

Primary Rat Tracheal Epithelial Cells (TEC)

SKU: CDS10968 | Category: Primary Cells — Rat

Validation & Biomarker Data Guide · Lineage classification: Bronchial/airway epithelial cell

1. Product Overview

Primary Rat Tracheal Epithelial Cells (TEC) is a primary cell product from rat Trachea for physiologically relevant in vitro studies. The product is particularly relevant to Pulmonary cell series and Epithelial cells research. It can support research in cell physiology, signaling, metabolism, toxicology, drug response and cell-based assay development where a primary-cell model is preferred. Culture and passage conditions should follow the product-specific protocol. For research use only.

Primary tissue / source: Trachea | Growth type: Adherent Cells | Tumorigenic status: Normal Cells | Pack size: 1 x 0.5 million cells

2. Typical Applications

- Pulmonary cell series
- Epithelial cells
- Respiratory system

3. Identity & Phenotypic Marker Panel

A representative identity panel for bronchial/airway epithelial cell products is shown below. Actual per-lot Certificates of Analysis should be consulted for verified identity data.

Marker	Expected Result	Range
Pan-cytokeratin	Positive	85–98% positive
ZO-1	Positive	70–95% positive
MUC5AC (goblet subset)	Positive	15–45% positive
Vimentin	Negative / low	≤15% (background)

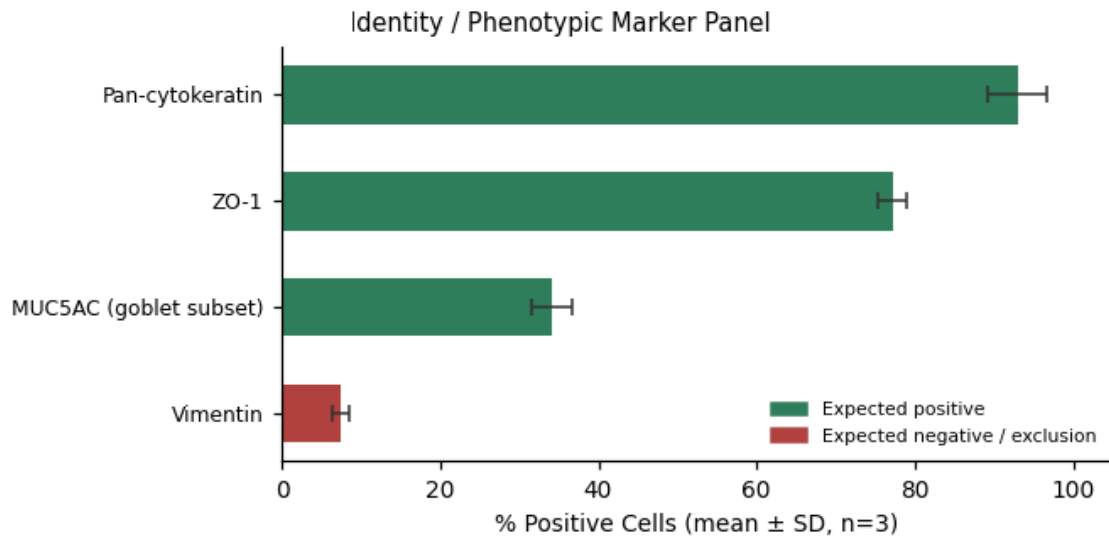


Figure 1. Marker expression profile (mean ± SD, n = 3 replicates).

4. Growth Kinetics & Viability

Growth and viability trends over 120 hours in standard culture conditions.

