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Nota di contenuto	Cover -- Title -- Copyright -- End User License Agreement -- Contents -- Preface -- List of Contributors -- Hepatocellular Carcinoma: Diagnosis, Molecular Pathogenesis, Biomarkers, and Conventional Therapy -- Biswajit Mukherjee*, 1, Manasadeepa Rajagopalan2, Samrat Chakraborty1, Prasanta Ghosh1, Manisheeta Ray1, Ramkrishna Sen1 and Iman Ehsan1 -- INTRODUCTION -- CANCER AND ITS TYPES -- Primary Liver Cancer -- Hepatocellular Carcinoma (HCC) -- Intrahepatic Cholangiocarcinoma (Bile Duct Cancer) -- Angiosarcoma and Hemangiosarcoma -- Hepatoblastoma -- Secondary Liver Cancer Surgical Resection in Advanced HCC -- Anatomical Resection -- Laparoscopic Resection of The Liver -- Surgical Resection of Re-Occurring HCC -- Liver Transplantation -- Ablation -- Palliative Treatment -- Embolizing Therapies for HCC -- Transarterial Chemoembolization (TACE) -- Radiotherapy -- Systemic Therapies of HCC -- First-line Therapy -- Second-line Therapy -- Multi-Target Tyrosine Kinase Inhibitors -- Immune Checkpoint Inhibitor -- FUTURE PERSPECTIVES -- CONCLUSIONS -- CONSENT FOR PUBLICATION -- CONFLICT OF INTEREST -- ACKNOWLEDGEMENT -- REFERENCES DETAIL DESCRIPTION OF HCC -- Staging System in HCC -- Risk Factors for HCC -- Pathophysiology of HCC -- Molecular and Cellular Features of the Tumor Microenvironment -- Importance of Cancer Stem Cells in HCC -- Inflammation and HCC -- Oxidative Stress in HCC -- Epithelial-Mesenchymal Transition (EMT) -- Hypoxia and HCC -- Impairment of Cell Cycle in HCC -- Loss of Senescence Control

-- Apoptosis and HCC -- Cellular Signalling Pathways in HCC -- EGF/TGF-a pathway -- Insulin Growth Factor (IGF) Pathway -- HGF/c-Met Pathway -- Signaling Pathways Involved in Neovascularization in HCC -- MAPK Pathways PI3K/Akt/mTOR Pathway -- Signaling Pathways Related to Cell Differentiation and Development -- Wnt-ß Catenin Pathway -- Hedgehog (Hh) Signaling -- Notch Pathway -- Hippo Pathway -- Target Receptor(s) and Biomarker Proteins in HCC -- Asialoglycoprotein Receptor -- Glypican-3 (GPC3) -- Transferrin Receptor (TfR) -- Heat Shock Protein 70 (HSP70) -- Tumor-Associated Glycoprotein-72 (TAG-72) -- Golgi Protein73 (GP73) -- Ki-67 Antigen -- Somatostatin Receptor (SSTR) -- Homodimeric Glycoprotein (AF-20) -- Osteopontin (OPN) -- Des-?-Carboxyprothrombin -- a-Fetoprotein (AFP) Squamous Cell Carcinoma Antigen (SCCA) -- Hepatocyte Paraffin 1 (HepPar1) -- APO-J -- DKK-1 (Dickkopf-p1) -- Human Carbonyl Reductase 2 (HCR2) -- Midkine -- Nerve Growth Factor (NGF) -- Vascular Endothelial Growth Factor (VEGF) -- Transforming Growth Factor-ß (TGF-ß) -- Epidermal Growth Factor (EGFR) -- Hepatocyte Growth Factor (HGF) -- a-1-Fucosidase -- Annexin A2 -- Micro RNA -- Circular RNAs -- Cancer Stem Markers -- CD44 -- CD133 -- CD90 -- Epithelial Cell Adhesion Molecule (EpCAM) -- SURVEILLANCE AND HCC -- TREATMENT STRATEGIES -- Curative Treatments -- Surgical Resection.

Sommario/riassunto

Hepatocellular carcinoma (HCC) is a leading cause of death globally. Conventional chemotherapeutic agents are unable to penetrate cancerous hepatocytes completely and are toxic to non cancerous cells and tissues. This toxicity significantly compromises the therapeutic outcome of conventional chemotherapeutic agents which is also reflected in the high mortality of the disease. Nanotherapeutics have shed new light onto HCC treatment by enabling site-specific in vivo delivery of chemotherapeutics specifically to neoplastic hepatocytes without affecting normal hepatocytes. Thus, nanotherapeutics have shown considerable potential and there is tremendous impetus for rapid translation from the pre-clinical to the clinical domain to significantly prolong the survival in HCC. In Nanotherapeutics for the Treatment of Hepatocellular Carcinoma, authoritative experts of the field have explored the important aspects of nanotherapeutics against HCC. The book exhaustively, vividly and explicitly describes the molecular pathogenesis, diagnostic aspects and nanotherapy of HCC, while also highlighting the challenges of conventional therapy and the benefits of nanotherapeutics. Chapters of the book also cover recent investigations of nanotherapeutics against HCC, types of nanomedicines, recent patents, commercially available nanotherapeutics and a future perspective to give a comprehensive review of the topic to readers. In addition to these defining features, the book provides several references for further reading. The book is an ideal resource on HCC nanotherapeutics for medical and pharmacology postgraduate students, faculties, researchers, and biomedical scientists working on HCC and nanotherapy.