Product sheet

HK EGFP-Cap-D2 Cells | 300675

Description	The HK EGFP-Cap-D2 cell line is an engineered variant of Hela Kyoto cells, specifically designed for advanced research in cellular biology and genetic engineering. This cell line expresses enhanced green fluorescent protein (EGFP) fused to the C-terminus of the D2 dopamine receptor, enabling the visualization of receptor dynamics and distribution in real-time under fluorescence microscopy. This feature is particularly beneficial for studying receptor trafficking, signaling pathways, and the effects of pharmacological agents on D2 receptor behavior. These cells are used extensively in neurological research to understand better the mechanisms underlying dopamine signaling, which is crucial in many neurological disorders such as Parkinson's disease, schizophrenia, and depression. The fusion of EGFP to the D2 receptor does not affect the receptor's normal function or its cellular localization, making HK EGFP-Cap-D2 a valuable tool for physiological and pathological studies. The stable expression of EGFP also allows for longitudinal studies in live cells, providing insights into the dynamic processes of receptor regulation and interaction with other cellular components.
Organism	Human
Tissue	Cervix
Disease	Carcinoma
Synonyms	HeLa Kyoto EGFP CAP-D2, HeLa Kyoto Cap-D2 EGFP

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

Citation	HK EGFP-Cap-D2 (Cytion catalog number 300675)
Biosafety level	1

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NCBI_TaxID	9606
CellosaurusAccession	CVCL_1D60
Depositor	The Ellenberg Lab (EMBL)
GMO Status	GMO-S1: This HeLa Kyoto line contains an EGFP-Cap-D2 construct enabling live-cell studies of condensin-II dynamics. This classification applies only within Germany and may differ elsewhere.

Protein expression	EGFP-CAP-D2, About 80% of cells show expression: Location/Gene: 1..589 / Pcmv, 619..645 / Flag-tag, 646..660, 1375..1389/null, 661..1374 / EGFP, 1435..5638/CAP-D2, 6886..7680/KanR/NeoR
Products	CMV Promotor, FLAG octapeptide, Glycin linker, Neomycin, Phosphotransferase

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.
Seeding density	1 x 10^4 cells/cm^2
Fluid renewal	2 to 3 times per week
Post-Thaw 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.

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Freeze medium	As a cryopreservation medium, we 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.
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.

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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.