NEWCELLS
IN VITRO MODELS TO ACCELERATE CLINICAL TRANSLATION

Small airway epithelial cell (SAEC) model for studying lung physiology & lung diseases

Physiologically accurate and functionally validated for respiratory clinical translational research

What you can achieve:

The human small airway epithelial cell model can be utilized for:

- The study of drug efficacy and toxicity
- Generating predictive functional data for improving confidence in clinical translation

What forms the basis of the study:

- Primary small airway epithelial cells from healthy donor and idiopathic pulmonary fibrosis patients
- The SAEC cultures with Air-Liquid Interface (ALI) are functional and physiologically relevant.
- They have an established epithelial barrier, secrete key proteins and mucus, and have functional cilia

How can Newcells help

Model small airways of the human lung *in vitro* and evaluate toxicity of potential drug candidates

Why go for Newcells SAEC model?

1. Air-liquid interface for small airway epithelial cell culture that closely mirrors the normal airway physiology.

2. Contrary to conventionally used cell lines like A549 or Calu-3, the Newcells SAEC model is composed of key epithelial cells types **(Figure 1)** that enable accurate predictions of the potential cellular toxicity of therapeutics by assessing multiple epithelial damage parameters.

3. Series of non-invasive and terminal readouts to assess toxicity of both single and repeat dosing studies. Comprehensive data sets to predict potential toxicity of therapeutics **(Figure 2)**.

4. Epithelial barrier integrity evaluation using Transepithelial Electrical Resistance (TEER) measurements and FITC-dextran assay.

5. Cell viability testing with LDH release, ATP activity and MTT assays **(Figure 2)**.

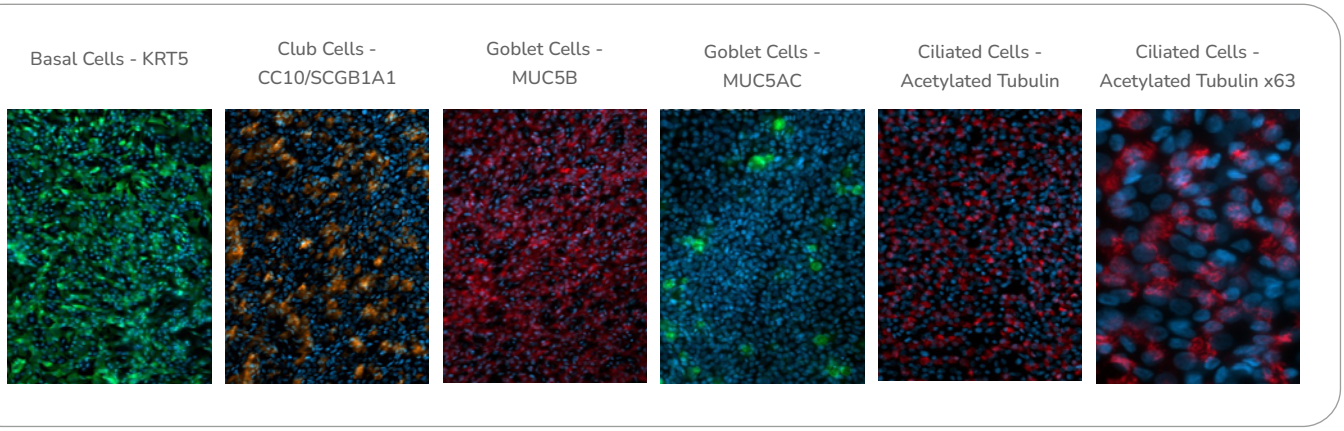

Figure 1: Expression of cell specific proteins in fully differentiated SAEC cultures. Immunocytochemistry images were obtained using a x20 objective unless otherwise specified.

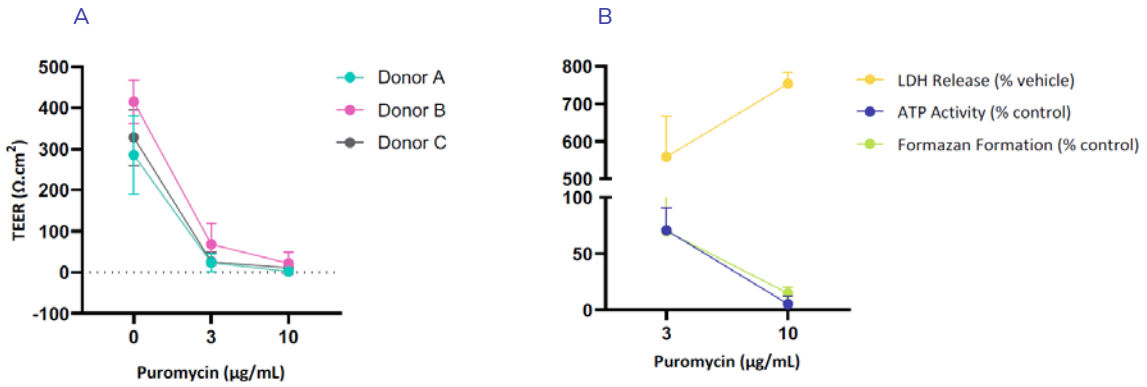

Figure 2 : Puromycin was added to SAECs at specified concentrations for 72 hours. (A) Response to puromycin treatment measured by Transepithelial Electrical Resistance show a dose dependent decrease in epithelial integrity. (B) Toxicology assessment via cellular ATP activity, LDH released, and formazan formation show high cytotoxicity. Data shown from n=3 donors.

For more information:

If you would like further information, please contact our experts or visit our website:

info@newcellsbiotech.co.uk
or visit: www.newcellsbiotech.co.uk/SAEC

Scan the QR code to download the flyer

Lung SAEC Model					
SKU No.	Offering	Format	Readouts	Time-points	Inclusions
LSSAEC000H	Lung SAEC toxicity assay	24-wells	TEER , ATP, LDH and MTT with dose response curve	72 hours	1 donor, 3 compounds, 6 wells/compound with internal controls & QC included

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