
Preface

The tumor microenvironment includes the cellular and noncellular constituents that surround and support tumor cells. This includes fibroblasts, blood vessels, innate and adaptive immune cells along with secreted signaling molecules, extracellular vesicles, and components of the extracellular matrix. Indeed, extensive research has firmly established an instrumental role for the tumor microenvironment in supporting cancer initiation, dormancy, progression, and metastatic spread.

This book covers core and emerging in vitro and in vivo protocols that are used to study how various components of the tumor microenvironment are established and subsequently interact with tumor cells to facilitate carcinogenesis. In addition, the book displays research topics including cellular and molecular biology approaches, in vivo genetic approaches, various “omics”-based strategies, therapeutic strategies to target the microenvironment, and, finally, advanced techniques in the fields of tissue engineering and nanotechnology. Written and validated in the laboratories of a number of trusted collaborating authors, these protocols should facilitate further studies in this exciting field.

Thus, this protocol book constitutes a compendium of techniques now available to a broad audience including basic and clinician scientists, systems biologists, and biological engineers.

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The Tumor Microenvironment

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