Record Nr. UNINA9910787912303321 **Titolo** MicroRNA in regenerative medicine / / edited by Chandan K. Sen London, England:,: Elsevier,, 2015 Pubbl/distr/stampa ©2015 **ISBN** 0-12-405858-2 Descrizione fisica 1 online resource (1305 p.) Disciplina 572.88 Soggetti RNA RNA - Therapeutic use Regenerative medicine Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali "Academic Press is an imprint of Elsevier"--T.p. verso. Nota di bibliografia Includes bibliographical references and index. Nota di contenuto Front Cover; MicroRNA inRegenerativeMedicine; Copyright; Dedication; Contents; Contributors; Part 1 - Stem Cells; CHAPTER 1 MicroRNA Biogenesis in Regenerative Medicine; 1.1 INTRODUCTION; 1.2 MACRO IMPACT OF MIRNAS; 1.3 MIRNA BIOGENESIS: DIFFERENT PATHS TO THE SAME DESTINATION; 1.4 MECHANISMS OF MIRNA-INDUCED TRANSLATIONAL REPRESSION; 1.5 MIRNA REGULATION; 1.6 METHODS FOR MIRNA PROFILING: 1.7 BIOINFORMATICS ANALYSIS OF MIRNAS: 1.8 MIRNA APPLICATIONS IN REGENERATIVE MEDICINE; 1.9 MIRNAS AND

TRANSLATIONAL REPRESSION; 1.5 MIRNA REGULATION; 1.6 METHODS FOR MIRNA PROFILING; 1.7 BIOINFORMATICS ANALYSIS OF MIRNAS; 1.8 MIRNA APPLICATIONS IN REGENERATIVE MEDICINE; 1.9 MIRNAS AND STEM CELLS; 1.10 CONCLUSIONS AND FUTURE PERSPECTIVES; CHAPTER QUESTIONS; ACRONYMS AND ABBREVIATIONS REFERENCESFURTHER READING; Chapter 2 - Control of Pluripotency and Reprogramming; 2.1 INTRODUCTION; 2.2 BASIC PROPERTIES OF STEM CELLS; 2.3 PLURIPOTENCY; 2.4 NUCLEAR REPROGRAMMING; 2.5 CONCLUSIONS; CHAPTER QUESTIONS; ACRONYMS AND ABBREVIATIONS; REFERENCES; FURTHER READING; Chapter 3 - Epigenetic Modification of MicroRNAS; 3.1 INTRODUCTION; OF A HEALTHY CELL; 3.3 MIRNAS AND EPIGENETIC REGULATION; 3.4 A GENERALIZED MODEL FOR EPIGENETIC REGULATION OF MIRNAS IN DETERMINING CELL FATE; 3.5 EPIGENETIC MODIFICATIONS AND REGENERATIVE MEDICINE; 3.6 EPIGENETIC MODIFYING DRUGS 3.7 THE CLINICAL RELEVANCE OF MIRNAS AND EPIGENETIC MODIFYING

DRUGS3.8 CONCLUSIONS AND FUTURE PERSPECTIVES: CHAPTER QUESTIONS: ABBREVIATIONS: REFERENCES: FURTHER READING: Chapter 4 - miRNAs in Bone Marrow-Derived Mesenchymal Stem Cells; 4.1 INTRODUCTION; 4.2 MECHANISMS OF MSC CORRECTION; 4.3 MIRNAS IN GENERAL AND IN WOUND HEALING; 4.4 MSCS IN MIR-146A EXPRESSION: ATTENUATION OF INFLAMMATORY RESPONSE IN DIABETIC WOUNDS; 4.5 CONCLUSIONS AND FUTURE PERSPECTIVES; Chapter Questions; REFERENCES; Chapter 5 - miRNAs in Cancer Stem Cells; 5.1 INTRODUCTION: 5.2 MIRNA REGULATION OF NORMAL STEM CELLS 5.3 MIRNA REGULATION OF CANCER STEM CELLS5.4 REGULATION OF MIRNAS TO INHIBIT CANCER STEM CELLS; 5.5 CONCLUSIONS AND FUTURE PERSPECTIVES; CHAPTER QUESTIONS; ACKNOWLEDGMENTS; REFERENCES; FURTHER READING; Chapter 6 - MicroRNAs in Neural Stem Cells; GLOSSARY; 6.1 INTRODUCTION; 6.2 FIRST INSIGHTS: DICER-KNOCKOUT MICE: 6.3 MIRNA CONTROL OF NSC STATUS AND PROGRESSION ALONG DIFFERENTIATION: 6.4 MIRNAS AS NEURONAL FATE DETERMINANTS; 6.5 CONCLUSIONS AND FUTURE PERSPECTIVES; CHAPTER QUESTIONS: REFERENCES: ONLINE RESOURCES: FURTHER READING: Chapter 7 - MicroRNAs in Embryonic Stem Cells: GLOSSARY 7.1 INTRODUCTION7.2 STEM CELLS AND PLURIPOTENCY; 7.3 MIRNAS IN EMBRYONIC STEM CELLS: 7.4 THE ROLE OF MIRNAS IN CELLULAR REPROGRAMMING: 7.5 CONCLUSIONS AND FUTURE PERSPECTIVES: CHAPTER QUESTIONS; ACKNOWLEDGMENTS; REFERENCES; FURTHER READING: Seminal Articles: Reviews: Chapter 8 - MicroRNAs in Normal and Malignant Myelopoiesis; 8.1 INTRODUCTION; 8.2 MIRNAS IN HEMATOPOIETIC STEM CELLS AND LINEAGE-COMMITTED PROGENITOR CELLS; 8.3 CRITICAL TRANSCRIPTION FACTORS CONTROL MIRNAS IN MYELOPOIESIS: 8.4 MIRNA FUNCTIONS IN MATURE MYELOID CELLS: 8.5 MIRNAS IN MALIGNANT MYELOPOIESIS 8.6 ABERRANT MIRNA BIOGENESIS IN AML

Sommario/riassunto

This work encapsulates the uses of miRNA across stem cells, developmental biology, tissue injury and tissue regeneration. In particular contributors provide focused coverage of methodologies, intervention and tissue engineering. Regulating virtually all biological processes, the genome's 1048 encoded microRNAs appear to hold considerable promise for the potential repair and regeneration of tissues and organs in future therapies. In this work, 50 experts address key topics of this fast-emerging field. Concisely summarizing and evaluating key findings emerging from fundamental research into t