Product sheet

HK EGFP-H2B growing culture | 330673

General information

Description	Unlock the mysteries of chromosomal dynamics with the revolutionary HeLa Kyoto EGFP-H2B cells. Designed as a powerful tool for imaging and analyzing chromosome behaviour, this clonal stable cell line offers invaluable insights into essential nuclear processes, such as transcription, meiosis, mitosis, and apoptosis. At the heart of this cutting-edge cell line lies chromatin, the intricate higher-order structure formed by DNA, proteins, and RNA within the nucleus of eukaryotic cells. Chromatin structure plays a pivotal role in numerous biological phenomena, and the nucleosome, composed of four core histone proteins (H2A, H2B, H3, and H4), is its fundamental building block. HeLa cells expressing green fluorescent protein fused with histone H2B (H2B-GFP) have revolutionized the field of live-cell imaging, enabling researchers to visualize the dynamic architecture of chromosomes during various cellular processes. Unleash the power of this remarkable cellular model to unravel the secrets hidden within chromosomal dynamics. This exceptional cell line has been extensively employed in studying normal mitosis. By monitoring the behaviour of histone H2B-GFP, researchers have gained unprecedented insights into the clustering patterns of double minute chromosomes (DMs) in cancer cells during mitosis. This distinct clustering behaviour contributes to the asymmetric distribution of DMs to daughter cells, shedding light on the complex nature of cancer cell division. Furthermore, the HeLa Kyoto EGFP-H2B cells provide a unique platform for continuous analysis of chromosomal degradation during apoptosis. Researchers can now visualize and track the degradation process, enhancing our understanding of this critical cellular event. I am generating this clonal stable cell line involved transfection of a circular plasmid followed by meticulous drug resistance selection. Rest assured, this process ensures the utmost reliability and reproducibility in your experiments. With the HeLa Kyoto EGFP-H2B cells, researchers gain access to a human cell model derived from cervical tissue affected by the carcinoma. This biologically relevant context enables the investigation of critical molecular mechanisms underlying cancer development and progression, bolstering our ability to combat this formidable disease.
Organism	Human
Tissue	Cervix
Disease	Carcinoma
Synonyms	HeLa Kyoto H2B-EGFP, HeLa Kyoto H2B EGFP, HeLa-H2B-GFP

Characteristics

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

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Identifiers / Biosafety / Citation

Citation	HK EGFP-H2B (Cytion catalog number 300673)
Biosafety level	1
Depositor	Dr. J. Ellenberg, EMBL Heidelberg

Expression / Mutation

Protein expression	EGFP-H2B: Location/Gene: 1..589 / Pcmv, 613..1329 / EGFP, 1387..1764 / H2B, 3001..3795 / KanR/NeoR
Products	CMV Promotor, Histone H2B, Neomycin, Phosphotransferase

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 medium and rinse the adherent cells using PBS without calcium and magnesium (3-5 ml PBS for T25, 5-10ml for T75 cell culture flasks). Add Accutase (1-2ml per T25, 2.5ml per T75 cell culture flask), the cell sheet must be covered completely. Incubate at ambient temperature for 8-10 minutes. Carefully resuspend the cells with medium (10 ml), centrifuge for 3 min at 300xg, resuspend cells in fresh medium and dispense into new flasks which contain fresh medium.
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)

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Handling of cryopreserved cultures	HK EGFP-H2B cells are shipped in a deep-frozen state on dry ice. Upon receipt, confirm that the vial remains frozen. For storage, place the cryovial immediately at temperatures below -150 degrees. If you plan to culture the cells immediately, swiftly thaw the vial by shaking it in a 37 degrees water bath with clean water and an antimicrobial agent for 40-60 seconds. Remove the vial once a small ice clump persists, ensuring it remains cold. Proceed with all subsequent steps under aseptic conditions. In a sterile flow hood, disinfect the cryovial with 70% ethanol. Then, gently open the vial and transfer the cell suspension into a 15 ml centrifuge tube pre-filled with 8 ml of room temperature culture medium. Gently mix the cells. For cell separation, centrifuge at 300 x g for 3 minutes and dispose of the supernatant. Skipping centrifugation is optional, although any residual freezing medium should be removed after 24 hours. Resuspend the pellet gently in 10 ml of fresh culture medium and divide between two T25 culture flasks. Follow the subculture protocol for subsequent steps.
Handling of proliferating cultures	One or two cell culture flasks come filled with cell culture medium. Collect the entire medium in a 50 ml centrifuge tube. Spin down the collected medium at 300 x g for 3 minutes to collect the cells which may have detached during transit. If a cell pellet is visible, resuspend the cells in 5 ml of cell culture medium and transfer to a T25 cell culture flask. Carefully add 5 ml of cell culture medium to each T25 cell culture flask. Examine cell morphology and confluency using a microscope. Finally, incubate the flasks at 37 degrees Celsius for at least 24 hours.

Quality control / Genetic profile / HLA

Sterility	Mycoplasma contamination is rigorously 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.
HLA alleles	**A***: 68:02:01 **B***: 15:03:01 **C***: 12:03:01 **DRB1***: 01:02:01 **DQA1***: 01:01:02 **DQB1***: 05:01:01 **DPB1***: 01:01:01 **E**: 01:03:02