1. Record Nr. UNINA9910847590003321

Titolo	Extracellular Vesicles : From Bench to Bedside / / edited by Qian Wang, Lei Zheng
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2024
ISBN	981-9983-65-7
Edizione	[1st ed. 2024.]
Descrizione fisica	1 online resource (586 pages)
Disciplina	571.65
Soggetti	Medicine - Research Biology - Research Cytology Biological transport Cell membranes Translational Research Cell Biology Membrane Trafficking
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Section 1 EVs biology and function -- Classification and nomenclature of extracellular vesicles -- EVs biogenesis and function -- The mechanism of interaction between extracellular vesicles and target cells -- Biological functions of EVs in various systems -- The role and mechanism of EVs in the process of disease -- Section 2 Technologies and methods for EVs research -- Methods for EV isolation, purification and characterization -- Technologies for the analysis of EV omics -- Flow cytometry for single EV analysis -- Microfluidics-based technologies for EVs research -- Biosensing Technologies for EVs detection -- Technology for EVs surface functionalization -- Technologies for visualization and tracking of EVs -- Methods for EVs function research -- Chemical Biology Investigation of Extracellular Vesicles -- Section 3 EVs biomarker in diseases -- EV biomarker screening and clinical verification -- EVs biomarker for cancer -- EVs biomarker for disease diagnosis -- EVs biomarker for immune disorder -- EVs biomarker for neurological diseases -- EVs biomarker for

infectious disease -- EVs biomarker for renal diseases -- EVs biomarker for thrombosis -- Section 4 EVs for disease therapy and prevention -- Stem cell-derived EVs for disease therapy -- EVs in cancer immunotherapy -- Platelet-derived EVs in disease therapy -- Plant-derived Extracellular Nanovesicles for Disease Therapy -- EVs engineering for therapy -- Other EVs for disease therapy -- EV-based clinical trial -- Section 5 Introduction to the guidelines and resources for EV research -- Introduction to the guidelines for EV research -- Introduction to online nucleic acid database for EV research -- Introduction of systems biology in EV.

Sommario/riassunto

This book aims to provide a comprehensive and systematic understanding of research on extracellular vesicles (EVs). Extracellular vesicles, including exosomes and microvesicles, are nano-sized lipid bilayer encapsulated membranes carrying proteins, lipids, nucleic acids. They are shed by the majority of the cells into the extracellular milieu and present in many biological fluids (blood, urine, saliva, breast milk, cerebrospinal fluid, follicular fluid, semen, lung lavage, and tears). With numerous research publications in recent years, the study of EVs is the emerging field across plenty of disciplines. Many researches and efforts have shown their biogenesis, multiple roles in physiological and pathophysiological processes, and their potential roles as therapeutic agents. The book is organized by outstanding scientists in EV field from the Chinese Society for Extracellular Vesicle (CSEV). It covers the biological basic research of EVs, especially on technologies and methods, as well as the clinical application of EVs as biomarkers for disease diagnosis and therapy.