

Primary Cells for Airway Research

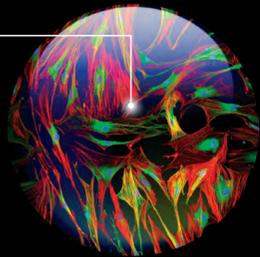
Stepping Stone for Biological Relevance.

Lung Fibroblasts

Found Abundantly in Lung Interstitium

- Maintains structural integrity of the lung
- Involved in repair and remodeling processes following injury

Lung Fibroblasts

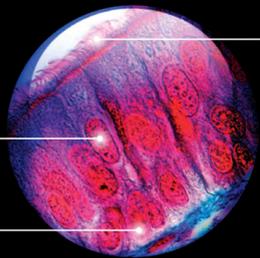


Respiratory Epithelial Cells

Lines the Trachea and Bronchial Tubes

- Lines the respiratory tract, moistens and protect the airways
- Barrier to potential pathogens, preventing infection and tissue injury
- Pseudostratified consisting of ciliated cells, goblet cells and basal cells

Goblet Cells – Secrete mucus to maintain epithelial moisture and trap pathogens or particulates



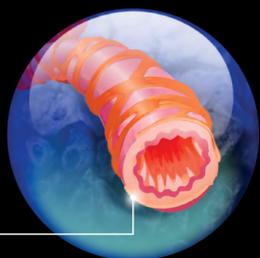
Basal Cells – Differentiate into other cells types to restore a healthy epithelial cell layer

Cilia Cells – Move back and forth, carrying mucus up and out of the respiratory tract

Bronchial Smooth Muscle Cells

Layers Beneath the Bronchial/Tracheal Epithelial Cells in the Trachea or Bronchial Tubes

- Produces slow and sustained contractions in the wall of lungs to regulate air flow
- Over activity of smooth muscle cell layer causes narrowing of airways and has been tied to asthma and COPD



