

1. Record Nr.	UNINA9910831190103321
Titolo	Drug and therapy development for triple negative breast cancer // edited by Pravin Kendrekar, Vinayak Adimule, and Tara Hurst
Pubbl/distr/stampa	Weinheim, Germany : , : WILEY-VCH GmbH, , [2023] ©2023
ISBN	3-527-84116-4 3-527-84118-0
Descrizione fisica	1 online resource (323 pages)
Disciplina	016.22
Soggetti	Breast - Cancer - Treatment
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Intro -- Title Page -- Contents -- Preface -- Part I History of Breast Cancer -- 1 Early-Stage Diagnosis of Breast Cancer: Amelioration in Approaches -- 1.1 Introduction -- 1.2 Imaging Techniques -- 1.2.1 Mammography (MG) -- 1.2.2 Ultrasonography (US) -- 1.2.3 Magnetic Resonance Imaging (MRI) -- 1.3 Microwave Breast Imaging Methods -- 1.3.1 Microwave Tomography -- 1.3.2 Radio-Based Microwave Imaging -- 1.4 Biomarkers and Biosensors for Breast Cancer Detection -- 1.4.1 Biomarkers -- 1.4.2 Biosensors -- 1.5 Conclusion -- Acknowledgment -- Conflict of Interest -- Authors Contribution -- References -- 2 DNA Replication Stress and Genome Instability in Breast Cancer -- 2.1 Introduction -- 2.2 Causes of Replication Stress and Genomic Instability -- 2.2.1 Replication Dysfunction -- 2.2.2 Transcription-Induced Stress -- 2.2.3 Genomic Aberrations and Instability -- 2.3 Molecular Mechanism of Genomic Instability -- 2.3.1 Problems Faced During DNA Damage Repair -- 2.3.2 Transcriptional Stress -- 2.3.3 CIN: Result of Defective Mitosis -- 2.4 Aftermath of Replication Stress on Cell and Its Fate -- 2.4.1 Conservation of Stalled Replication Forks -- 2.4.2 Chromosome Segregation Defect Check by HR Repair -- 2.4.3 Aging, Cell Death, and Senescence -- 2.5 Therapeutic Approach -- 2.6 Conclusion -- Abbreviations -- References -- 3 Recent Advancement of Nanotherapeutics to Treat Breast Cancer -- 3.1 Introduction -- 3.2 Pathophysiology of Breast Cancer -- 3.3 Classification of Breast Cancer

-- 3.4 Techniques for Breast Cancer Detection -- 3.5 Current Breast Cancer Therapies -- 3.6 Nanotherapeutics for Breast Cancer Treatment and Metastasis -- 3.6.1 Nanodiamonds (NDs) -- 3.6.2 Intrinsic Toxicity Reduction -- 3.6.3 Diminishing Chemoresistance (CR) -- 3.6.4 Delivery of Combination Therapeutics Through NDs -- 3.7 Polymer-Based Nanoparticles (PBNPs).
3.8 Inorganic Nanoparticles (IONPs) -- 3.9 Hydrogels (HGLs) and Microbubbles (MBs) -- 3.10 Recent Patents of Nanotherapeutics for Breast Cancer Treatment -- 3.11 Clinical Trials of Nanotherapeutics for Breast Cancer -- 3.12 Conclusion and Future Perspectives --
References -- 4 HER Receptor in Breast Cancer -- 4.1 Introduction -- 4.2 Role of HER Receptors in the Human Body -- 4.3 HER2 Receptor in Breast Cancer Progression -- 4.4 Conclusion -- Conflict of Interest -- References -- 5 Human Endogenous Retroviruses in Triple-Negative Breast Cancer -- 5.1 Introduction -- 5.2 HERVs in Breast Cancer and TNBC -- 5.3 TROJAN IncRNA and TNBC -- 5.4 HERVs and Breast Cancer Treatments -- 5.5 Conclusion -- 5.6 Search Strategy -- References --
Part II Novel Drug Discovery and Development -- 6 Development in Drug Repurposing for the Treatment of Acute Leukemia Complicating Metastatic Breast Cancer -- 6.1 Introduction -- 6.1.1 Acute Leukemia's -- 6.1.2 Mitochondrial cAMP-PKA Signaling -- 6.1.3 Nuclear Compartment -- 6.1.4 Cytosolic Compartment and Plasma Membrane -- 6.2 Conclusion -- Conflict of Interest -- References -- 7 Novel Pharmaceutical Nanomaterials to Advance the Current Breast Cancer Treatment - Current Trends and Future Perspective -- 7.1 Introduction -- 7.2 Graphene-Based Nanomaterials for Breast Cancer -- 7.3 Light-Based Nanotechnology for Breast Cancer -- 7.3.1 Photodynamic Therapeutic Nanomaterials -- 7.3.2 Photothermal Therapeutic Nanomaterials -- 7.4 Green Synthesis of Gold Nanoparticles for Breast Cancer -- 7.5 Nanocarriers for Gene Therapy and Immunotherapy -- 7.6 Conclusion and Recommendations -- References -- Part III Advanced Technologies in Breast Cancer Therapy -- 8 Artificial Intelligence-Driven Decisions in Breast Cancer Diagnosis -- 8.1 Introduction -- 8.2 Breast Cancer -- 8.3 Diagnosis of Breast Cancer -- 8.4 Artificial Intelligence.
