2V6.11

305147

GENERAL INFORMATION

Description

2v6.11 cells were derived from the human embryonic kidney line HEK-293 in 2001. The 2V6.11 cell line is a valuable resource for studying the adenoviral E4 oncoprotein, particularly the E4 34K protein known to be involved in cellular genome maintenance and repair. 2V6.11 cells, obtained through transfection with the plasmid pVgRxR followed by pEKORF6, result in the inducible expression of the E4 34K protein, which is linked to the inhibition of cellular mechanisms that repair double strand-breaks in DNA. The 2V6.11 cell line demonstrated that the adenoviral proteins E4 34k and E1b 55k inhibit chromosomal DNA repair by disrupting non-homologous end joining (NHEJ) and destabilizing DNA repair proteins, extending their effect from extrachromosomal to cellular genomic DNA.
The 2V6.11 inducible cell line, with their adherent epithelial morphology, are ideal for investigating the behavior and characteristics of kidney-derived epithelial cells, including their response to infections by human adenovirus 40. This versatile cell line, which can be detected by western blot, enables researchers to delve into the molecular mechanisms by which the adenovirus E4 oncoprotein inhibits repair processes, thus contributing to our understanding of adenovirus pathology and the potential for developing new therapeutic strategies.

Tissue	Fetal Kidney
Metastatic site	Not applicable (fetal kidney; non-tumorigenic HEK293 derivative)

Applications

Adenovirus E4 oncoprotein studies; DNA double-strand break repair research; NHEJ pathway studies; inducible E4 34k expression systems; virology; adenovirus pathology

CLASSIFICATION

Organism	Human
Sex	Female
Growth properties	Adherent
GMO status	GMO-S1

GMO status details

GMO-S1: This HEK293-derived line contains an adenovirus 5 E4-34k expression construct controlled by an ecdysone-inducible promoter, enabling regulated E4 protein production. This classification applies only within Germany and may differ elsewhere.

Biosafety level	2

CHARACTERISTICS

Morphology	Epithelial-like
Cell type	Epithelial cells

IDENTIFIERS

Citation

2V6.11 (Cytion catalog number 305147)

NCBI TaxID	9606
Cellosaurus	CVCL_6355

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HANDLING AND CULTURE

Culture medium

EMEM (MEM Eagle), w: 2 mM L-Glutamine, w: 2.2 g/L NaHCO3, w: EBSS (Cytion article number 820100a)

Incubation atmosphere	37°C, 5% CO_2, humidified atmosphere.

Supplements

Supplement the medium with 10% FBS and 1% NEAA

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.

Split ratio	1 to 5
Seeding density	1 to 3 × 10^4 cells/cm^2
Fluid renewal	2 to 3 times per week

Thawing and culturing

Confirm that the vial remains deeply frozen upon delivery, as cells are shipped on dry ice to maintain optimal temperatures during transit.
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.
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.
Perform all subsequent steps under sterile conditions in a flow hood, disinfecting the cryovial with 70% ethanol before opening.
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.
Centrifuge the mixture at 300 x g for 3 minutes to separate the cells and carefully discard the supernatant containing residual freezing medium.
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.
Adhere to established subculture protocols for continued growth and maintenance of the cell line, ensuring reliable experimental outcomes.

QUALITY CONTROL AND CRYOPRESERVATION

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.

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.

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.

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.

DONOR

Donor age	Fetus

LEGAL AND SAFETY

Safety precautions

When planning to store a cryovial in liquid nitrogen for future thawing, it is mandatory to adhere to stringent safety measures. Appropriate protective gloves and clothing are essential, and the use of a face mask or safety goggles is required during the transfer of frozen samples to or from the liquid nitrogen tank. This is to mitigate the risk of injury from potential cryovial explosions upon removal, which can result in the projection of sharp fragments.

Warranty

At Cytion, we stand behind the quality and viability of our products.
We guarantee that our cells will be viable at the start of culture for
60 days after shipment from our facilities.
We assure that all materials conform to the specifications described in the
Certificate of Analysis and/or Product Sheet.
For full details, please refer to our
Warranty Statement.

Material Transfer Agreement required	Yes