Product sheet

Cytion293F-X Cells | 305927

Renseignements généraux

Description	Cytion293F-X refers to a suspension-adapted human embryonic kidney cell line equivalent to HEK293F cells, derived from the original HEK293 lineage. These cells originate from human embryonic kidney tissue and have been adapted for growth in serum-free, chemically defined media under suspension culture conditions. This adaptation enables high-density growth in shaker flasks or bioreactors, making them particularly suitable for large-scale protein expression. Like other HEK293 derivatives, 293F-X cells retain the adenoviral E1A/E1B genomic integration that supports robust transgene expression. Cytion293F-X cells are optimized for transient transfection workflows, especially for the production of recombinant proteins, monoclonal antibodies, and viral vectors. They exhibit high transfection efficiency using chemical methods such as polyethyleneimine (PEI) or lipid-based reagents, and are capable of producing substantial protein yields within short timeframes. Their suspension growth and scalability allow for efficient upscaling from small laboratory volumes to industrial bioprocessing systems, while maintaining consistent expression performance. In addition to protein production, Cytion293F-X cells are widely used in virology and gene delivery research, including the generation of adeno-associated virus (AAV) and lentiviral particles. They maintain key characteristics of HEK293-derived systems, including human-like post-translational modification machinery, which is critical for proper protein folding and glycosylation. However, as with other HEK293 variants, genomic heterogeneity and clonal variation may influence expression outcomes, and optimization of culture and transfection parameters is often required for specific applications.
Organism	Human
Tissue	Kidney
Disease	Normal human embryonic kidney (HEK293-derived; suspension-adapted; not tumorigenic in standard use)
Metastatic site	Not applicable (non-tumorigenic HEK293 derivative adapted for suspension culture)
Applications	Recombinant protein and antibody production; transient transfection host; AAV and lentiviral vector manufacturing; suspension bioreactor culture; scalable GMP-compatible expression systems; post-translational modification studies

Caractéristiques

Age	Fetus
Gender	Female
Ethnicity	Not applicable (immortalized embryonic kidney cell line)
Morphology	Epithelial-like

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Cell type	Epithelial cells (embryonic kidney)
Growth properties	Suspension

Données réglementaires

Citation	Cytion293F-X (Cytion catalog number 305927)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	Not assigned (Cytion293F-X is a proprietary suspension-adapted HEK293F derivative; parental HEK293 CVCL_0045)
GMO Status	GMO-S1: This Cytion293F-X cell line contains SV40, enabling high transfection efficiency and robust growth in suspension culture. The modification is stably present in embryonic kidney cells. This classification applies only within Germany and may differ elsewhere.

Données biomoléculaires

Receptors expressed	Vitronectin
Protein expression	CEA negative, p53 positive
Tumorigenic	In nude mice
Viruses	Transformed with adenovirus 5 DNA adenovirus 5 DNA

Manipulation

Culture Medium	Expi293 Expression Medium
Dissociation Reagent	None

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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.
Seeding density	0.3 to 1 x 10^6 cells/ml
Fluid renewal	2 times per week
Post-Thaw Recovery	After thawing, plate the cells at 5 x 10^4 cells/cm^2 and allow the cells to recover from the freezing process and to adhere for at least 24 hours.
Freeze medium	As a cryopreservation medium, we use complete growth medium + 10% DMSO for adequate post-thaw viability.
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 200 x g for 5 minutes, carefully discard the supernatant containing freezing medium. 7. Follow the procedure described under Post-Thaw Recovery
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.

Contrôle de la qualité et analyse moléculaire