YUMMER1.7 H2B-GFP Mouse Melanoma Cell Line

Cancer Cell Line

Cat. # SCC245

Pack size: >1x10^6 viable cells/vial

Store in liquid nitrogen

FOR RESEARCH USE ONLY.
NOT FOR USE IN DIAGNOSTIC PROCEDURES.
NOT FOR HUMAN OR ANIMAL CONSUMPTION.
THIS PRODUCT CONTAINS GENETICALLY MODIFIED ORGANISMS.

Data Sheet

Background

The great promise of immune-based therapies in cancer and recent progress in successful application of these approaches has brought to the fore the necessity of immune-competent models to evaluate immune system responses to cancer cells. Melanomas exhibit relatively high somatic mutation burden, and these mutations can act as neoantigens that generate anti-tumor immune responses. The development of immunocompetent cell models is critical to the advancement of cancer immunotherapy and understanding of immune responses, although few tractable model systems are available.

The YUMMER1.7 H2B-GFP mouse melanoma cell line is both immunocompetent and reflective of the somatic mutations common in melanomas. The YUMMER1.7 H2B-GFP cell line carries three driver mutations of melanoma: *Braf* V600E, *Pten -/-* and *Cdkn2 -/-*.[1,2] In addition, the YUMMER1.7 H2B-GFP cell line harbors a high frequency of stable UV-induced somatic mutations which have been shown to stimulate host adaptive immune response.[3] YUMMER1.7-H2B-GFP cells stably express GFP fused to histone H2B, allowing visualization of chromosomal dynamics and facilitating in vivo detection of YUMMER1.7 melanoma cells and YUMMER1.7-derived tumors. The unique features of the YUMMER1.7 H2B-GFP cell line make it a valuable model for studies of immune checkpoint inhibition and mechanisms of anti-tumor responses.

Source

The YUMMER1.7 H2B-GFP mouse melanoma cell line is a tetraploid clonal isolate derived from YUMM1.7 cells exposed to UVB radiation into which a histone H2B-GFP fusion has been stably introduced via transfection. The original YUMM1.7 cell line was derived from a 4-hydroxytamoxifen-induced melanoma tumor in a male C57/B1/6 mouse into which mutations from the *Braf/Pten* genetically-engineered mouse model had been introduced via backcrossing.[1] The YUMMER1.7 H2B-GFP cell line harbors the *Braf* V600E mutation and is homozygous negative for wild-type *Pten* and *Cdkn2*.[3]

Storage and Handling

YUMMER1.7 H2B-GFP mouse melanoma cell line should be stored in liquid nitrogen. The cells can be cultured for at least 10 passages after initial thawing without significantly affecting the cell marker expression and functionality.

Quality Control Testing

- Each vial contains ≥ 1X10^6 viable cells.
- Cells are tested negative for infectious diseases by a Mouse Essential CLEAR panel by Charles River Animal Diagnostic Services.
- Cells are verified to be of mouse origin and negative for inter-species contamination from rat, chinese hamster, Golden Syrian hamster, human and non-human primate (NHP) as assessed by a Contamination CLEAR panel by Charles River Animal Diagnostic Services.
- Cells are negative for mycoplasma contamination.

Representative Data

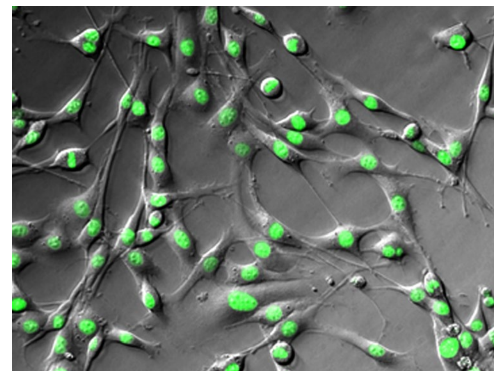

Figure 1. Overlay of bright-field and GFP fluorescent images.

