**Product sheet**

# 16HBE14o- Cells | 305234

## General information

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| **Description** | The 16HBE140 cell line is derived from human bronchial epithelial cells, which are essential for studying the respiratory epithelium. These cells retain several key characteristics of primary bronchial epithelial cells, including the ability to form tight junctions, express characteristic markers, and exhibit typical epithelial morphology. They are widely used in research focusing on respiratory diseases, drug transport, and toxicology studies, providing a reliable in vitro model to understand bronchial epithelial cell behavior under various conditions.<br><br>One of the significant applications of 16HBE140 cells is in the investigation of cystic fibrosis (CF), a genetic disorder affecting the respiratory system. These cells express the cystic fibrosis transmembrane conductance regulator (CFTR) protein, making them a valuable tool for studying CF pathophysiology and for screening potential therapeutic agents. Additionally, 16HBE140 cells are utilized in airway inflammation research, given their response to pro-inflammatory cytokines and pollutants, aiding in the understanding of chronic respiratory conditions such as asthma and chronic obstructive pulmonary disease (COPD). |
| **Organism** | Human |
| **Tissue** | Lung, bronchus |
| **Synonyms** | 16HBE14o-, 16-HBE14o, 16-HBEo, 16HBEo-, 16-HBE, 16HBE |

## Characteristics

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| **Age** | 1 year |
| **Gender** | Male |
| **Cell type** | Epithelial cell of bronchus |
| **Growth properties** | Adherent |

## Regulatory Data

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| **Citation** | 16HBE140- (Cytion catalog number 305234) |
| **Biosafety level** | 1 |
| **NCBI_TaxID** | 9606 |
| **CellosaurusAccession** | CVCL_0112 |

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| **GMO Status** | GMO-S1: This human bronchial epithelial cell line (16HBE14o-) carries a non-replicating pSVori-based construct expressing the SV40 Large T Antigen from Macaca mulatta polyomavirus 1, enabling extended proliferation through interference with cell-cycle control. The insert is stably present in primary-derived human bronchial epithelial cells. This classification applies only within Germany and may differ elsewhere. |

## Biomolecular Data

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| **Viruses** | Transformant: Simian virus 40 (SV40) |

## Handling

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| **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% Horse Serum 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. |

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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.<br>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.<br>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.<br>4. Perform all subsequent steps under sterile conditions in a flow hood, disinfecting the cryovial with 70% ethanol before opening.<br>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.<br>6. Centrifuge the mixture at 300 x g for 3 minutes to separate the cells and carefully discard the supernatant containing residual freezing medium.<br>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.<br>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. |
| **Flask Coating** | LHC basal medium-based coating solution: 0,01 mg/mL Human fibronectin, 0,1 mg/mL Bovine serum albumin (BSA) |
| **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.