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| 1. Record Nr. | UNINA9910917790203321 |
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| Titolo | Extracellular Vesicle: Biology and Translational Application // edited by Zongjin Li |
| Pubbl/distr/stampa | Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2024 |
| ISBN | 9789819755363 9789819755356 |
| Edizione | [1st ed. 2024.] |
| Descrizione fisica | 1 online resource (347 pages) |
| Disciplina | 610.72 |
| Soggetti | Medicine - Research Biology - Research Cytology Therapeutics Translational Research Cell Biology |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Nota di contenuto | Chapter 1. Extracellular Vesicles: Tiny Packages with Big Potential -- Chapter 2. Regulation and Mechanisms of Exosome Cargo Selection and Secretion -- Chapter 3. Exosomes (Extracellular Vesicles): A Significant Mediator through Inter-organs communication in Mesenchymal Stem Cell Therapy -- Chapter 4. Extracellular vesicle isolation methods -- Chapter 5. Technologies for EV Surface Modification and Its Application in Targeted -- Chapter 6. Design of Artificial Extracellular Vesicles for Treatments of Cardiovascular Diseases -- Chapter 7. EV Tetraspanins in Regenerative Medicine -- Chapter 8. The mechanisms and applications of exosomes in dermatology -- Chapter 9. Stem cell-derived extracellular vesicles as therapeutics against renal diseases -- Chapter 10. Exosomes for ophthalmic therapeutics -- Chapter 11. The Role of Extracellular vesicles in inflammatory bowel diseases -- Chapter 12. The applications of exosomes in the treatment of autoimmune-mediated eye diseases -- Chapter 13. Extracellular Vesicles in Pregnancy: Functional Insights, Diagnostic Potential for Maternal-Fetal Disorders, and Therapeutic Implications -- Chapter 14. |

Extracellular vesicles in aging and age-related diseases -- Chapter 15.
Extracellular vesicle imaging in theranostic applications -- Chapter 16.
Extracellular vesicles: main challenges in industrialization.

Sommario/riassunto

This book focuses on the applications of extracellular vesicles (EVs) for regenerative medicine. EVs are small, lipid-bound vesicles carrying cargo that can be released by virtually all cell types. Over the past decades, the field of EV research has experienced exponential growth. Once dismissed as mere cellular debris, EVs are now recognized as sophisticated messengers, facilitating the transmission of crucial information between cells and orchestrating a myriad of biological processes. Notably, stem cell-derived EVs hold particular promise in regenerative therapeutic applications. Rich in the functional components of stem cells, these EVs offer an alternative approach to cell therapy for tissue repair and regeneration. The purpose of this book is to provide an overview of EVs on their biology, function, and potential applications. The book starts with exploring the intricate biology of EVs, their cargo, and their unique ability to modulate cellular processes. It discusses the therapeutic potential of EVs in various diseases, as well as the approaches for the bionanotechnological development of artificial EVs for theranostics. Large-scale EV isolation methods and their preclinical applications are also addressed. It will be useful for undergraduate and graduate students in medicine and cell biology, biologist, and others who are interested in such topic.
