Angiogenesis Protocols

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Edited by

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Humana Press

Totowa, New Jersey

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999 Riverview Drive, Suite 208
Totowa, New Jersey 07512

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This publication is printed on acid-free paper.

ANSI Z39.48-1984 (American Standards Institute) Permanence of Paper for Printed Library Materials.

Cover design by Patricia F. Cleary.

Production Editor: John Morgan

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Printed in the United States of America. 10 9 8 7 6 5 4 3 2 1

Library of Congress Cataloging-in-Publication Data

Preface

In the last few years, we have been deluged with information on angiogenesis. Scientists and the public at large are exposed daily to this “new” science, not just in specialist journals and texts, but in the tabloid press, where popular articles refer to angiogenic therapies as magic bullets and miracle cures for cancer, arthritis, retinopathies, heart disease, and circulatory problems. Is there no ill this approach will not cure? The fact that so much time, effort, and resource have been and continue to be dedicated to this new science is clear testament to its importance. Yet many fundamental aspects of angiogenesis remain poorly understood, in particular cues that activate the process. This fact has to some extent been masked behind a surfeit of fine detail; we can’t see the wood for the trees. Most studies of angiogenesis identify single links in a long chain of events. Furthermore, each study is itself hampered by the limitations of the biological end-point chosen. For instance, though endothelial proliferation may well be necessary for angiogenesis, it is not sufficient. Therefore, measuring endothelial proliferation in response to a novel growth factor, and on the basis of this observation, stating that the factor is “angiogenic,” is unsound logic. It is important that researchers in this field, and perhaps more importantly those experimenting at its periphery, recognize the limitations of their chosen biological end-points.

The appearance of *Angiogenesis Protocols*, which brings together many currently used assays of angiogenesis, is therefore timely. We believe this work represents a new and important resource for scientists, which will prove valuable not only to those already involved in, and familiar with, the complex field of angiogenesis, but also to those for whom this is new territory. Some of those individuals may be a little intimidated at the prospect of setting up “meaningful” assays. This text should help to allay those fears, providing easy access to a variety of angiogenesis assays likely to suit laboratories with differing technical expertise and material and, most important, financial resources. We have intentionally included a range of in-vitro assays where low cost, ease-of-use, and reproducibility are paramount. However, we have also recognized the need for clearly documented access to “cutting-edge” in-vivo models, such as the dorsal window chamber, that demand high levels of surgical skill as well as relatively expensive, custom-made equipment.

We hope you find *Angiogenesis Protocols* instructive and useful.

J. Clifford Murray

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