1. Record Nr. UNINA9910825478703321

Titolo	Tendon regeneration : understanding tissue physiology and development to engineer functional substitutes / / edited by Manuela E. Gomes, Rui L. Reis, Marcia T. Rodrigues
Pubbl/distr/stampa	Amsterdam, [Netherlands] : , : Academic Press, , 2015 ©2015
ISBN	0-12-801600-0
Descrizione fisica	1 online resource (471 p.)
Disciplina	636.10897474044
Soggetti	Tendons Tendons - Wounds and injuries - Healing
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Front Cover; TENDON REGENERATION; Copyright; CONTENTS; CONTRIBUTORS; PREFACE; SECTION 1 - Biology and Physiologyof Tendons; Chapter 1 - Tendon Physiology and Mechanical Behavior: Structure-Function Relationships; 1. TENDON STRUCTURE AND COMPOSITION; 2. TENDON MECHANICS; 3. MULTISCALE MECHANICS AND STRUCTURE-FUNCTION CHARACTERIZATION; 4. MECHANICAL AND COMPOSITIONAL VARIATIONS IN TENDONS WITH DIFFERENT FUNCTIONS; LIST OF ABBREVIATIONS; GLOSSARY; REFERENCES; Chapter 2 - Tendon Resident Cells-Functions and Features in Section I-Developmental Biology and Physiology of Tendons; 1. INTRODUCTION 2. TENDON CELLS-ORIGIN AND SPECIFICATION3. TENDON CELLS-ECM SYNTHESIS, ASSEMBLY, AND TISSUE MATURATION; 4. CELL-ECM INTERACTIONS; 5. MECHANOREGULATION OF TENDON CELLS; 6. CONCLUSION; LIST OF ABBREVIATIONS; GLOSSARY; REFERENCES; Chapter 3 - Mechanobiology of Embryonic and Adult Tendons; 1. INTRODUCTION; 2. EMBRYONIC TENDON; 3. POSTNATAL TENDON; 4. MECHANICAL CUES EXPERIENCED BY EMBRYONIC, POSTNATAL, AND ADULT TENDONS; 5. STUDIES IN THE EMBRYO SUGGEST MECHANICAL FACTORS INFLUENCE EMBRYONIC TENDON DEVELOPMENT; 6. IN VITRO STUDIES SUGGEST MECHANICAL FACTORS INFLUENCE EMBRYONIC

TENDON DEVELOPMENT
7. EXERCISE STUDIES EXAMINE THE INFLUENCE OF MECHANICS IN ADULT TENDON8. IN VITRO STUDIES SUGGEST MECHANICAL FACTORS INFLUENCE ADULT TENDON HOMEOSTASIS; 9. POTENTIAL MECHANISMS OF TENDON CELL MECHANOTRANSDUCTION; 10. CONCLUSIONS; LIST OF ABBREVIATIONS; REFERENCES; SECTION 2 - Pathologies and Repairof Tendons; Chapter 4 - Tendinopathy I: Understanding Epidemiology, Pathology, Healing, and Treatment; 1. INTRODUCTION; 2. ANATOMICAL DIAGNOSIS; 3. PATHOLOGY; 4. EPIDEMIOLOGY; 5. PATHOPHYSIOLOGY; 6. HEALING AND REPAIR; 7. NONSURGICAL TREATMENT; 8. SURGICAL TREATMENT; 9. CONCLUSION
LIST OF ABBREVIATIONSGLOSSARY; REFERENCES; Chapter 5 - Tendinopathy II: Etiology, Pathology, and Healing of Tendon Injury and Disease; 1. EPIDEMIOLOGY; 2. DEFINITIONS; 3. TENDINOPATHY ETIOLOGY; 4. PATHOLOGY; 5. SUMMARY AND CONCLUSIONS; LIST OF ABBREVIATIONS; GLOSSARY; REFERENCES; SECTION 3 - Tendon Regenerative Medicine Approaches; Chapter 6 - Cell-Based Approaches for Tendon Regeneration; 1. INTRODUCTION; 2. TENDON ENDOGENOUS REGENERATION; 3. ISOLATION PROCEDURES OF TENDON RESIDENT CELLS; 4. ALTERNATIVE STEM CELLS SOURCES FOR CELL-BASED TENDON TISSUE ENGINEERING
5. MOVING CELL THERAPIES INTO THE CLINICS6. CONCLUSION; LIST OF ABBREVIATIONS; GLOSSARY; REFERENCES; Chapter 7 - The Role of Growth Factors in Tendon Stimulation; 1. INTRODUCTION; 2. GROWTH FACTORS; 3. PLATELET-RICH PLASMA; 4. CONCLUSIONS; LIST OF ABBREVIATIONS; REFERENCES; SECTION 4 - Scaffolds-Based Approaches; Chapter 8 - Engineering Anisotropic 2D and 3D Structures for Tendon Repair and Regeneration; 1. INTRODUCTION; 2. ANISOTROPIC SPONGES; 3. ANISOTROPIC SELF-ASSEMBLED FIBERS; 4. ANISOTROPIC ELECTROSPUN FIBERS; 5. ANISOTROPIC IMPRINTED SUBSTRATES; 6. CONCLUSIVE REMARKS
LIST OF ABBREVIATIONS

Sommario/riassunto

Tendon Regeneration: Understanding Tissue Physiology and Development to Engineer Functional Substitutes is the first book to highlight the multi-disciplinary nature of this specialized field and the importance of collaboration between medical and engineering laboratories in the development of tissue-oriented products for tissue engineering and regenerative medicine (TERM) strategies. Beginning with a foundation in developmental biology, the book explores physiology, pathology, and surgical reconstruction, providing guidance on biological approaches that enhances tendon regeneration practi