow cytometry and for luciferase activity.

Background

B-Cell Maturation Antigen (BCMA), also known as CD269, is a cell surface receptor of the TNF receptor superfamily that recognizes B-Cell Activating Factor (BAFF). BCMA is preferentially expressed on mature B-lymphocytes and Multiple Myeloma (MM) cells. BCMA is a highly attractive target antigen for immunotherapy, not only because of its restricted expression in nonmalignant tissue, but also due to its almost universal expression on MM cells. Preclinical studies using CAR (Chimeric Antigen Receptor) T cells targeting BCMA have demonstrated anti-MM activity, and in 2017, the FDA granted BCMA CAR-T Cell immunotherapy breakthrough designation in treating Multiple Myeloma.

Application

- Useful for validation of anti-BCMA bispecific antibodies.
- Useful for screening and validating antibodies against BCMA or anti-BCMA/CD19 dual CAR-T for immunotherapy research and drug discovery.

Materials Provided

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

Parental Cell Line

Raji, human lymphoblastoid cell line, suspension.

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.

Name	Ordering Information
Thaw Medium 2	BPS Bioscience #60184
Growth Medium 2A	BPS Bioscience #60190

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 2 (BPS Bioscience #60184):

RPMI1640 medium (ATCC modification) supplemented with 10% FBS, 1% Penicillin/Streptomycin.

Growth Medium 2A (BPS Bioscience #60190):

RPMI1640 medium (ATCC modification) supplemented with 10% FBS, 1% Penicillin/Streptomycin plus 1000 µg/ml of Geneticin and 200 µg/ml Hygromycin B.

Cell Culture Protocol

Note: Raji cells are derived from human material and thus the use of adequate safety precautions are 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 2.

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 2.
3. Transfer the resuspended cells to a T25 flask and incubate at 37°C in a 5% CO₂ incubator.
4. After 48-72 hours of culture, check for cell viability, change to fresh Thaw Medium 2, 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 reach a density of 2 x 10⁶ cells/ml. Switch to Growth Medium 2A at first and subsequent passages.

Cell Passage

Dilute the cell suspension into new culture vessels before they reach a density of 2×10^6 cells/ml, with Growth Medium 2A. The sub-cultivation ratio should maintain the cells between 0.2×10^6 cells/ml and 2×10^6 cells/ml.

Cell Freezing

1. Spin down the cells at $300 \times g$ for 5 minutes. Remove the medium and resuspend the cell pellet in 4°C Cell Freezing Medium (BPS Bioscience #79796) at a density of $\sim 2 \times 10^6$ cells/ml.
2. 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.
3. 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.

Validation Data

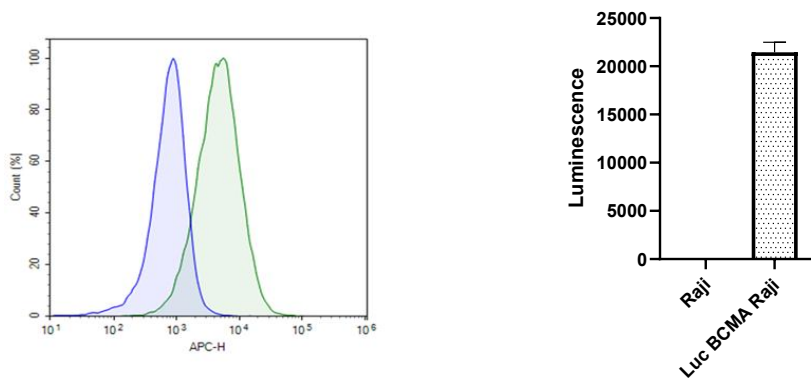


Figure 1. BCMA and luciferase expression analysis in the Firefly Luciferase BCMA Raji Cell Line.

Left: Firefly Luciferase BCMA Raji cells (green) or control Raji cells (blue), were labelled with biotin-conjugated anti-human BCMA followed by detection with APC-conjugated streptavidin and analyzed by flow cytometry. The y axis represents the % of cells, while the x axis indicates fluorophore intensity.

Right: Firefly luciferase BCMA Raji cells were seeded in a 96-well plate at a density of 30,000 cells/well. Luciferase activity was measured using the ONE-Step™ luciferase assay system (BPS Bioscience #60690).

Data shown is representative.

Sequence

Human BCMA (accession number NM_001192)

MLQMAGQCSQNEYFDSLLHACIPCQLRCSNTPPLTCQRYCNASVTNSVKGNTNAILWTCLGLSLIISLAVFVLMFLLRKINSEPLKD
EFKNTGSGLLGMANIDLEKSRGTGDEIILPRGLETVVEECTCEDCIKSKPKVSDSDHCFPLPAMEEGATILVTTKTNDYCKSLPAALSAT
EIEKSISAR

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Visit bpsbioscience.com/license for the label license and other key information about this product.

Troubleshooting Guide

Visit bpsbioscience.com/cell-line-faq for detailed troubleshooting instructions. For lot-specific information and all other questions, please visit <https://bpsbioscience.com/contact>.

Related Products

<i>Products</i>	<i>Catalog #</i>	<i>Size</i>
Anti-BCMA Antibody	101219	100 µg
Dual Epitope Anti-BCMA CAR-T Cells	78660	1 vial/ 5 vials
Firefly Luciferase BCMA Knockout RPMI-8226 Cell Line	82689	2 vials
Anti-BCMA-Anti-CD19-Anti-CD3 Trispecific Molecule	100761	50 µg/ 100 µg

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