Product sheet

HK EGFP-LaminB1/H2B-mCherry Cells | 300919

General information

Description	The HK EGFP-LaminB1/H2B-mCherry cell line is an in vitro model designed for real-time visualization of chromatin dynamics and nuclear architecture in living cells. This cell line expresses two fluorescent protein fusions: EGFP (enhanced green fluorescent protein) fused with Lamin B1, and mCherry (a red fluorescent protein) fused with histone H2B. The fusion of EGFP with Lamin B1 allows for the observation of the nuclear envelope and nuclear lamina, structures critical for maintaining the integrity and functionality of the nucleus. Lamin proteins are type V intermediate filament proteins that form a meshwork underlying the inner nuclear membrane, playing key roles in nuclear stability, chromatin organization, and gene regulation. On the other hand, the mCherry-tagged histone H2B enables the visualization of chromatin within the nucleus. Histones are fundamental components of the nucleosome, involved in the organization of DNA into chromatin, making them crucial for DNA replication, repair, and transcription. The mCherry tag on H2B provides a vivid red fluorescence that contrasts with the green fluorescence of EGFP, allowing for simultaneous dual-imaging of the nuclear structure and chromatin in live-cell experiments. This cell line is commonly used in studies focusing on nuclear mechanics, mitosis, and genome stability, providing a dynamic view of cellular processes that are otherwise difficult to observe in real time.
Organism	Human
Tissue	Cervix
Disease	Carcinoma
Synonyms	HeLa Kyoto EGFP-LaminB1 and H2B-mCherry

Characteristics

Age	30 years
Gender	Female
Ethnicity	African American
Morphology	Epithelial-like cells with mosaic stone shape
Growth properties	Monolayer, adherent

Identifiers / Biosafety / Citation

Citation	HK EGFP-LaminB1/H2B-mCherry (Cytion catalog number 300919)

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Biosafety level	1
Depositor	Dr. J. Ellenberg, EMBL Heidelberg

Expression / Mutation

Protein expression	EGFP-LaminB1/H2B-mCherry
Products	Histone H2B

Handling

Culture Medium	DMEM, w: 4.5 g/L Glucose, w: 4 mM L-Glutamine, w: 1.5 g/L NaHCO3, w: 1.0 mM Sodium pyruvate (Cytion article number 820300a)
Medium supplements	Supplement the medium with 10% FBS
Passaging solution	Accutase
Subculturing	Remove the old medium from the adherent cells and wash them with PBS that lacks calcium and magnesium. For T25 flasks, use 3-5 ml of PBS, and for T75 flasks, use 5-10 ml. Then, cover the cells completely with Accutase, using 1-2 ml for T25 flasks and 2.5 ml for T75 flasks. Let the cells incubate at room temperature for 8-10 minutes to detach them. After incubation, gently mix the cells with 10 ml of medium to resuspend them, then centrifuge at 300xg for 3 minutes. Discard the supernatant, resuspend the cells in fresh medium, and transfer them into new flasks that already contain fresh medium.
Split ratio	A ratio of 1:3 is recommended
Seeding density	1 x 10^4 cells/cm^2
Fluid renewal	2 to 3 times per week
Freezing recovery	After thawing, plate the cells at 5 x 10^4 cells/cm^2 and allow the cells to recover from the freezing process and to adhere for at least 24 hours.
Freeze medium	CM-1 (Cytion catalog number 800100) or CM-ACF (Cytion catalog number 806100)

Handling of cryopreserved cultures

1. Confirm that the vial remains deeply frozen upon delivery, as cells are shipped on dry ice to maintain optimal temperatures during transit.
2. Upon receipt, either store the cryovial immediately at temperatures below -150°C to ensure the preservation of cellular integrity, or proceed to step 3 if immediate culturing is required.
3. For immediate culturing, swiftly thaw the vial by immersing it in a 37°C water bath with clean water and an antimicrobial agent, agitating gently for 40-60 seconds until a small ice clump remains.
4. Perform all subsequent steps under sterile conditions in a flow hood, disinfecting the cryovial with 70% ethanol before opening.
5. Carefully open the disinfected vial and transfer the cell suspension into a 15 ml centrifuge tube containing 8 ml of room-temperature culture medium, mixing gently.
6. Centrifuge the mixture at 300 x g for 3 minutes to separate the cells and carefully discard the supernatant containing residual freezing medium. Optionally, skip centrifugation but remove any remaining freezing medium after 24 hours.
7. Gently resuspend the cell pellet in 10 ml of fresh culture medium. For adherent cells, divide the suspension between two T25 culture flasks; for suspension cultures, transfer all the medium into one T25 flask to promote effective cell interaction and growth.
8. Adhere to established subculture protocols for continued growth and maintenance of the cell line, ensuring reliable experimental outcomes.

Quality control / Genetic profile / HLA

Sterility

Mycoplasma contamination is excluded using both PCR-based assays and luminescence-based mycoplasma detection methods.

To ensure there is no bacterial, fungal, or yeast contamination, cell cultures are subjected to daily visual inspections.