8.4.1 Artificial Intelligence and Medical Imaging -- 8.5 Conclusion -- 8.6 Future Challenges -- References -- 9 Establishing Nanotechnology-Based Drug Development for Triple-Negative Breast Cancer Treatment -- 9.1 Introduction -- 9.2 Triple-Negative Breast Cancer -- 9.2.1 Molecular Mechanisms (Signaling Pathways) Involved in TNBC Therapeutics -- 9.2.2 Conventional Therapeutics -- 9.2.3 Promising Nanotechnology Innovations for TNBC Therapy -- 9.2.4 Vaccines Under the Clinical Trial (CT) for TNBC Treatment -- 9.2.5 USFDA-Approved Clinical Trials -- 9.2.6 Current Status of TNBC Treatment -- 9.2.7 Recent Patents Based on Nanoformulations for TNBC Treatment -- 9.3 Challenges -- 9.4 Future Perspectives on TNBC Metastasis Therapy -- 9.4.1 NEO Adjuvant Modeling -- 9.4.2 Execution of In Vivo Genetic Screening -- 9.4.3 Identification of Effective Drugs for TNBC -- 9.4.4 Synergistic Effect of Drugs that Almost Eliminate Tumor -- 9.5 Conclusion -- References -- 10 Etiology and Therapy of Hormone Receptor-Positive Breast Cancer -- 10.1 Introduction -- 10.2 Etiology -- 10.2.1 Role of Estrogen Hormone -- 10.2.2 Role of Progesterone Hormone -- 10.2.3 Estrogen Receptor (ER) -- 10.2.4 Progesterone Receptor (PR) -- 10.3 Human Epidermal Growth Factor-2 (HER-2) -- 10.4 Various Types of Breast Cancer Detected Under Hormone Receptor Breast Cancer -- 10.4.1 Estrogen Receptor (ER) Positive -- 10.4.2 Progesterone Receptor (PR) Positive -- 10.4.3 Hormone Receptor (HR) Negative -- 10.5 Detection -- 10.6 Therapy --

