

METHODS IN MOLECULAR BIOLOGY

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Cancer Cell Signaling

Methods and Protocols

Second Edition

Edited by

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Preface

The aim of this book, “Cancer Cell Signaling: Methods and Protocols Second Edition,” is to bring together the most recent advances in cancer cell signaling knowledge with the recent progress in the development of novel strategies and experimental cell models to study human cancer. This area has exploded over the last years with the identification of tumor-initiating cancer stem cells, with the identification of intensive interactions of oncogenic signaling pathways with tumor cell metabolism, and with the identification of epigenetic changes associated with tumor initiation and progression. More recently, other discoveries, such as the property of cancer cells to communicate between themselves via extracellular vesicles, or that long noncoding RNAs play key regulatory roles in cancer biology, have also contributed to this explosion. The accumulated experimental evidence in all these topics has begun to show significant effects on approaches to study cancer: new technologies are being developed to exploit this knowledge that surely will have a profound impact in cancer prevention and treatment.

The book is a suite of reviews and protocols written by a team of acknowledged researchers and covers some of these hot topics in cancer cell signaling. It is organized into four parts: Part I is concerned with targeting cancer cell metabolism as an anticancer strategy. Part II contains an overview of the interdependency between genetic and epigenetic regulatory effects in cancer and several protocols to study epigenetic control of cancer. In Part III, the reader will be introduced to the theme of metastasis promotion with a review of microvesicles as mediators of intercellular communication in cancer, followed by a set of protocols to study cancer metastasis. Finally, in Part IV, two new techniques for cancer study are described.

I would like to acknowledge and thank all authors for their valuable contributions, particularly for sharing with the readers all hints, tips, and observations that one learns from using a method regularly. I also thank Dr. John Walker for his technical guidance and support.

México D.F., México

Martha Robles-Flores, Ph.D.

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