

iPSC-Derived Upper Airway Model

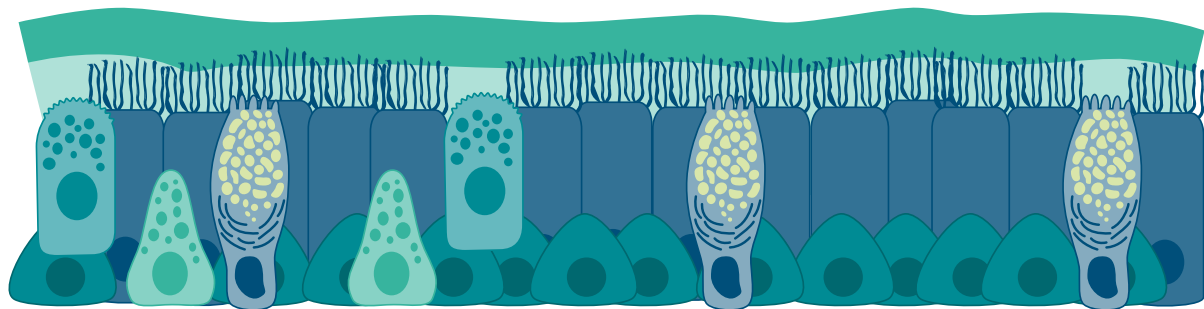
TECHNICAL SHEET

PRODUCT INFORMATION

The airway epithelium is comprised of heterogenous, polarised epithelial cells which provide a first-line of defence against inhaled toxins, particles and viruses. Distinct airway epithelial cell populations are largely recaptured in Newcells Biotech's induced pluripotent stem cell (iPSC)-derived respiratory airway epithelial model, whilst maintaining epithelial cell functionality including differentiation, fluid and mucin secretion and beating cilia.

Recapitulation of the complex airway epithelium using our iPSC-derived system allows for investigation of airway physiology and functionality, assessment of drug safety and the environmental impact on the airways. Additionally, our iPSC-derived airway model can be utilised for respiratory viral infection modelling.

iPSCs utilised in our models allow for an unlimited supply of airway epithelial cells, reducing potential for genetic and environmental impact variability often associated with primary human epithelial models.



Basal cell

Club cell

Neuroendocrine cell

Goblet cell

Ciliated cell

A schematic diagram of the human lung epithelium model developed by Newcells Biotech. Purified iPSC-derived basal cell populations are isolated and differentiated on an air-liquid interface, forming tight junctions and a structured pseudostratified epithelium, analogous to the in vivo human airway.

POSSIBLE APPLICATIONS

- Investigation of respiratory viral infections
- Assessment of respiratory drug safety
- Xenobiotic compound screening
- Specialised, functional, drug efficacy assessment

READOUTS

Newcells Biotech can perform a variety of non-functional and functional analyses, including:

- Gene and protein expression
- Immunohistochemistry/immunocytochemistry
- Cytokine/protein release and secretion
- Epithelial barrier integrity and it's response to damage
- Mucin secretion
- Airway surface liquid height
- Ciliary beat frequency

SERVICE INFORMATION

Newcells Biotech offer a high quality and reliable service for the assessment of small molecules and biologicals. Our expert lung scientists design custom study protocols and carry out the projects in our UK-based laboratories, working closely with our customers.

PRICING

Contact us for a quote.

SPECIFICATIONS

Format	3D heterogenous stratified epithelium culture on a permeable support (Thincert™/Transwell™)
Relevant Cell Types	<ul style="list-style-type: none">• Basal cells• Goblet cells• Club cells• Ciliated epithelial cells
Species	<ul style="list-style-type: none">• Human

GET IN TOUCH WITH THE TEAM FOR FURTHER INFORMATION

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Or use our contact form

newcellsbiotech.co.uk/contact-us/

WHAT WILL YOU DISCOVER?

Right target | Right drug | Right dose | Right patient