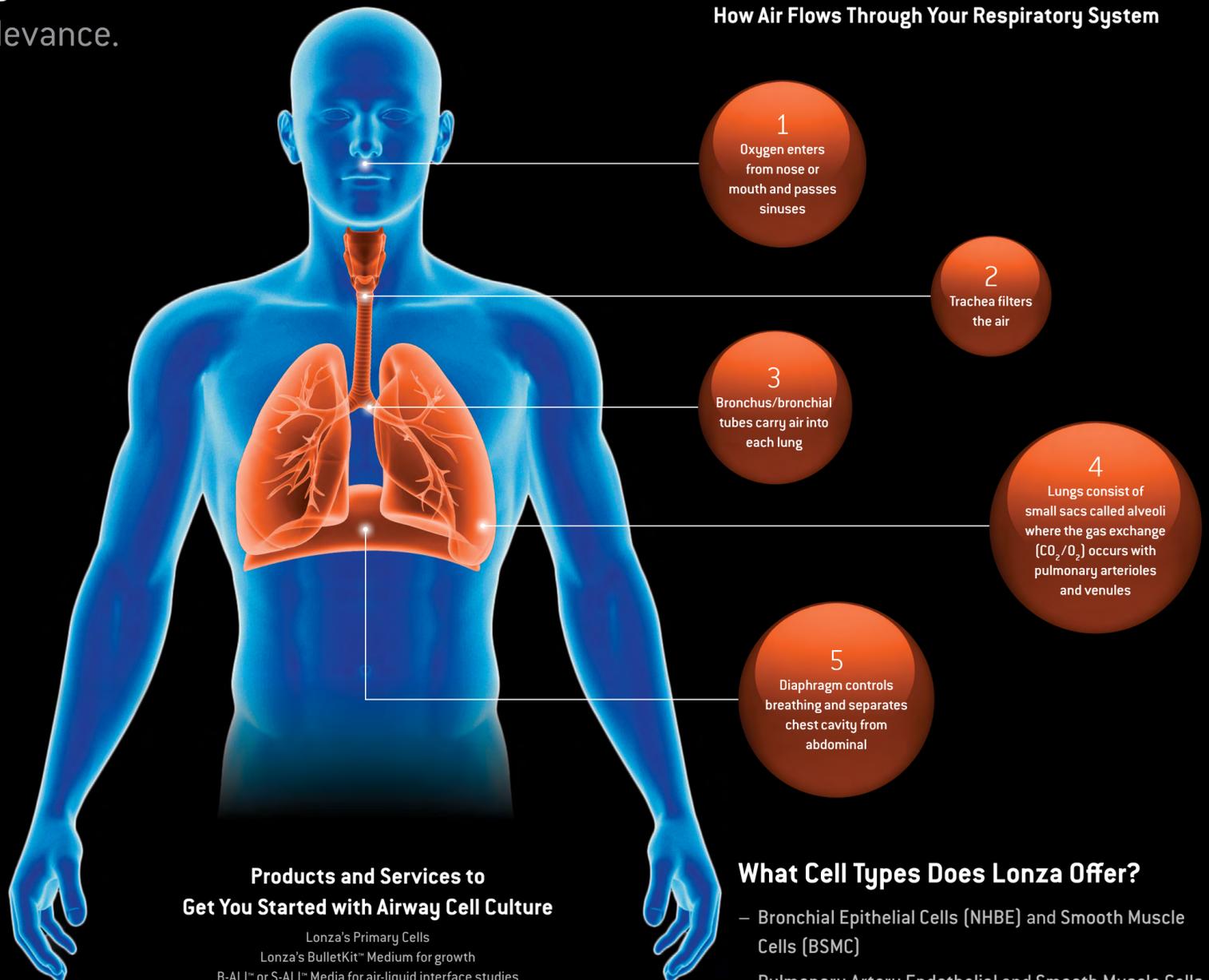
Smooth Muscle

Human bronchial epithelial cells are typically co-cultured with smooth muscle cells and/or lung fibroblasts for airway modeling in normal or diseased donors. Lonza provides cells from normal, asthmatic, COPD and cystic fibrosis donors to support such applications.

Products and Services to Get You Started with Airway Cell Culture

- Lonza's Primary Cells
- Lonza's BulletKit™ Medium for growth
- B-ALI™ or S-ALI™ Media for air-liquid interface studies
- Lonza's culturing protocols
- Lonza's scientific support team

How Air Flows Through Your Respiratory System



What Cell Types Does Lonza Offer?

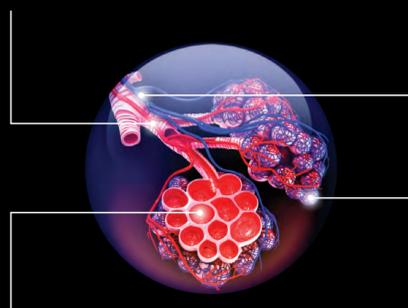
- Bronchial Epithelial Cells (NHBE) and Smooth Muscle Cells (BSMC)
- Pulmonary Artery Endothelial and Smooth Muscle Cells
- Lung Fibroblasts
- Small Airway Epithelial Cells containing mix of alveoli, bronchiole cells including cilia
- Microvascular Endothelial Cells from arterioles, capillaries and venules

Respiratory Endothelial and Alveolar Cells

Found within the Lungs

Pulmonary Vein – carries the oxygenated blood away from lung to the heart

Pulmonary Artery – carries deoxygenated blood to the lung



Alveolar epithelial cells are located in small airway. Alveoli carry oxygen to the blood and takes CO₂ away from the blood back to the respiratory system

Microvascular Endothelial Cells (HMVEC) surround alveoli, involved in gas exchange, also provide passive surface for exchange of water, macromolecules and some cell traffic

Airway Cells from Lonza

Cat. No.	Cell Type	Description	Media
CC-2540, CC-2540S	NHBE with RA*	Bronchial/tracheal epithelial with retinoic acid	BEGM™ or B-ALI™
CC-2541	NHBE without RA	Bronchial/tracheal epithelial without retinoic acid	BEGM™
CC-2547	SAEC*	Small airway epithelial	SAGM™
CC-2527	HMVEC-L	Lung microvascular endothelial	EGM™ 2MV
CC-2530	HPAEC	Pulmonary artery endothelial**	EGM™ 2
CC-2576	BSMC	Bronchial smooth muscle*	SmGM™ 2
CC-2512	NHLF	Lung fibroblasts*	FGM™ 2
CC-2581	PASMC	Pulmonary artery smooth muscle**	SmGM™ 2

* Cell types available from normal, Asthmatic, COPD, and Cystic Fibrosis donors

** Cell types available from normal and diabetic type 1 and 2 donors

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