BEAS-2B

300311

GENERAL INFORMATION

Description

BEAS-2B is an immortalized cell line derived from the bronchial epithelium of a non-cancerous individual. This cell line was established by transforming human bronchial epithelial cells with an adenovirus 12-SV40 hybrid virus, which confers the cells with an extended lifespan while maintaining many of the morphological and functional characteristics typical of primary bronchial epithelial cells. BEAS-2B cells are widely used in respiratory disease research, particularly in studies related to the toxicological and pharmacological effects of inhalable substances, owing to their origin from the airway epithelium.
The cell line exhibits a cobblestone morphology when cultured and retains certain critical features, such as the ability to metabolize xenobiotic compounds, making them highly relevant for studies on drug metabolism and respiratory toxicology. They have also been employed extensively in studies exploring cellular mechanisms of asthma, chronic obstructive pulmonary disease (COPD), and cancer. BEAS-2B cells respond predictably to cytokines, oxidative stress, and other stimuli typical of respiratory tract exposure to environmental agents. This makes them a valuable model for studying inflammation and oxidative stress mechanisms in pulmonary cells.
As a tool in biomedical research, BEAS-2B cells are also frequently used to assess carcinogenic potential of airborne particles, where they serve as a model to understand the changes in airway epithelial cells following exposure to carcinogens. Their genetic makeup and susceptibility to genetic manipulation further enhance their utility in molecular biology experiments aimed at understanding gene expression and signaling pathways involved in lung diseases and cancer development.

Tissue	Lung, Bronchus

Synonyms

- Beas-2B
- BEAS 2B
- BEAS2B
- Beas2B
- Bronchial Epithelium transformed with Ad12-SV40 2B

CLASSIFICATION

Organism	Human
Sex	Male
Growth properties	Adherent
GMO status	GMO-S1

GMO status details

GMO-S1: This human bronchial epithelial cell line (BEAS-2B) contains an Ad12-SV40 hybrid construct introduced by transfection, enabling immortalization without viral particle release. The hybrid adenovirus/SV40 insert is stably integrated. This classification applies only within Germany and may differ elsewhere.

Biosafety level	1

CHARACTERISTICS

Morphology	Epithelial-like

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IDENTIFIERS

Citation

BEAS-2B (Cytion catalog number 300311)

NCBI TaxID	9606
Cellosaurus	CVCL_0168

EXPRESSION AND SUSCEPTIBILITY

Viruses

Ad12-SV40 hybrid virus

Products

Keratins, SV-40 T antigen

HANDLING AND CULTURE

Culture medium

Airway Epithelial Cell Basal Medium (PromoCell GmbH)

Incubation atmosphere	37°C, 5% CO_2, humidified atmosphere.

Supplements

Supplement the medium with Growth Medium Supplement Mix (PromoCell GmbH)

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.

Thawing and culturing

Confirm that the vial remains deeply frozen upon delivery, as cells are shipped on dry ice to maintain optimal temperatures during transit.
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.
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.
Perform all subsequent steps under sterile conditions in a flow hood, disinfecting the cryovial with 70% ethanol before opening.
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.
Centrifuge the mixture at 300 x g for 3 minutes to separate the cells and carefully discard the supernatant containing residual freezing medium.
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.
Adhere to established subculture protocols for continued growth and maintenance of the cell line, ensuring reliable experimental outcomes.

QUALITY CONTROL AND CRYOPRESERVATION

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.

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.

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.

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.

DONOR

Donor age	Age unspecified

LEGAL AND SAFETY

Safety precautions

When planning to store a cryovial in liquid nitrogen for future thawing, it is mandatory to adhere to stringent safety measures. Appropriate protective gloves and clothing are essential, and the use of a face mask or safety goggles is required during the transfer of frozen samples to or from the liquid nitrogen tank. This is to mitigate the risk of injury from potential cryovial explosions upon removal, which can result in the projection of sharp fragments.

Warranty

At Cytion, we stand behind the quality and viability of our products.
We guarantee that our cells will be viable at the start of culture for
60 days after shipment from our facilities.
We assure that all materials conform to the specifications described in the
Certificate of Analysis and/or Product Sheet.
For full details, please refer to our
Warranty Statement.

Material Transfer Agreement required	Yes

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