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Nota di contenuto	Intro -- Foreword -- Preface -- Contents -- Chapter 1: An Introduction to Engineering and Modeling the Lung -- 1.1 Introduction -- 1.2 Broader Impacts of Understanding Lung Biology in Health and Disease -- 1.3 Lung Physiology in Homeostasis and Disease -- 1.4 Engineering Translational Models of Lung Homeostasis and Disease -- 1.5 Conclusion -- References -- Part I: Engineering and Modeling the Developing Lung -- Chapter 2: Simple Models of Lung Development -- 2.1 Introduction -- 2.1.1 Basics of Lung Development -- 2.2 Models to Study Lung Development -- 2.3 Models of Early Lung Development (Airways) -- 2.3.1 Explant Cultures -- 2.3.2 2D and 3D Imaging of Branching Morphogenesis -- 2.3.3 Time-Lapse Imaging -- 2.3.4 Organoids -- 2.4 Models of Late Lung Development -- 2.4.1 Saccular Phase Models -- 2.4.2 Alveologenesis -- 2.4.3 Other 3D Models

of Alveologenesis -- 2.5 Conclusion -- References -- Chapter 3: Lung Development in a Dish: Models to Interrogate the Cellular Niche and the Role of Mechanical Forces in Development -- 3.1 Introduction -- 3.2 Self-Assembled Organoid and Spheroid Models -- 3.2.1 Creating Lung Organoid Models That Represent Regional Composition and Heterogeneity -- 3.2.2 Advancing the Complexity of Organoids to Investigate Tissue Crosstalk -- 3.2.3 Induction of Lung Organoids to Create Multiple Tissue Compartments -- 3.3 Microfluidic and Organ-on-a-Chip Models to Study Lung Development -- 3.3.1 Moving Toward More Complex Physiology with Multiple Channels -- 3.3.2 Integration of Dimensionality and Biomaterials into Organ-on-a-Chip Platforms -- 3.4 Whole Organ Models to Understand the Mechanics of Lung Development -- 3.5 Conclusion -- References -- Chapter 4: Multipotent Embryonic Lung Progenitors: Foundational Units of In Vitro and In Vivo Lung Organogenesis -- 4.1 Introduction -- 4.2 Overview of Embryonic Lung Progenitors. 4.2.1 Stage-Specific Epithelial Progenitors (Primordial, Distal Tip, Basal) -- Lung Primordial Progenitors -- Distal Tip Progenitors -- Airway Basal Cells -- 4.2.2 Stage-Specific Mesenchymal Progenitors -- 4.3 Ex Vivo Culture of Multipotent Embryonic Lung Progenitors -- 4.3.1 Ex Vivo Culture of Mouse Embryonic Progenitors -- 4.3.2 Ex Vivo Culture of Human Embryonic Progenitors -- 4.4 In Vitro Derivation of Multipotent Embryonic Lung Progenitors -- 4.5 Progenitor Cell Similarity Models -- 4.6 Conclusion -- References -- Part II: Engineering and Modeling Large Airways -- Chapter 5: Basic Science Perspective on Engineering and Modeling the Large Airways -- 5.1 Introduction -- 5.2 Proximal Airways: Composition and Function -- 5.3 Regeneration of the Airways -- 5.3.1 Endogenous Stem Cells -- 5.3.2 The Stem Cell Niche -- 5.3.3 Stem Cell Attrition with Disease and Aging -- 5.4 Developing Cellular Therapies for Regeneration of Airway Tissues -- 5.5 In Vitro Models of the Human Airways -- 5.5.1 Transwell Air-Liquid Interface (ALI) Cultures -- 5.5.2 Airway Spheroids: Tracheo/Bronchospheres -- 5.5.3 Organoids -- 5.5.4 Lung-on-a-Chip -- 5.5.5 Xenografts -- 5.6 Cell-Matrix Interactions -- 5.7 Conclusion -- References -- Chapter 6: Computational, Ex Vivo, and Tissue Engineering Techniques for Modeling Large Airways -- 6.1 Large Airways: Structure-Function Relationship -- 6.2 Pathologies and the Need for Modeling the Large Airways -- 6.2.1 Conditions That Cause Large Airway Dysfunction -- 6.2.2 Need for Computational and Physiological Models of the Large Airways -- 6.3 Computational Modeling -- 6.4 Ex Vivo Testing -- 6.5 Tissue Engineering Techniques for Modeling the Large Airways -- 6.5.1 Biomaterial Scaffolds -- Decellularized Scaffolds -- Cellular, Synthetic, or Hybrid Biomaterial Approaches -- 6.5.2 Manufacturing Techniques for Large Airway Models. 6.6 Tools for Functional Assessment of Large Airway Models -- 6.7 Limitations and Future Considerations -- References -- Chapter 7: Engineering Large Airways -- 7.1 Introduction -- 7.2 Forces During Respiration and How They Can Influence Construct Design -- 7.3 The Structure of the Trachea and Its Mechanical Properties -- 7.3.1 Tracheal Cartilage -- 7.3.2 Trachealis Muscle -- 7.3.3 Annular Ligament -- 7.4 Mechanical Properties of the Whole Trachea and the Implications of Mechanical Property Mismatch -- 7.4.1 Compliance -- 7.4.2 Extension and Bending -- 7.5 Key Considerations and Summary of Recommended Mechanical Tests -- 7.6 Conclusion -- References -- Part III: Engineering and Modeling the Mesenchyme and Parenchyma -- Chapter 8: Engineering and Modeling the Lung Mesenchyme -- 8.1 Introduction -- 8.2 Advancing the Discovery

