Product sheet

IEC-6 Cells | 302149

General information

Description	IEC-6 is an epithelial cell line derived from the rat small intestine, specifically the crypt cells. These cells are non-tumorigenic and have been instrumental in studies related to intestinal epithelial function, differentiation, and the mechanisms underlying intestinal diseases. IEC-6 cells retain the characteristics of normal intestinal epithelial cells, including the ability to differentiate and maintain contact inhibition. This cell line is particularly valuable for research focused on gastrointestinal biology, including the study of the effects of growth factors, cytokines, and various pharmacological agents on the intestinal epithelium. IEC-6 cells are widely used in investigations of the cellular processes involved in intestinal regeneration and repair, making them essential in the study of gastrointestinal pathologies such as inflammatory bowel disease (IBD), and cancer. The cells are sensitive to growth inhibition by transforming growth factor-beta (TGF-β), which is commonly used to study the signaling pathways involved in epithelial cell proliferation and differentiation. Additionally, IEC-6 cells are utilized in research related to nutrient absorption and barrier function, helping to elucidate the role of the intestinal epithelium in maintaining gut homeostasis.
Organism	Rat
Tissue	Small intestine
Applications	Transfection. Gene expression studies
Synonyms	IEC 6, IEC6, Intestinal Epithelioid Cell line No. 6

Characteristics

Breed/Subspecies	Charles River Sprague Dawley (CD(SD))
Age	18-24 days
Gender	Male
Morphology	Epithelial-like
Cell type	Epithelial cell
Growth properties	Adherent

Regulatory Data

Citation	IEC-6 (Cytion catalog number 302149)

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Biosafety level	1
NCBI_TaxID	10116
CellosaurusAccession	CVCL_0343

Biomolecular Data

Handling

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.
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.

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.

Quality Control & Molecular Analysis

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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.