

## Preface

Recent investigations in cancer immunology have yielded important insights into the host-tumor relationship. The development of genetic and biochemical strategies to identify cancer antigens has led to the realization that most tumor-bearing hosts mount innate and adaptive antitumor responses. While these endogenous reactions play a decisive role in shaping the immune characteristics of cancer cells, the formation of clinically evident tumors indicates a failure of host defense. The mechanisms underlying tumor escape have begun to be clarified, however, and this knowledge in turn has created a framework for devising therapeutic schemes that overcome specific immune defects. The clinical activity of human monoclonal antibodies and donor lymphocyte infusions highlights the ability of adaptive immune effector pathways to mediate therapeutic benefits.

In this volume of *Advances in Immunology*, nine groups of investigators working in murine and/or human systems contribute their perspectives on many key problems in cancer immunology. Smyth, Dunn, and Schreiber discuss the impact of endogenous responses on tumor formation, highlighting the ability of host immunity to sculpt the phenotypes of emerging tumor cells. Drake, Jaffee, and Pardoll analyze the pathways of immune escape and illustrate the ways in which unresolved inflammation promotes disease progression. Waldmann and Morris review the therapeutic efficacy of monoclonal antibodies and chimeric proteins in diverse human cancers. Wu and Ritz detail the immune mechanisms involved in the curative effects of allogeneic bone marrow transplantation for hematologic malignancies. Cavallo and colleagues discuss the formulation of prophylactic and therapeutic cancer vaccinations in murine models. Uchi and associates examine the interplay of cancer immunity and autoimmunity using malignant melanoma as a model system. Slingluff and colleagues describe the identification and therapeutic applications of peptides derived from melanoma differentiation antigens. Korman, Peggs, and Allison explore the manipulation of T-cell activation checkpoints as a strategy for cancer immunotherapy. Hodi and Dranoff discuss combinatorial treatments that couple dendritic cell maturation and inhibition of negative immune regulation.

Together, these reviews provide a broad assessment of the current state of research in cancer immunology. We hope that this volume will serve as a useful resource to both students and investigators and help stimulate new efforts aimed at actualizing the considerable potential of cancer immunotherapy.

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