10.6.1 Selective Estrogen-Receptor Response Modulators (SERMs) --
10.6.2 Aromatase Inhibitors -- 10.6.3 Estrogen-Receptor Down
Regulators (ERDs) -- 10.6.4 Luteinizing Hormone-Releasing Hormone
Agents (LHRH) -- 10.7 Limitations of Hormone Therapy -- 10.7.1
Tamoxifen -- 10.7.2 Raloxifene -- 10.7.3 Aromatase Inhibitors --
10.7.4 Fulvestrant.
10.8 Triple-Negative Breast Cancer -- 10.8.1 Clinical History of Triple-
Negative Breast Cancer -- 10.8.2 Imaging Characteristics/Features
of Triple-Negative Breast Cancer -- 10.8.3 Subtypes of TNBC -- 10.8.4
Treatment of Triple-Negative Breast Cancer -- 10.8.5 Advance TNBC --
10.8.6 Pharmacogenomics -- 10.9 Conclusion -- References -- 11
Donor-Acceptor-Based Heterocyclic Compounds as Chemotherapy and
Photothermal Agents in Treatment of Breast Cancer Cell -- 11.1
Introduction -- 11.2 Causes for Breast Cancer -- 11.3 Imaging and
Screening of Breast Cancer -- 11.4 Photothermal Therapy (PTT) -- 11.5
Acceptor-Donor-Based Heterocyclic Compounds -- 11.6 Examples
of Organic-Based Donor-Acceptor -- 11.6.1 Indocyanine -- 11.7
Polymers-Based Agents -- 11.7.1 Phthalocyanine -- 11.8 Conclusion
-- References -- Part IV Regulatory, Clinical Aspects and Case Studies
-- 12 An Insight into Drug Regulatory Affairs and the Procedures --
12.1 Endpoints of Clinical Trials for the Approval of Cancer Drugs and
Biologics -- 12.2 Statutory and Regulatory Requirements
for Effectiveness -- 12.2.1 Endpoints Supporting Previous Oncology
Approvals -- 12.2.2 Endpoints Based on Tumor Assessments -- 12.2.3
Clinical Practice Guideline for the Diagnosis, Staging, and Treatment
of Patients with Metastatic Breast Cancer -- 12.2.4 Cancer Drug and
Diagnostic Regulation by the FDA -- 12.2.5 Considerations for Clinical
Trial Design and Analysis -- 12.2.6 Single-Arm Studies -- 12.2.7
Randomized Studies Designed to Demonstrate Noninferiority -- 12.3
Clinical Trial Design Considerations -- 12.4 Clinical Trial Analysis
Issues -- 12.5 Use of Pathological Complete Response as an Endpoint
to Support Accelerated Approval in Neoadjuvant Treatment of High-
Risk Early-Stage Breast Cancer -- 12.6 Developing Treatments
for Premenopausal Women with Breast Cancer -- 12.7
Recommendations by FDA.
12.7.1 Access to Experimental Cancer Drugs -- 12.7.2 How to Get
a Hold of an Experimental Drug -- 12.7.3 Access to More Information
(Compassionate Use) -- 12.8 What is Right to Try? -- 12.9 Examples
of Drugs Approved for Breast Cancer -- References -- 13 A
Comprehensive Review of Some Heat-Shock Proteins in the
Development and Progression of Human Breast Cancer -- 13.1
Introduction -- 13.1.1 Cancer and Its Economic Burden on Human --
13.2 Structure-Functional Features of HSPs -- 13.2.1 Heat-Shock
Protein 40 -- 13.2.2 Heat-Shock Protein 60 -- 13.2.3 Heat-Shock
Protein 70 -- 13.2.4 Heat-Shock Protein 90 -- 13.3 Conclusion and
Future Perspectives -- Acknowledgments -- References -- 14
Nanoparticle-Based Therapeutics for Triple Negative Breast Cancer --
14.1 Breast Cancer: State of Research and Practice -- 14.2 Triple
Negative Breast Cancer (TNBC) and Treatment Approaches -- 14.3
Nanoparticle Therapeutics for TNBC -- 14.3.1 Metallic Nanoparticles --
14.3.2 Dendrimers -- 14.3.3 Lipid-Based Nanoparticles (LNPs) --
14.3.4 CRISPR Nanoparticles -- 14.3.5 Exosomes (Exo) -- 14.3.6
Nucleic Acid (NA)-Based Therapeutics -- 14.4 Ligands Used to Enhance
Nanoparticle Therapeutics in TNBC -- 14.4.1 Antibodies -- 14.4.2
Peptides -- 14.4.3 Aptamers -- 14.4.4 Small Molecules -- 14.5
Conclusion -- References -- 15 Current Updates in Breast Cancer
Drugs -- 15.1 Introduction -- 15.2 Therapeutic Approaches -- 15.2.1
Hormonotherapy -- 15.2.2 Chemotherapy -- 15.3 Targeted Therapy --

15.3.1 Drug Repurposing -- 15.3.2 HER2 Inhibitors -- 15.3.3 PARP Inhibitors -- 15.3.4 Immunotherapy -- 15.3.5 Others Novel Targets -- 15.4 Conclusion -- Acknowledgment -- Conflict of Interest -- Authors Contribution -- References -- Index -- EULA.