References

1. Meeth K et al. (2016) The YUMM lines: a series of congenic mouse melanoma cell lines with defined genetic alterations. *Pigment Cell Melanoma Res* 29(5): 590-597.
2. Dankort D et al. (2009) Braf(V600E) cooperates with Pten loss to induce metastatic melanoma. *Nat Genet*. 41(5): 544-552.
3. Wang J et al. (2017) UV-induced somatic mutations elicit a functional T cell response in the YUMMER1.7 mouse melanoma model. *Pigment Cell Melanoma Res* 30(4): 428-435.

Rev.1.0/2019-09-16/SCC245/AN

Protocol

Thawing Cells

1. Do not thaw the cells until the recommended medium is on hand. Cells can grow on normal tissue cultureware surfaces without any additional coating.

   YUMMER1.7 H2B-GFP Expansion Medium: Cells are thawed and expanded in DMEM/F12 medium (Cat. No. DF-041-B) supplemented with 10% FBS (Cat. No. ES-009-B) and 1X non-essential amino acids (Cat. No. TMS-001-C).
2. Remove the vial of frozen YUMMER1.7 H2B-GFP cells from liquid nitrogen and incubate in a 37°C water bath. Closely monitor until the cells are completely thawed. Maximum cell viability is dependent on the rapid and complete thawing of frozen cells.

   IMPORTANT: Do not vortex the cells.
3. As soon as the cells are completely thawed, disinfect the outside of the vial with 70% ethanol. Proceed immediately to the next step.
4. In a laminar flow hood, use a 1 or 2 mL pipette to transfer the cells to a sterile 15 mL conical tube. Be careful not to introduce any bubbles during the transfer process.
5. Using a 10 mL pipette, slowly add dropwise 9 mL of YUMMER1.7 H2B-GFP Expansion Medium (Step 1 above) to the 15 mL conical tube.

   IMPORTANT: Do not add the entire volume of media all at once to the cells. This may result in decreased cell viability due to osmotic shock.
6. Gently mix the cell suspension by slowly pipetting up and down twice. Be careful not to introduce any bubbles.

   IMPORTANT: Do not vortex the cells.
7. Centrifuge the tube at 300 x g for 2-3 minutes to pellet the cells.
8. Decant as much of the supernatant as possible. Steps 5-8 are necessary to remove residual cryopreservative (DMSO).
9. Resuspend the cells in 15 mL of YUMMER1.7 H2B-GFP Expansion Medium.
10. Transfer the cell mixture to a T75 tissue culture flask.
11. Incubate the cells at 37°C in a humidified incubator with 5% CO_2.

Subculturing Cells

1. Carefully remove the medium from the T75 tissue culture flask containing the confluent layer of YUMMER1.7 H2B-GFP cells.
2. Rinse the flask with 10 mL 1X PBS. Aspirate after the rinse.
3. Apply 5-7 mL of Accutase or trypsin-EDTA solution and incubate in a 37°C incubator for 3-5 minutes.
4. Inspect the flask and ensure the complete detachment of cells by gently tapping the side of the flask with the palm of your hand.
5. Add 5-7 mL of YUMMER1.7 H2B-GFP Expansion Medium to the plate.
6. Gently rotate the flask to mix the cell suspension. Transfer the dissociated cells to a 15 mL conical tube.
7. Centrifuge the tube at 300 x g for 3-5 minutes to pellet the cells.
8. Discard the supernatant, then loosen the cell pellet by tapping the tip of the tube with a finger.
9. Apply 2-5 mL of YUMMER1.7 H2B-GFP Expansion Medium to the conical tube and resuspend the cells thoroughly.

   IMPORTANT: Do not vortex the cells.
10. Count the number of cells using a hemocytometer.
11. Plate the cells to the desired density. Typical split ratio is 1:6.

Cryopreservation of Cells

YUMMER1.7 H2B-GFP Mouse Melanoma Cell Line may be frozen in the expansion medium plus 10% DMSO using a Nalgene slow freeze Mr. Frosty container.

