

1. Record Nr.	UNINA9910451324003321
Autore	Wodarz Dominik
Titolo	Computational biology of cancer [[electronic resource]] : lecture notes and mathematical modeling // Dominik Wodarz and Natalia Komarova
Pubbl/distr/stampa	Hackensack, NJ, : World Scientific, 2005
ISBN	1-281-89708-6 9786611897086 981-270-136-2
Descrizione fisica	1 online resource (266 p.)
Altri autori (Persone)	KomarovaNatalia L
Disciplina	616.99/4/00724
Soggetti	Cancer - Mathematical models Cancer - Research Electronic books.
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.
Nota di contenuto	Preface; Contents; Chapter 1 Cancer and somatic evolution; Chapter 2 Mathematical modeling of tumorigenesis; Chapter 3 Cancer initiation: one-hit and two-hit stochastic models; Chapter 4 Microsatellite and chromosomal instability in sporadic and familial cancers; Chapter 5 Cellular origins of cancer; Chapter 6 Costs and benefits of chromosomal instability; Chapter 7 DNA damage and genetic instability; Chapter 8 Tissue aging and the development of cancer; Chapter 9 Basic models of tumor inhibition and promotion; Chapter 10 Mechanisms of tumor neovascularization Chapter 11 Cancer and immune responsesChapter 12 Therapeutic approaches: viruses as anti-tumor weapons; Appendix A Exact formula for total probability of double mutations; Bibliography; Index
Sommario/riassunto	The book shows how mathematical and computational models can be used to study cancer biology. It introduces the concept of mathematical modeling and then applies it to a variety of topics in cancer biology. These include aspects of cancer initiation and progression, such as the somatic evolution of cells, genetic instability, and angiogenesis. The book also discusses the use of mathematical models for the analysis of therapeutic approaches such as chemotherapy, immunotherapy, and

the use of oncolytic viruses.
