PneumaCult™-ALI

Medium with Transwell® Inserts

Air-liquid interface (ALI) culture is a highly physiologically relevant culture system to model the human airway. The quality and type of culture inserts used to set up the assay can greatly affect the performance of ALI cultures.

Transwell® Inserts have been validated for the use of PneumaCult™-ALI, the leading medium in the generation of a pseudostratified mucociliary epithelium from human airway epithelial cells. In a side-by-side comparison between Transwell® Inserts and competitor inserts of the same material and pore size, we observed that ALI cultures generated using Transwell® Inserts were more differentiated when primary human bronchial epithelial cells (HBECs) were cultured with PneumaCult™-ALI (Figure 1). We also observed higher expression of goblet and ciliated cell markers with Transwell® Inserts using qPCR (Figure 2).

Why use PneumaCult™-ALI, with Transwell® Inserts?

VALIDATED FOR OPTIMAL ALI CULTURES. Superior ALI culture morphology and epithelial cell marker expression.

HIGHLY PHYSIOLOGICALLY RELEVANT. Pseudostratified epithelium closely resembling the human airway in vivo.

REPRODUCIBLE RESULTS. Inserts with low lot-to-lot variability, complementary to the serum-free and BPE-free medium formulation.

COMPLETE WORKFLOW. Along with PneumaCult™-Ex Plus, PneumaCult™-ALI Medium with Transwell® Inserts provides all the tools to model the human airway at the ALI.

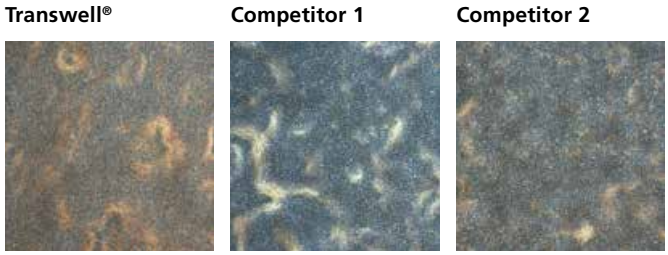

Figure 1. Representative images of ALI culture morphology.

HBECs were seeded onto the inserts at passage 3 (P3) and differentiated in PneumaCult™-ALI for 21 days. Comparison was made with competitor inserts of the same material and pore size.

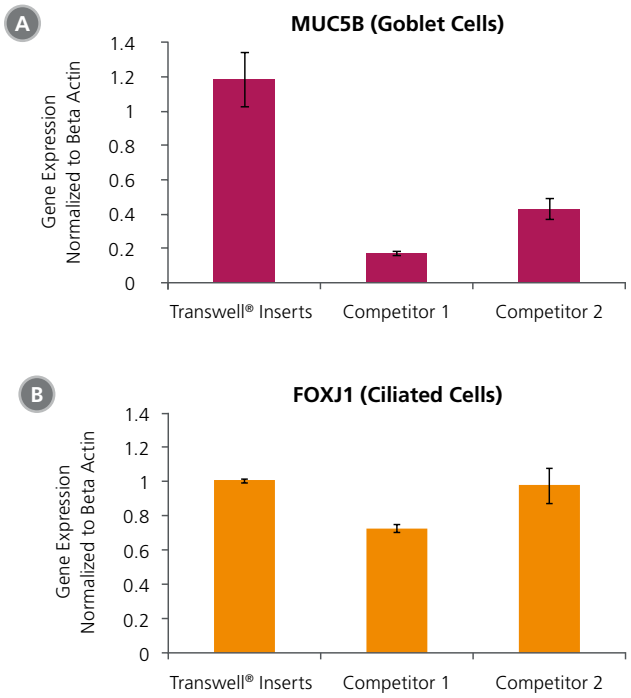

Figure 2. Differential epithelial cell marker expression in ALI cultures generated with different inserts.

HBECs were seeded onto the inserts at P3 and differentiated in PneumaCult™-ALI for 21 days. Gene expression of goblet (MUC5B) and ciliated (FOXJ1) cell markers was assessed by qPCR and normalized to beta actin. Comparison was made with competitor inserts of the same material and pore size.

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For your convenience, PneumaCult™-ALI can now be purchased with Transwell® Inserts either as a 12-well format with 12 mm Transwell® Inserts, or as a 24-well format with 6.5 mm Transwell® Inserts.

Product Information

PRODUCT		CATALOG #
	PneumaCult™-ALI Medium with 12 mm Transwell® Inserts • Including 4 of the 12-well plate, with 12 inserts per plate	05021
	PneumaCult™-ALI Medium with 6.5 mm Transwell® Inserts • Including 4 of the 24-well plate, with 12 inserts per plate	05022
Kits Components		
	PneumaCult™-ALI Medium	05001
	Costar® 12 mm Transwell®, 0.4 µm Pore Polyester Membrane Inserts • Including 4 of the 12-well plate, with 12 inserts per plate	38023
	Costar® 6.5 mm Transwell®, 0.4 µm Pore Polyester Membrane Inserts • Including 4 of the 24-well plate, with 12 inserts per plate	38024