Product sheet

NRK-IBB-DiHcRed1 Cells | 500671

General information

Description	NRK-IBB-DiHcRed1 is a modified cell line derived from normal rat kidney (NRK) cells, engineered to express the red fluorescent protein DiHcRed1. This modification allows researchers to track and visualize cellular processes in real-time using fluorescence microscopy. The stable red fluorescence is ideal for live-cell imaging, facilitating studies on cell migration, division, and morphology. The cell line retains the typical characteristics of NRK cells, including epithelial-like morphology and normal proliferation, making it a reliable model for studying mammalian cell behavior. The red fluorescence also allows for multiplexing with other markers, enhancing its use in cell biology, cancer research, and drug screening.
Organism	Rat
Tissue	Kidney
Synonyms	NRK IBB-DiHcRed1

Characteristics

Breed/Subspecies	OsborneMendel
Morphology	Fibroblast-like cells with fusiform shape
Growth properties	Monolayer, adherent

Regulatory Data

Citation	NRK-IBB-DiHcRed1 (Cytion catalog number 500671)
Biosafety level	1
NCBI_TaxID	10116
CellosaurusAccession	CVCL_AV95
Depositor	The Ellenberg Lab (EMBL)

Biomolecular Data

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Receptors expressed	Epidermal growth factor (EGF), multiplication stimulating activity (MSA)
Protein expression	IBB-DiHcRed1: Location/gene: 1..589 / Pcmv, 656..916 / IBB, 932..1615 , 1670..2356 / HcRed1, 3587..4381 / KanR/NeoR
Products	CMV Promotor IBB (Ribbeck & Gorlich 2002), Neomycin, Phosphotransferase, Epidermal growth factor, multiplication stimulating activity

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, 0.5 mg/mL G418
Dissociation Reagent	Accutase
Subculturing	Discard the old medium and wash the cells with PBS. Add a freshly prepared 0.025% trypsin/0.02% EDTA solution heated to 37 degrees Celsius and wait until the cells detach, which usually takes about 5 minutes. Neutralize the trypsin by adding fresh medium, then transfer the cell mixture to a tube and centrifuge. After centrifugation, remove the supernatant, resuspend the cell pellet in fresh culture medium, and transfer the suspension to new flasks. Incorporate G418 into the culture medium to achieve a final concentration of 0.5 mg/ml
Seeding density	2 to 4 x 10^4 cells/cm^2
Fluid renewal	2 to 3 times per week
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.

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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 & Molecular Analysis

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.