Product sheet

ECV-304 Cells | 300452

General information

Description	The ECV-304 cell line is a spontaneously transformed cell line derived from human umbilical vein endothelial cells (HUVEC). Originally characterized and utilized as a model of endothelial cell biology, further genomic analysis revealed that ECV-304 cells were contaminated and are genetically identical to the T24 bladder carcinoma cell line. This revelation has significant implications for the interpretation of research data, particularly studies conducted under the assumption that ECV-304 was a true endothelial cell model. Despite its endothelial mischaracterization, ECV-304 has been widely used in studies related to tumorigenesis, cytotoxicity, and drug screening, primarily due to its robust growth characteristics and the ease with which it can be cultured. The cells exhibit epithelial morphology and possess the ability to grow in a monolayer, making them a suitable in vitro model for studying various aspects of cancer biology, including cell proliferation, migration, and the cellular response to therapeutic agents. However, caution must be exercised in the interpretation of past studies where ECV-304 was used as a model of endothelial cells. Given the genetic identification with the T24 cell line, researchers should consider ECV-304 as a bladder carcinoma model rather than an endothelial cell line. This understanding is crucial for the design and interpretation of experiments aimed at investigating cellular behaviors that are relevant to cancer research rather than endothelial cell function.
Organism	Human
Tissue	Bladder
Disease	Carcinoma
Synonyms	ECV 304, ECV304, ECV, E304, T24(ECV304)

Characteristics

Age	82 years
Gender	Female
Morphology	Epithelial-like
Growth properties	Adherent

Identifiers / Biosafety / Citation

Citation	ECV-304 (Cytion catalog number 300452)

Biosafety level	1

Expression / Mutation

Handling

Culture Medium	Medium 199, w: 2.7 mM stable Glutamine, w: 2.2 g/L NaHCO3, w: EBSS (Cytion article number 820101a)
Medium supplements	Supplement the medium with 10% FBS
Passaging solution	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.
Freeze medium	CM-1 (Cytion catalog number 800100) or CM-ACF (Cytion catalog number 806100)

Handling of cryopreserved cultures

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. Optionally, skip centrifugation but remove any remaining freezing medium after 24 hours.
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.

Quality control / Genetic profile / HLA

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.

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STR profile

Amelogenin: x,x
CSF1PO: 12
D13S317: 12
D16S539: 9
D5S818: 10
D7S820: 10,11
TH01: 6
TPOX: 8,11
vWA: 17
D3S1358: 16
D21S11: 29
D18S51: 16,18
D8S1179: 14
FGA: 17,22
D2S1338: 20,23
D12S391: 18
D19S433: 13,14