
Preface

Little is known regarding the factors that regulate entry of residual cancer into a dormant state or the subsequent reinitiation of growth. The prognostic factors present in the primary tumor are imprecise in predicting which patients will be cured by local treatment and which patients will have metastatic recurrence.

Although much progress has been made in identifying many of the genetic factors that contribute to cancer development, much remains to be learned about genetic and epigenetic factors that influence both tumor dormancy and the growth of metastasis. A majority of us have in situ tumors that may remain dormant or may progress into a lethal form of cancer; the former are prevented from recruiting their own blood supply.

This is volume 2 of the multivolume series discussing Tumor Dormancy, Quiescence, and Cellular Senescence. The role of tumor dormancy in a number of diseases, including breast cancer, melanoma, prostate cancer, liver cancer, and lung cancer is discussed. It is also pointed out that quiescent state regulates hematopoietic stem cells and muscle stem cells. The mediation of reversible quiescent state in a subset of ovarian, pancreatic, and colon cancers by the kinase is detailed. Molecular mechanisms underlying stress-induced cellular senescence and accumulation of reactive oxygen species and induction of premature senescence are presented. The importance of the role of microRNASE in oxidative stress-induced apoptosis and senescence and the effect of microRNA as a modulator of cell proliferation in lung cancer are detailed. Suppression of cellular senescence in glioblastoma brain tumor is also explained.

By bringing together a large number of experts (oncologists, neurosurgeons, physicians, research scientists, and pathologists) in various aspects of this medical field, it is my hope that substantial progress will be made against a terrible human disease and injury. It is difficult for a single author to discuss effectively the complexity of diagnosis, therapy, including tissue regeneration. Another advantage of involving more than one author is to present different points of view on a specific controversial aspect of cancer cure and tissue regeneration. I hope these goals will be fulfilled in this and other volumes of the series. This volume was written by 70 contributors representing 11 countries. I am grateful to them for their promptness in accepting my suggestions. Their practical experience highlights their writings, which should build and further the endeavors of the readers in these important areas of disease and injury. I respect and appreciate the hard work and exceptional insight into the role of

dormancy, quiescence, and cellular senescence in various diseases and stem cell functions provided by these contributors. The contents of the volume are divided into three parts: Dormancy, Quiescence, and Cellular Senescence for the convenience of the readers.

It is my hope that subsequent volumes of the series will join this volume in assisting in the more complete understanding of the major human diseases and their treatments. There exists a tremendous, urgent demand by the public and the scientific community to address to cancer diagnosis, treatment, cure and hopefully prevention. In the light of existing cancer calamity, government funding must give priority to eradicating deadly malignancies over military superiority.

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