1. Record Nr. UNINA9910254558503321

Titolo	PI3K-mTOR in Cancer and Cancer Therapy / / edited by Nandini Dey, Pradip De, Brian Leyland-Jones
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Humana, , 2016
ISBN	3-319-34211-8
Edizione	[1st ed. 2016.]
Descrizione fisica	1 online resource (XXIV, 294 p. 31 illus. in color.)
Collana	Cancer Drug Discovery and Development, , 2196-9906
Disciplina	616.994071
Soggetti	Cancer - Research Molecular biology Drug resistance Cancer Research Molecular Medicine Drug Resistance
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	PI3K-Akt-mTOR Signaling in Cancer and Cancer Therapeutics -- Part 1: PI3K-mTOR Pathway in Cancers -- The mTOR Complexes in Cancer Cell Metabolism -- PI3K-AKT-mTOR Pathway Co-operates with the DNA Damage Repair Pathway: Carcinogenesis in Triple Negative Breast Cancers and Beyond -- The AKT-mTOR Signaling Pathway for Drug Response Prediction and Prognostic Signatures -- Resistance to PI3K Pathway Inhibition -- Part 2: PI3K-mTOR Pathway in Cancer Medicine -- Combination Therapies Targeting the PI3K/AKT/mTOR Pathways -- Phospho-Inositol-3-Kinase Activity and Dysregulation in Pediatric Leukemia and Lymphoma -- HER2 Signaling Network in Advanced Breast Cancer: Opportunities for Combination Therapies -- The PI3K-mTOR Pathway in Prostate Cancer: Biological Significance and Therapeutic Opportunities.
Sommario/riassunto	In the post human-genome project era, cancer specific genomic maps are redesigning tumor taxonomy by evolving from histopathology to molecular pathology. The success of a cancer drug today is

fundamentally based on the success in identifying target genes that control beneficial pathways. The overwhelming power of genomics and proteomics has enlightened researchers about the fact that the PI3K-mTOR pathway is the most commonly up-regulated signal transduction pathway in various cancers, either by virtue of its activation downstream of many cell surface growth factor receptors or by virtue of its collateral and compensatory circuitry with RAS-MAPK pathway. Oncogenic signaling in the majority of solid tumors is sustained via the PI3K-AKT-mTOR pathway. Because of its prominent role in many cancer types, the PI3K-mTOR pathway has become a major therapeutic target. The volume includes two complementary parts which address the problem of etiology and disease progression and is intended to portray the very basic mechanisms of the PI3K-AKT-mTOR signaling pathway’s involvement in various facets of the cancer, including stem cell renewal, cell metabolism, angiogenesis, genetic instability, and drug resistance. Significant progress has been made in recent years elucidating the molecular mechanism of cancer cell proliferation, angiogenesis, and drug-resistance in relation to the PI3K-mTOR pathway and this volume provides an in-depth overview of recent developments made in this area.