of Fibroblast Heterogeneity -- 8.3 The Organization and Heterogeneity of Lung Fibroblasts -- 8.3.1 Platelet-Derived Growth Factor Receptor Alpha (PDGFR)-Expressing Alveolar Fibroblasts 1 and 2 -- 8.3.2 Platelet-Derived Growth Factor Beta (PDGFR)-Expressing Pericytes -- 8.3.3 Airway and Vascular Smooth Muscle (ASM and VSM) -- 8.4 Other Fibroblast Subtypes -- 8.4.1 Developmental Secondary Crest Myofibroblasts (SCMF) -- 8.4.2 Fibrotic Disease-Associated Myofibroblasts (MyoF) -- 8.5 Bioengineering Approaches to Characterize Complex Fibroblast Behaviors -- 8.5.1 Organoids to Model Mesenchymal-Epithelial Interactions -- 8.5.2 Lung-on-a-Chip to Model Human Lung Architecture and Environmental Forces -- 8.5.3 Acellular Tissue Scaffolds to Model Fibroblast and ECM Interactions -- 8.6 Targeting Fibroblasts with Nanoparticles as Strategy for Intervention -- 8.7 Conclusion -- References -- Chapter 9: Engineering Dynamic 3D Models of Lung -- 9.1 Introduction -- 9.2 Building the Extracellular Microenvironment -- 9.2.1 Biomaterials. 9.2.2 Lung Decellularization and Recellularization -- 9.2.3 dECM Hydrogels -- 9.2.4 Synthetic Hydrogels -- 9.2.5 Hybrid-Hydrogels -- 9.3 Constructing Relevant Tissue Geometries -- 9.3.1 Precision-Cut Lung Slices -- 9.3.2 Organoids -- 9.3.3 Engineered 3D Hydrogel Constructs -- 9.3.4 3D Bioprinting -- 9.4 Incorporating Dynamic Mechanical Forces -- 9.4.1 Biomechanical Modeling -- 9.4.2 Lung-on-a-Chip -- 9.5 Conclusion -- References -- Chapter 10: Lung-on-a-Chip Models of the Lung Parenchyma -- 10.1 Introduction -- 10.2 Lung Alveolar Cells and the Alveolar Environment -- 10.2.1 Lung Alveolar Cells and Their Environment -- 10.2.2 Lung Alveolar Epithelial Cells In Vitro -- 10.3 Reproducing the Alveolar Barrier with a Lung-on-a-Chip -- 10.3.1 Reproducing the Lung Alveolar Environment on Chip -- Scaffolds for the Alveolar Barrier: Engineering a Thin, Flexible and Soft Basement Membrane -- Mechanical Stress Induced by the Respiratory Movements -- 10.3.2 Effects of Biochemical and Physical Cues on the Lung Alveolar Barrier -- Effects of Mechanical Forces on Alveolar Epithelial Cells -- Effects of Mechanical Forces on Lung Endothelial Cells -- Lung Alveolar Extracellular Matrix (ECM) -- Effects Induced by the Air-Liquid Interface -- 10.3.3 Read-Outs: Extracting Information from a Lung-on-a-Chip -- 10.4 Lung Disease-on-a-Chip Models -- 10.4.1 Idiopathic Pulmonary Fibrosis (IPF) -- 10.4.2 Emphysema -- 10.4.3 Acute Respiratory Distress Syndrome (ARDS) -- 10.4.4 COVID -- 10.4.5 Lung Adenocarcinoma -- 10.5 Challenges of Lung-on-a-Chip Technologies -- 10.6 Perspectives for Lung-on-a-Chip Technologies -- References -- Chapter 11: Assessment of Collagen in Translational Models of Lung Research -- 11.1 Introduction -- 11.2 Quantification of Collagen -- 11.2.1 The Sircol Assay -- 11.2.2 Hydroxyproline Quantification -- 11.2.3 Immuno-Based Methods. 11.3 Mass Spectrometry Characterization of Collagen -- 11.3.1 Assessment of Collagens in Proteomics Analyses of Pulmonary ECM -- 11.3.2 Analysis of Posttranslational Modifications of Collagen -- 11.3.3 Assessment of Enzymatic Crosslinks in Collagen -- 11.4 Assessment of Collagen Architecture In Situ -- 11.4.1 Masson's Trichrome Staining -- 11.4.2 Picrosirius Red Staining -- 11.4.3 Second Harmonic Generation Microscopy -- 11.4.4 Immunohistochemistry -- 11.4.5 Transmission Electron Microscopy -- 11.4.6 Selected Complementary and Emerging Techniques -- Confocal Reflection Microscopy (CRM) -- Atomic Force Microscopy (AFM) -- Imaging Probes for Magnetic Resonance Imaging (MRI) -- 11.5 Monitoring Fibril Formation in Real Time Using Purified Collagen -- 11.6 Assessment of Collagen Turnover by Peripheral Markers -- 11.7 Conclusion -- References -- Part IV:

