

Description

Recombinant MC38 cells constitutively expressing the firefly (*Photinus pyralis*) luciferase gene under the control of a CMV promoter.

Background

The MC38 cell line was derived from a colon adenocarcinoma from a C57BL/6 mouse. The cells are adherent and have a fibroblast morphology. MC38 cells form tumors and metastases following implantation into syngeneic C57BL/6 mice or immunocompromised mice. The signal generated by the firefly luciferase is proportional to cell numbers.

Application

1. Use as an internal control in CAR-T or NK co-culture killing assays
2. *In vitro* and *in vivo* bioluminescence imaging

Materials Provided

Components	Format
2 vials of frozen cells	Each vial contains 2×10^6 cells in 1 ml of cell freezing medium (BPS Bioscience, #79796)

Parental Cell Line

MC38, Murine Colon Adenocarcinoma, fibroblast, 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 6	BPS Bioscience #60183
Growth Medium 6E	BPS Bioscience #78385

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, it is *highly recommended* to use these validated and optimized media from BPS Bioscience. 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 for maintaining the presence of the transfected gene(s) over passages. Cells should be grown at 37°C with 5% CO₂. BPS Bioscience's cell lines are stable for at least 15 passages when grown under proper conditions.

Media Required for Cell Culture

Thaw Medium 6 (BPS Bioscience, #60183):

DMEM medium supplemented with 10% FBS, 1% Penicillin/Streptomycin.

Growth Medium 6E (BPS Bioscience, #78385):

DMEM medium supplemented with 10% FBS, 1% Penicillin/Streptomycin plus 600 µg/ml Hygromycin B.

Cell Culture Protocol

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 6 (**no Hygromycin**).
- 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 6 (**no Hygromycin**).
 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 6 (**no Hygromycin**), 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 6E (**contains Hygromycin**).

Cell Passage

1. Aspirate the medium, wash the cells with phosphate buffered saline (PBS), and detach the cells from the culture vessel with 0.05% Trypsin/EDTA.
2. Once the cells have detached, add Growth Medium 6E and transfer to a tube. Spin down cells at 300 x g for 5 minutes, remove the medium and resuspend the cells in Growth Medium 6E (**contains Hygromycin**). Seed into new culture vessels at the desired sub-cultivation ratio of 1:8 to 1:10 weekly or twice per week.

Cell Freezing

1. Aspirate the medium, wash the cells with phosphate buffered saline (PBS), and detach the cells from the culture vessel with 0.05% Trypsin/EDTA.
2. Once the cells have detached, add Growth Medium 6E 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 Freezing Medium (BPS Bioscience #79796, or 10% DMSO + 90% FBS) at ~2 x 10⁶ cells/ml.
4. Dispense 1 ml of cell aliquots into cryogenic vials. 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 storage.



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

A. Validation Data

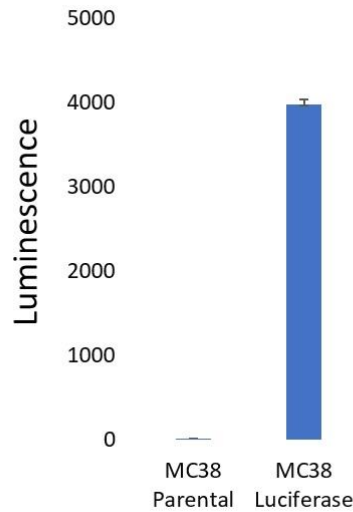


Figure 1: Luciferase activity in the Firefly Luciferase MC38 Cell Line. Firefly Luciferase MC38 cells or Parental MC38 cells were seeded in a 96-well plate at 10,000 cells/well in 100 µl Thaw Medium 6, and the luciferase activity was measured using the ONE-Step™ Luciferase assay system (BPS Bioscience #60690).

License Disclosure

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Troubleshooting Guide

Visit bpsbioscience.com/cell-line-faq for detailed troubleshooting instructions. For all further questions, please email support@bpsbioscience.com.

Related Products

<i>Products</i>	<i>Catalog #</i>	<i>Size</i>
Firefly Luciferase - CHO Recombinant Cell Line	79725	2 vials
Firefly Luciferase Raji Cell Line	78622	2 vials
Firefly Luciferase K562 Cell Line	78621	2 vials
Firefly Luciferase Molm13 Cell Line	78372	2 vials
GFP/Firefly Luciferase MM.1S Cell Line	78376	2 vials
Firefly Luciferase – RPMI 8226 Recombinant Cell Line	79834	2 vials
Firefly Luciferase Lentivirus (G418, Hygromycin, and Puromycin)	79692	500 µl x 2
Firefly Luciferase-eGFP Lentivirus (G418 or Puromycin)	79980	500 µl x 2