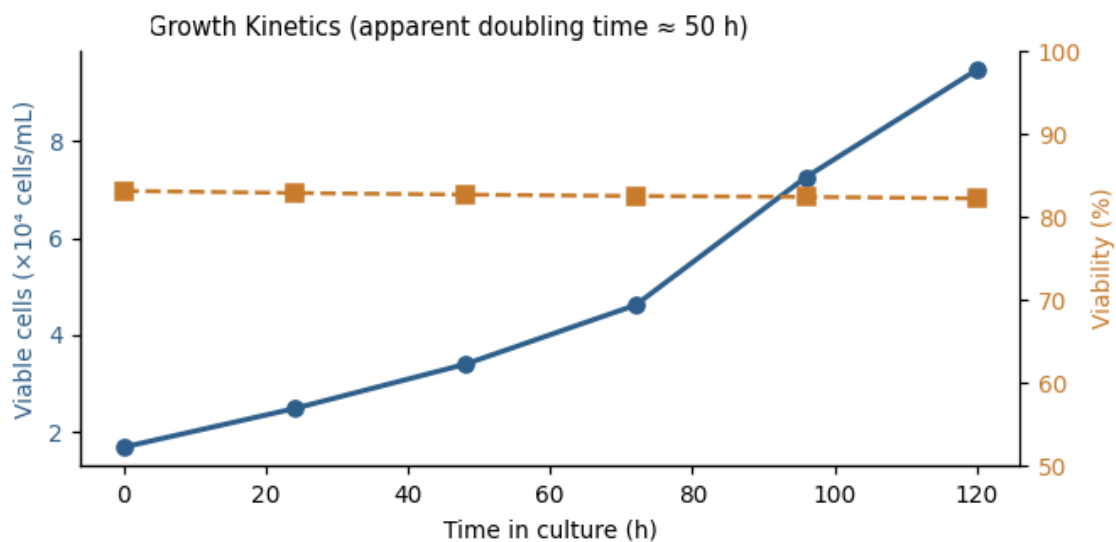


Figure 2. Growth curve (viable cell density, left axis) and viability trend (right axis).

5. Functional Validation Assay

Air-liquid interface (ALI) ciliation & barrier assay: ALI culture assessed for ciliary beat frequency and TEER to confirm mucociliary differentiation and barrier function.

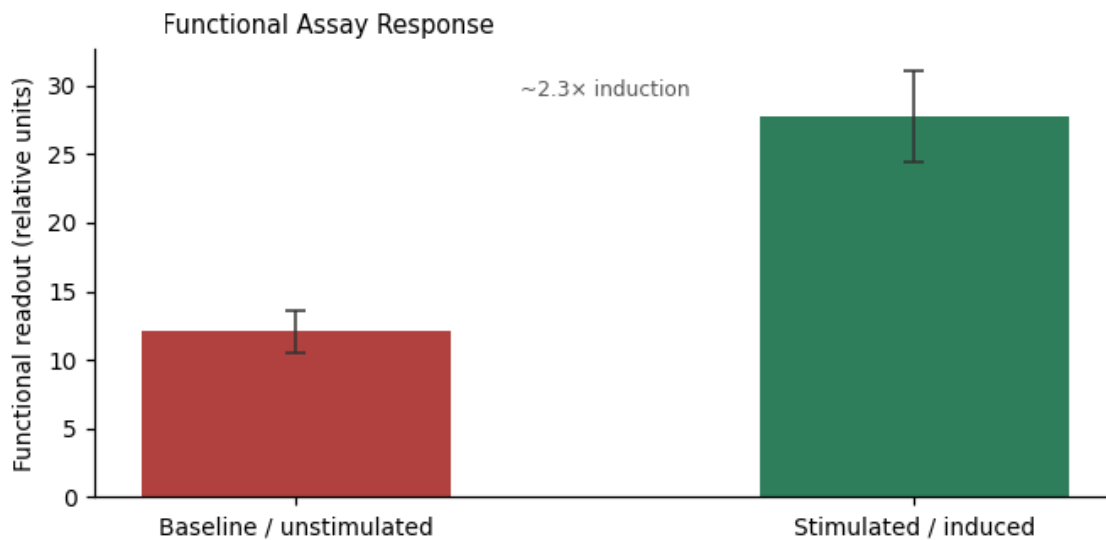


Figure 3. Functional assay readout — ~2.3× induction over baseline.

6. QC Acceptance Criteria

Acceptance Criterion	Result
≥70% ZO-1+ junctional staining by ICC	PASS
TEER within airway epithelium reference range	PASS
Apparent population doubling time	≈ 50 hours
Functional assay outcome	~2.3× induction over baseline

7. Handling & Culture Notes

- Refer to the product-specific Certificate of Analysis and datasheet for validated culture medium, seeding density, and passaging recommendations.
- As with any primary cell or cell line, confirm mycoplasma-negative status, expected morphology by phase-contrast microscopy, and viability by trypan blue or equivalent dye-exclusion assay at each passage before use in downstream assays.