CERTIFIED RENEWABLE ENERGY Green-e.org We Buy 100% Certified Renewable Energy

FOR RESEARCH USE ONLY. Not for use in diagnostic procedures. Not for human or animal consumption. Purchase of this Product does not include any right to resell or transfer, either as a stand-alone product or as a component of another product. Any use of this Product for purposes other than research is strictly prohibited.
EMD Millipore®, the M mark, Upstate®, Chemicon®, Linco® and all other registered trademarks, unless specifically identified above in the text as belonging to a third party, are owned by Merck KGaA, Darmstadt, Germany. Copyright ©2008-2019 Merck KGaA, Darmstadt, Germany. All rights reserved.

ACADEMIC USE AGREEMENT
(subject to local law)

THIS PRODUCT MAY ONLY BE USED BY INDIVIDUALS EMPLOYED BY AN ACADEMIC INSTITUTION AND IS INTENDED SOLELY TO BE USED FOR ACADEMIC RESEARCH, WHICH IS FURTHER DEFINED BELOW. BY OPENING THIS PRODUCT, YOU ("PURCHASER") HEREBY REPRESENT THAT YOU HAVE THE RIGHT AND AUTHORITY TO LEGALLY BIND YOURSELF AND/OR YOUR EMPLOYER INSTITUTION, AS APPLICABLE, AND CONSENT TO BE LEGALLY BOUND BY THE TERMS OF THIS ACADEMIC USE AGREEMENT. IF YOU DO NOT AGREE TO COMPLY WITH THESE TERMS, YOU MAY NOT OPEN OR USE THE PRODUCT AND YOU MUST CALL MILLIPORESIGMA ("SELLER") CUSTOMER SERVICE (1-800-645-5476) TO ARRANGE TO RETURN THE PRODUCT FOR A REFUND.

"Product" means YUMMER1.7 H2B-GFP Mouse Melanoma Cell Line (SCC245)

"Academic Research" means any internal *in vitro* research use by individuals employed by an academic institution. Academic Research specifically excludes the following uses of whatever kind or nature:

- Re-engineering or copying the Product
- Making derivatives, modifications, or functional equivalents of the Product
- Obtaining patents or other intellectual property rights claiming use of the Product
- Using the Product in the development, testing, or manufacture of a Commercial Product
- Using the Product as a component of a Commercial Product
- Reselling or licensing the Product
- Using the Product in clinical or therapeutic applications including producing materials for clinical trials
- Administering the Product to humans
- Using the Product in collaboration with a commercial or non-academic entity

"Commercial Product" means any product intended for: (i) current or future sale; (ii) use in a fee-for-service; or (iii) any diagnostic, clinical, or therapeutic use.

Access to the Product is limited solely to those officers, employees, and students of PURCHASER's academic institution who need access to the Product to perform Academic Research. PURCHASER shall comply with all applicable laws in its use and handling of the Product and shall keep it under reasonably safe and secure conditions to prevent unauthorized use or access.

These use restrictions will remain in effect for as long as PURCHASER possesses the Product.

COMMERCIAL OR NON-ACADEMIC ENTITIES INTERESTED IN PURCHASING OR USING THE PRODUCT MUST CONTACT licensing@emdmillipore.com AND AGREE TO SEPARATE TERMS OF USE PRIOR TO USE OR PURCHASE.

GMO
This product contains genetically modified organisms.
Este producto contiene organismos genéticamente modificados.
Questo prodotto contiene degli organismi geneticamente modificati.
Dieses Produkt enthält genetisch modifizierte Organismen.
Ce produit contient des organismes génétiquement modifiés.
Dit product bevat genetisch gewijzigde organismen.
Tämä tuote sisältää geneettisesti muutettuja organismeja.
Denna produkt innehåller genetiskt ändrade organismer.

We Buy 100% Certified Renewable Energy

FOR RESEARCH USE ONLY. Not for use in diagnostic procedures. Not for human or animal consumption. Purchase of this Product does not include any right to resell or transfer, either as a stand-alone product or as a component of another product. Any use of this Product for purposes other than research is strictly prohibited.
EMD Millipore®, the M mark, Upstate®, Chemicon®, Linco® and all other registered trademarks, unless specifically identified above in the text as belonging to a third party, are owned by Merck KGaA, Darmstadt, Germany. Copyright ©2008-2019 Merck KGaA, Darmstadt, Germany. All rights reserved.