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Titolo	Molecular mechanisms and physiology of disease : Implications for Epigenetics and Health / / edited by Nilanjana Maulik, Tom Karagiannis
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Descrizione fisica	1 online resource (510 p.)
Disciplina	572.6 610 611.01816 612
Soggetti	Human physiology Clinical biochemistry Molecular biology Proteins Gene expression Respiratory organs—Diseases Human Physiology Medical Biochemistry Molecular Medicine Protein Science Gene Expression Pneumology/Respiratory System
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index at the end of each chapters.
Nota di contenuto	Epigenetics in Childhood Health and Disease -- Role of Epigenetics in Neural Differentiation: Implications for Health and Disease -- An Overview of Epigenetic Mechanisms in Health and Disease -- Epigenetics: Role of Histone Proteases in Cellular Functions and Diseases -- Anti-inflammatory Effects of Probiotics and their Metabolites – Possible Role for Epigenetic Effects -- Epigenetics of Autoimmune Diseases -- The Effect of Nutrition and Exercise on

Epigenetics and the Development of Cardiovascular Disease -- Epigenetic Events Associated with Obesity and Diabetes -- Molecular Mechanisms in the Development and Progression of Asthma: The Role of Epigenetic Regulation and the Airway Epithelium -- The Significance of Nanoparticles in Medicine and their Potential in Asthma -- One-carbon Metabolism Nutrients and Epigenetics: A Mechanistic Link Between Aberrant One-carbon Metabolism and Cancer Risk? -- Principles of the Warburg Effect and Cancer Metabolism -- Molecular Aspects of the Warburg Effect -- Epigenetic Perturbations in the Context of the Multi-hit Hypothesis of Carcinogenesis -- Epigenetic Mechanisms of Colon Cancer Prevention -- Dietary Antioxidants and Chromatin Modifying Compounds as Potential Anticancer Therapies -- Combination Therapy for Cancer – Phototherapy and HDAC Inhibition -- Nano-base Drug Delivery Modalities for the Treatment of Cancer: The Formulation of Tumour-specific and –targeted Nanoparticles.

Sommario/riassunto

In a simplified form, epigenetics refers to heritable changes in phenotype that are not due to changes in the underlying DNA sequence. In this book, epigenetic mechanisms of regulation and dysregulation in health and disease are explored in great depth. Detailed chapters on epigenetic processes including DNA methylation and chromatin post-translational modifications including potential interventions with DNA methyltransferase inhibitors and histone deacetylase inhibitors are explored in initial chapters. These provide a detailed overview and important background to the entire field. The book is then focussed on epigenetic mechanisms involved in various diseases including anti-inflammatory and autoimmune conditions. Important accounts relating to the effects of epigenetics in metabolic syndrome, cardiovascular disease and asthma are the focus of subsequent chapters. The role of epigenetic dysregulation in malignancy is a current topic of interest and represents an intense field of research. A large component of this book is dedicated to the analysis of aberrant epigenetic processes in carcinogenesis and cancer progression. Further, chapters are focused on emerging cancer prevention using nutritional components and anti-cancer therapies particularly with histone deacetylase inhibitors, which have already been approved for the treatment of cutaneous T-cell lymphoma. The emerging role of nanoparticle preparations, especially in the context of delivering potential epigenetic therapies to target cells in various diseases, is also explored in this book. Overall, this book encompasses a wide range of topics related to epigenetic mechanisms in health and disease and would appeal to anyone with an interest in epigenetics, chromatin biology and emerging epigenetic interventions and therapies.
