Product sheet

HEK293T/17 Cells | 305117

Description	The 293T/17 cell line is an immortalized variant of the HEK293 line, derived from human embryonic kidney cells and extensively utilized in research, particularly in the study and production of retroviral and lentiviral vectors. This cell line has been modified to express the SV40 large T antigen, enhancing its utility in viral vector production. The expression of the SV40 large T antigen is a key feature that allows these cells to replicate plasmids containing the SV40 origin of replication, significantly increasing the yield of plasmid DNA in transient transfection procedures. This feature is particularly beneficial for the production of viral vectors. 293T/17 cells are essential in the production of viral vectors like retroviruses and lentiviruses. They efficiently produce viral particles due to their ability to amplify transfected plasmids and support viral assembly and release. This makes them a vital tool in gene therapy research, where these vectors are used to deliver genetic material into host cells. The cells exhibit high transfection efficiency, crucial for the successful introduction and expression of foreign DNA during vector construction. This high efficiency enables the study of gene function and the generation of recombinant proteins effectively. The robust capabilities of the 293T/17 cell line make it invaluable for both basic scientific research and therapeutic applications. It is widely used in molecular biology and genetic engineering for protein expression, gene function analysis, and the development of novel gene therapies. The cell line's efficiency in producing viral vectors facilitates experiments requiring genetic material delivery, making it a cornerstone in the field of virology. The 293T/17 cell line continues to play a pivotal role in advancing our understanding of gene function and developing therapeutic interventions.
Organism	Human
Tissue	Embryonic kidney
Applications	This cell line is an optimal choice for transfection, high-throughput screening, toxicology, and vaccine development.
Synonyms	HEK293T/17, HEK-293T/17, HEK 293T/17
Age	Fetus
Gender	Female
Morphology	Epithelial
Growth properties	Adherent

Product sheet

HEK293T/17 Cells | 305117

Citation	HEK293T/17 (Cytion catalog number 305117)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_1926
GMO Status	GMO-S1: This HEK293T/17 cell line contains SV40, enhancing plasmid replication and packaging efficiency. The insert is stably present in transformed embryonic kidney cells. This classification applies only within Germany and may differ elsewhere.

Antigen expression	SV40 T antigen
Viruses	SV40 (expresses SV40 T antigen)

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.
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.

HEK293T/17 Cells | 305117

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.

HEK293T/17 Cells | 305117

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.