Product sheet

EBC-1 Cells | 305539

General information

Description	EBC-1 is a human lung squamous cell carcinoma cell line, primarily noted for its relevance in studying mechanisms related to lung cancer, particularly non-small cell lung carcinoma (NSCLC). This cell line is characterized by MET gene amplification, which has been implicated in oncogenic signaling pathways that drive tumor growth and resistance to therapy. The MET receptor tyrosine kinase activation, typically induced by hepatocyte growth factor (HGF), plays a significant role in the proliferation, survival, and metastasis of these cells. Aberrations in MET signaling are pivotal in EBC-1's aggressive tumor profile, making it an essential model for studying targeted therapies aimed at MET inhibition. Research utilizing EBC-1 cells has explored various resistance mechanisms to MET inhibitors, such as crizotinib. The cell line has demonstrated acquired resistance via pathways involving PAI-1 upregulation and epithelial-to-mesenchymal transition (EMT), contributing to therapeutic challenges. Additionally, sodium butyrate has been shown to modulate gene expression in EBC-1 cells, indicating the potential utility of histone deacetylase inhibitors in affecting gene transcription. These findings underscore the importance of EBC-1 in both therapeutic resistance research and the development of novel treatment strategies for MET-amplified lung cancers.
Organism	Human
Tissue	Lung
Disease	Squamous cell carcinoma
Metastatic site	Skin
Synonyms	EBC-1/original, EBC1

Characteristics

Age	69 years
Gender	Male
Ethnicity	Taiwanese
Growth properties	Adherent

Regulatory Data

Citation	EBC-1 (Cytion catalog number 305539)

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Biosafety level	1
NCBI_TaxID	9606
CellosaurusAccession	CVCL_2891

Biomolecular Data

Mutational profile	Mutation: DDR2, p.Thr681Ile (c.2042C>T), heterozygous; Mutation: EGFR, p.Leu858Arg (c.2573T>G), heterozygous; Mutation: TP53, p.Glu171Ter (c.511G>T), homozygous

Handling

Culture Medium	EMEM (MEM Eagle), w: 2 mM L-Glutamine, w: 2.2 g/L NaHCO3, w: EBSS (Cytion article number 820100a)
Supplements	Supplement the medium with 10% FBS and 1% NEAA
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

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.