Engineering and Modeling the Pulmonary Vasculature -- Chapter 12: Understanding and Engineering the Pulmonary Vasculature -- 12.1 Pulmonary Vasculature in Development and Diseases -- 12.2 Pulmonary ECs and Their Angiocrine Functions -- 12.3 Engineering the Pulmonary Vasculature -- 12.3.1 Generation of Vascularized Organoids -- 12.3.2 Bioengineered Lung and Vasculature Using Acellular Native Lung Scaffold -- 12.3.3 Vascularized Lung-on-a-Chip -- 12.3.4 Guided Vascularization Through 3D Bioprinting -- 12.4 Pulmonary Vascular Diseases -- 12.5 Conclusion -- References -- Chapter 13: An Overview of Organ-on-a-Chip Models for Recapitulating Human Pulmonary Vascular Diseases -- 13.1 Introduction -- 13.2 Microfluidics and Organ-on-a-Chip -- 13.2.1 Concepts -- Microfluidics in Vascular Biology -- Patterning Microvascular Networks -- 13.3 OoC for Pulmonary Vascular Diseases -- 13.4 Conclusion -- References -- Chapter 14: Clinical Translation of Engineered Pulmonary Vascular Models -- 14.1 Introduction. 14.2 Brief Overview of Pulmonary Vascular Physiology.

Sommario/riassunto

Cutting-edge engineering approaches towards modelling lung homeostasis and disease have created dynamic new opportunities for interdisciplinary collaboration and unprecedented progress toward understanding and treating lung disease. This text connects established research in lung biology and physiology to innovative engineering strategies for pulmonary modelling. This unique approach aims to encourage and facilitate progress among a greater audience of basic and translational scientists, clinicians, and medical practitioners. Engineering Translational Models of Lung Homeostasis and Disease illustrates the advances in lung tissue characterization, revealing dynamic changes in the structure, mechanics, and composition of the extracellular matrix. This information paves the way for tissue-informed engineering models of pulmonary tissue, improved design of clinical materials, and advances against a variety of common pathologies. Current translational challenges are highlighted, as are engineering opportunities to overcome these barriers. This foundational text holds valuable lessons for researchers and clinicians throughout the fields of engineering, materials science, cell biology, pulmonary medicine, and clinical science. Chapter 4 is available open access under a Creative Commons Attribution 4.0 International License via link.springer.com.
