Product sheet

Eca-109 Cells | 305511

General information

Description	Eca-109 is a human esophageal squamous cell carcinoma (ESCC) cell line that is widely used for cancer research, particularly studies focusing on tumor progression, cell migration, and apoptosis. This cell line provides a representative model for esophageal cancer, which is a significant health concern with a high mortality rate due to aggressive progression and poor prognosis. In research involving Eca-109 cells, several critical pathways have been studied. For instance, the modulation of autophagy has been shown to influence radiosensitivity. Inhibition of autophagy in Eca-109 cells, using agents such as 3-methyladenine (3-MA) or LY294002, has been demonstrated to enhance the cytotoxic effects of ionizing radiation by promoting apoptosis through mitochondrial pathways, including cytochrome c release and caspase activation. Furthermore, studies have highlighted the role of the EGFR/ERK1/2 signaling pathway in promoting migration and invasiveness of these cells, with findings that EGF stimulation increases aquaporin-8 (AQP8) expression, facilitating cell migration. Another significant aspect of Eca-109 research is the exploration of therapeutic targets, such as galectin-3. Overexpression of this protein in Eca-109 cells has been associated with enhanced cell proliferation, migration, and invasion, while concurrently reducing apoptosis, indicating its potential as a molecular target for treatment.
Organism	Human
Tissue	Esophagus
Disease	Squamous cell carcinoma
Synonyms	Eca109, Eca 109, EC-109, EC109

Characteristics

Age	Unspecified
Gender	Female
Ethnicity	Chinese
Morphology	Epithelial-like
Growth properties	Adherent

Regulatory Data

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Citation	Eca-109 (Cytion catalog number 305511)
Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_6898

Biomolecular Data

Handling

Culture Medium	RPMI 1640, w: 2.0 mM stable Glutamine, w: 2.0 g/L NaHCO3 (Cytion article number 820700a)
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.

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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

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.