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)**.

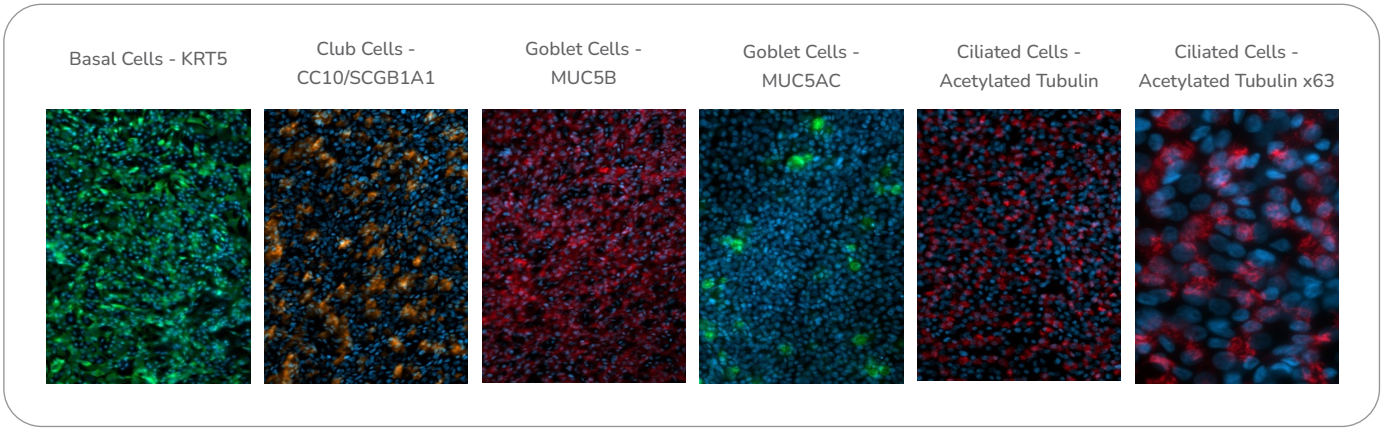

Figure 1: Fully differentiated SAEC cultures express cell specific proteins. Immunocytochemistry images were obtained using a x20 objective unless otherwise specified.

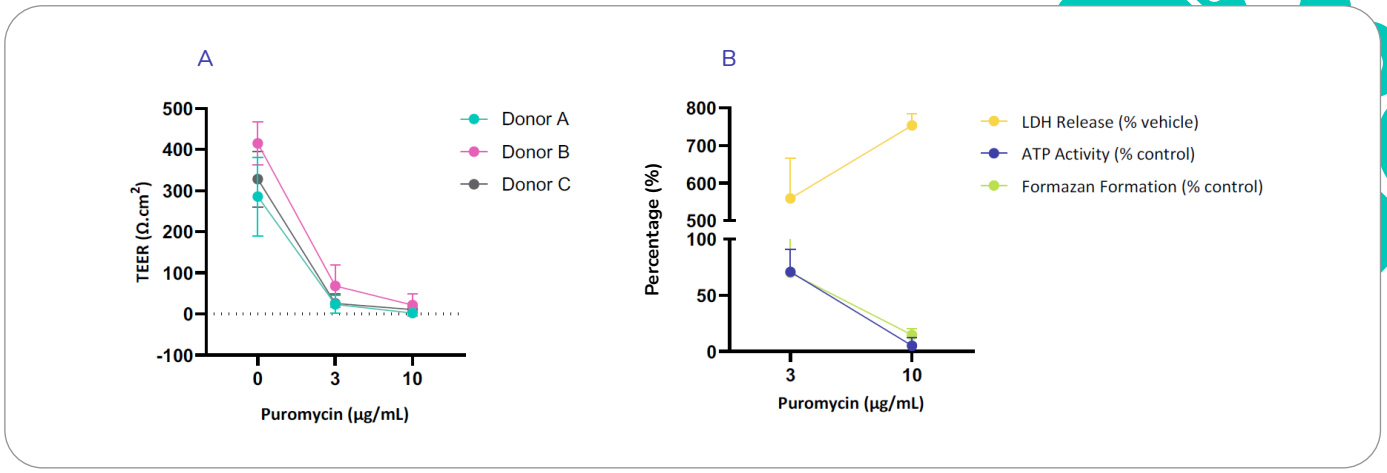

Figure 2 : Functional validation of SAEC model showing expected toxic effect from addition of Puromycin was added to SAECs at specified concentrations for 72 hours. (A) Response to puromycin treatment measured by Transepithelial Electrical Resistance show a dose dependent decrease in epithelial integrity. (B) High cytotoxic effect of Puromycin measured as cellular ATP activity, LDH released, and formazan formation. 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 and ATP with dose response curve (LDH, MTT, PCR –optional readouts)	72 hours	1 donor, 3 compounds, 6 dilutions with internal controls & QC included

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