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Nota di contenuto	Preface ; About the Editor ; Contents; Contributors; Chapter-1; Targeted Cancer Therapy: History and Development of Immunotoxins; 1.1 Introduction; 1.2 Chemotherapy; 1.3 Cancer Immunotherapy; 1.3.1 Antibodies in Cancer Therapy; 1.3.2 Tumor Antigens; 1.3.3 Antibodies for the Clinic; 1.3.4 Antibodies as Carriers; 1.4 Immunotoxins in Cancer Therapy; 1.4.1 Targeting Moiety; 1.4.2 Toxins in Cancer Immunotherapy; 1.5 Construction of an Immunotoxin; 1.6 Internalization and Cytotoxic Activity of Immunotoxins; 1.7 Immunotoxins in Clinical Study; 1.8 Conclusions; References; Chapter-2 Immunotoxins, Resistance and Cancer Stem Cells: Future Perspective2. 1 Introduction; 2.2 Factors Responsible for Cancer Resistance; 2.2.1 Gene Mutations in Signalling Pathways; 2.2.2 Drug Transporters; 2.2.3 Tumor Microenvironment and Accessibility; 2.3 Resistance to Immunotoxins; 2.3.1 Dysfunctional Apoptotic Pathways; 2.3.2 ABC Transporters; 2.3.3 Lysosomal Degradation; 2.3.4 Other Factors; 2.4 Cancer Stem Cells and Resistance; 2.4.1 Drug Efflux; 2.4.2

Detoxification and Cellular Repair; 2.4.3 DNA Repair and Modification; 2.4.4 Survival Pathways; 2.4.5 Autophagy and EMT; 2.4.6 Quiescence 2.4.7 Microenvironment 2.5 Strategies Used to Overcome Resistance; 2.5.1 Inhibitors of Anti-apoptotic Proteins; 2.5.2 Blocking Membrane Drug Transporters; 2.5.3 Delivery and Intracellular Trafficking; 2.5.4 Inhibition of DNA Repair and Telomerase Activity; 2.5.5 Combination Therapy; 2.5.6 Nanotechnology; 2.5.7 Other Novel Strategies; 2.6.1 Targeting Signaling Pathways in CSC's; 2.6 Targeting Cancer Stem Cells; 2.6.2 Targeting Apoptosis and Cellular Repair Mechanisms in CSC's; 2.6.3 Targeting Autophagy and Microenvironment in CSC's; 2.6.4 Targeting Membrane Transporters and CSC Surface Markers 2.7 ConclusionReferences; Chapter-3; Factors that Determine Sensitivity and Resistances of Tumor Cells Towards Antibody-Targeted Protein Toxins; 3.1 Introduction; 3.2 Intoxication Pathways Define Determinants for Sensitivity and/or Resistances of Tumor Cells Towards Immunotoxins; 3.3 Step 1-Access to Target Cells: Immunogenicity can be a Relevant Factor for Immunotoxin Therapy; 3.4 Step 2-Target Cell Binding: Loss or Reduction of Target Antigens Reduce Sensitivity of Tumor Cells Towards Targeted Toxins 3.5 Step 3-Entry of Toxins into Cells: Loss of Processing Enzymes and Modulation of Vesicular Compartments Reduce Toxin Activity in Cultured Cells3.6 Step 4-ADP-Ribosylation of eEF2: Reduced or Altered Expression of Diphthamide Synthesis Genes is Associated with Immunotoxin Resistances; 3.7 Step 5-Signaling and Apoptosis: Protective Factors and Pathways can Reduce Toxin Sensitivity; 3.8 Conclusions and Outlook; References; Chapter-4; Cell Signaling and Resistance to Immunotoxins; 4.1 Introduction; 4.2 Conceptual Considerations on Cellular Immunotoxin Resistance 4.2.1 Alteration of Immunotoxin Resistance via Modulation of Caspase Activation Pathways

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## Sommario/riassunto

This volume is a guide to understanding resistance against targeted therapeutic approaches for cancer using immunotoxins. It contains a detailed review of the history and development of targeted therapy. As well, it includes an in-depth description of the molecular and cellular mechanisms involved in cancer resistance and several novel methods to overcome resistance. Each chapter discusses different aspects of resistance and covers all the factors that may contribute to resistance in cancer cells. Finally, this volume highlights the recent findings and advances associated with tackling cancer resistance.

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