

Cancer Drug Discovery and Development

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Gene and Cellular Immunotherapy for Cancer

 Humana Press

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Preface

Genetically modified cellular immunotherapies and T-cell bispecifics are changing the landscape of cancer treatment. Approval of five CAR-T products and a T-cell engager by the US Food and Drug Administration (FDA) for hematologic malignancies represents the start of a wave of cellular therapies that will dramatically change how we treat cancer in the near future. These advances have resulted in a high level of enthusiasm among scientific community, clinicians, and industry for developing effective immunotherapies for hematological malignancies and solid tumors. This book will cover two broad categories of gene and cellular therapies: (1) Cellular-based immunotherapies: CAR-T, TCR-T, TIL, viral CTLs, NK cells; (2) T/NK cell engagers including BiTEs, DARTs, TanAbs, and others. The first two chapters present a review of the biologic basis of innate and adaptive immunity and a history of cellular therapy. We then review each treatment category comprehensively covering the whole spectrum of the bench to bedside preclinical and clinical studies. There is a substantial emphasis on CAR-T therapies followed by chapters focused on regulatory aspects of gene and cellular immunotherapy, manufacturing including point-of-care manufacturing of genetically modified cellular therapies and a roadmap to outpatient cellular therapy. This book provides a comprehensive source for readers involved in or interested in the nuts and bolts of gene and cellular therapies. We have prepared this book as a comprehensive review in a single volume for trainees and basic and clinical researchers in academic centers and the industry. In light of the rapid evolution of this field, we are planning to update this book every 4 years.

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