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Titolo	Biotechnology and Production of Anti-Cancer Compounds / / edited by Sonia Malik
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ISBN	3-319-53880-2
Edizione	[1st ed. 2017.]
Descrizione fisica	1 online resource (XV, 328 p. 53 illus., 36 illus. in color.)
Disciplina	631.52 660.6
Soggetti	Plant breeding Cell culture Natural resources Pharmacology Cancer - Research Plant Breeding/Biotechnology Cell Culture Natural Resources Pharmacology/Toxicology Cancer Research
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	Chapter 1 Medicinal Plants: Ethno-Uses to Biotechnology Era -- Chapter 2 How Plants Can Contribute to the Supply of Anti-Cancer Compounds -- Chapter 3 Cancer and Biotechnology: A Matchup that Should Never Slowdown -- Chapter 4 Plant Derived Compounds with Anti-Cancer Properties: From Folklore to Practice -- Chapter 5 Anticancer Drugs from Plants -- Chapter 6 Cambial Meristematic Cells: A Sustainable Platform for the Production of Plant-Derived Anti-Cancer Crugs -- Chapter 7 Family Fabaceae: A Boon for Cancer Therapy -- Chapter 8 Small Cells For Big Ideas: The Cytotoxic Podophyllotoxin And The Long Journey In Discovering Its Biosynthetic Pathway -- Chapter 9 Hairy Root Culture for the Production of Useful Secondary Metabolites

	-- Chapter 10 Edible Mushrooms and Their In Vitro Culture as a Source of Anticancer Compounds -- Chapter 11 Genomics and Artificial Intelligence Working Together in Drugs Discovery and Repositioning: The Advent of Adaptive Pharmacogenomics in Glioblastoma and Chronic Arterial Inflammation Therapies -- Chapter 12 A Multiscale Haemorheological Computer-based Model of Chronic Inflammation: an in-Depth Investigation of Erythrocytes-driven Flow Characteristics in Atheroma Development.
Sommario/riassunto	This book discusses cancers and the resurgence of public interest in plant-based and herbal drugs. It also describes ways of obtaining anti-cancer drugs from plants and improving their production using biotechnological techniques. It presents methods such as cell culture, shoot and root culture, hairy root culture, purification of plant raw materials, genetic engineering, optimization of culture conditions as well as metabolic engineering with examples of successes like taxol, shikonin, ingenol mebutate and podophylotoxin. In addition, it describes the applications and limitations of large-scale production of anti-cancer compounds using biotechnological means. Lastly, it discusses future economical and eco-friendly strategies for obtaining anti-cancer compounds using biotechnology.