VK2/E6E7

305653

GENERAL INFORMATION

Description

The VK2/E6E7 cell line is a human vaginal epithelial cell line that was immortalized using the E6 and E7 oncogenes from human papillomavirus (HPV) type 16. This immortalization method extends the replicative lifespan of the cells while preserving many of the functional and morphological characteristics of normal vaginal epithelial cells. VK2/E6E7 cells are part of a panel of HPV16/E6E7-immortalized cell lines that also include ectocervical (Ect1/E6E7) and endocervical (End1/E6E7) epithelial cells, providing a comprehensive in vitro model for studying the biology of the female lower genital tract.
VK2/E6E7 cells exhibit a keratinocyte-like morphology and form loosely organized colonies in culture, distinct from the more stratified appearance of ectocervical cells. They express several epithelial differentiation markers, including cytokeratins CK8, CK18, CK19, and involucrin. Interestingly, they also express CK10 and CK13, markers associated with suprabasal differentiation in stratified squamous epithelium, suggesting that they retain key characteristics of normal vaginal epithelial cells. Additionally, VK2/E6E7 cells weakly express the secretory component (SC) of the polymeric immunoglobulin receptor, which is typically absent in vaginal tissue but is upregulated in this cell line. These features make VK2/E6E7 a valuable tool for studying vaginal epithelial function, host-pathogen interactions, and mucosal immunology, as well as for testing pharmacological agents intended for intravaginal application.

Tissue	Vagina, Mucosa
Disease	Endometriosis

Applications

3D cell culture

Synonyms

- Vk2/E6E7
- VK-2/E6E7
- VK2 (E6/E7)
- VK2

CLASSIFICATION

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

GMO status details

GMO-S1: This human vaginal epithelial cell line (VK2/E6E7) contains a plasmid construct encoding HPV16 E6/E7 sequences introduced via transfection, supporting immortalization of vaginal epithelium-derived cells. The insert is stably integrated. This classification applies only within Germany and may differ elsewhere.

Biosafety level	2

CHARACTERISTICS

Morphology	Epithelial
Cell type	Epithelial

Cytion GmbH
Nikola-Tesla-Str. 3
69124 Heidelberg
Tel: +49 (0)6221 405780
info@cytion.com
cytion.com

Registered office Heidelberg
VAT ID: DE283292917
Local court Mannheim - HRB 714394
CEO / Geschäftsführer: Jonathan Steubing

Banking information
Sparkasse Heidelberg
IBAN: DE35 6725 0020 0009 2076 86
BIC: SOLADES1HDB

Doubling time	24 hours

IDENTIFIERS

Citation

VK2/E6E7 (Cytion catalog number 305653)

NCBI TaxID	9606
Cellosaurus	CVCL_6471

EXPRESSION AND SUSCEPTIBILITY

Protein expression

HPV-16 E6/E7

Antigen expression

Cytokeratins 8 (CK8), 10 (CK10), 13 (CK13), 18 (CK18), 19 (CK19); macrophage colony-stimulating factor (M-CSF); transforming growth factor beta1; interleukin 8 (IL-8); prostaglandin E2; secretory leukoproteinase inhibitor; polymeric immunoglobulin receptor.

HANDLING AND CULTURE

Culture medium

DMEM:Ham's F12 (1:1), w: 3.1 g/L Glucose, w: 2.5 mM L-Glutamine, w: 15 mM HEPES, w: 0.5 mM Sodium pyruvate, w: 1.2 g/L NaHCO3 (Cytion article number 820400a)

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

Supplements

Supplement the medium with 10% FBS

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	32 years
Ethnicity	Unspecified

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