Product sheet

HK-2xZFN-mEGFP-Nup107 Cells | 300676

General information

Description	The HK-2xZFN-mEGFP-Nup107 cell line is a genetically engineered variant of the Hela Kyoto cell line, derived from human cervical cancer cells. This cell line has been modified using Zinc Finger Nuclease (ZFN) technology to integrate monomeric Enhanced Green Fluorescent Protein (mEGFP) into the Nup107 gene, a crucial component of the nuclear pore complex (NPC). Nup107 plays a key role in nucleocytoplasmic transport, essential for cellular homeostasis and gene regulation. The mEGFP integration enables visualization and tracking of Nup107, facilitating studies on the NPC's dynamics and functions. This fluorescent tagging helps understand Nup107's spatial and temporal distribution and its interactions with other nucleoporins and transport factors. The HK-2xZFN-mEGFP-Nup107 cell line is invaluable for researching cellular transport mechanisms and disease pathophysiology. This cell line provides a robust model for studying the NPC's intricate workings and its health and disease implications, combining the genetic stability and human origin of Hela Kyoto cells with advanced genetic engineering.
Organism	Human
Tissue	Endocervix
Disease	Adenocarcinoma

Characteristics

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

Regulatory Data

Citation	HK-2xZFN-mEGFP-Nup107 (Cytion catalog number 300676)
Biosafety level	1

HK-2xZFN-mEGFP-Nup107 Cells | 300676

NCBI_TaxID	9606
CellosaurusAccession	CVCL_VL12
Depositor	The Ellenberg Lab (EMBL)
GMO Status	GMO-S1: This HeLa Kyoto line contains a ZFN-integrated mEGFP fusion at the Nup107 locus enabling nuclear pore complex imaging. This classification applies only within Germany and may differ elsewhere.

Biomolecular Data

Products	EGFP (Enhanced Green Fluorescent Protein) Nup107

Handling

Culture Medium	DMEM, w: 4.5 g/L Glucose, w: 4 mM L-Glutamine, w: 3.7 g/L NaHCO3, w: 1.0 mM Sodium pyruvate (Cytion article number 820300a)
Supplements	Supplement the medium with 10% FBS
Dissociation Reagent	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.
Fluid renewal	2 to 3 times per week
Freeze medium	As a cryopreservation medium, use complete growth medium (including FBS) + 10% DMSO for adequate post-thaw viability, or CM-1 (Cytion catalog number 800100), which includes optimized osmoprotectants and metabolic stabilizers to enhance recovery and reduce cryo-induced stress.

HK-2xZFN-mEGFP-Nup107 Cells | 300676

Thawing and Culturing Cells	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. 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.
Incubation Atmosphere	37°C, 5% CO_2, humidified atmosphere.
Shipping Conditions	Cryopreserved cell lines are shipped on dry ice in validated, insulated packaging with sufficient refrigerant to maintain approximately −78 °C throughout transit. On receipt, inspect the container immediately and transfer vials without delay to appropriate storage.
Storage Conditions	For long-term preservation, place vials in vapor-phase liquid nitrogen at about −150 to −196 °C. Storage at −80 °C is acceptable only as a short interim step before transfer to liquid nitrogen.

Quality control / Genetic profile / HLA

HK-2xZFN-mEGFP-Nup107 Cells | 300676

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.