

CONTENTS

First Edition Preface	vii
Preface	xi
Contributors	xiii
1. DISCOVERY OF GREEN FLUORESCENT PROTEIN	1
<i>Osamu Shimomura</i>	
2. PHOTONS FOR REPORTING MOLECULAR EVENTS: GREEN FLUORESCENT PROTEIN AND FOUR LUCIFERASE SYSTEMS	15
<i>J. Woodland Hastings and James G. Morin</i>	
3. BIOCHEMICAL AND PHYSICAL PROPERTIES OF GREEN FLUORESCENT PROTEIN	39
<i>William W. Ward</i>	
4. THE THREE-DIMENSIONAL STRUCTURE OF GREEN FLUORESCENT PROTEIN AND ITS IMPLICATIONS FOR FUNCTION AND DESIGN	67
<i>George N. Phillips, Jr.</i>	
5. MOLECULAR BIOLOGY AND MUTATION OF GREEN FLUORESCENT PROTEIN	83
<i>David A. Zacharias and Roger Y. Tsien</i>	
6. DISCOVERY AND PROPERTIES OF GFP-LIKE PROTEINS FROM NONBIOLUMINESCENT ANTHOZOA	121
<i>Konstantin A. Lukyanov, Dmitry M. Chudakov, Arkady F. Fradkov, Yulii A. Labas, Mikhail V. Matz, and Sergey Lukyanov</i>	
7. EVOLUTION OF FUNCTION AND COLOR IN GFP-LIKE PROTEINS	139
<i>Mikhail V. Matz, Yulii A. Labas, and Juan Ugalde</i>	
8. THE USES OF GREEN FLUORESCENT PROTEIN IN PROKARYOTES	163
<i>Raphael H. Valdivia, Brendan P. Cormack, and Stanley Falkow</i>	
9. THE USES OF GREEN FLUORESCENT PROTEIN IN YEASTS	179
<i>Amy L. Hitchcock, Jason A. Kahana, and Pamela A. Silver</i>	

10. USES OF GFP IN <i>CAENORHABDITIS ELEGANS</i>	203
<i>Oliver Hobert and Paula Loria</i>	
11. GREEN FLUORESCENT PROTEIN APPLICATIONS IN <i>DROSOPHILA</i>	227
<i>Tulle Hazelrigg and Jennifer H. Mansfield</i>	
12. THE USES OF GREEN FLUORESCENT PROTEIN IN PLANTS	259
<i>Jim Haseloff and Kriby R. Siemering</i>	
13. USES OF GFP IN TRANSGENIC VERTEBRATES	285
<i>Sean Magason, Adam Amsterdam, Nancy Hopkins, and Shuo Lin</i>	
14. THE USES OF GREEN FLUORESCENT PROTEIN IN MAMMALIAN CELLS	305
<i>Theresa H. Ward and Jennifer Lippincott-Schwartz</i>	
15. PRACTICAL CONSIDERATIONS FOR USE OF REEF CORAL FLUORESCENT PROTEINS IN MAMMALIAN CELLS: APPLICATIONS IN FLUORESCENCE MICROSCOPY AND FLOW CYTOMETRY	339
<i>Yu Fang, Olivier Déry, Michael Haugwitz, Pierre Turpin, and Steven R. Kain</i>	
16. PHARMACEUTICAL APPLICATIONS OF GFP AND RCFP	361
<i>Nicola Bevan and Stephen Rees</i>	
17. REASSEMBLED GFP: DETECTING PROTEIN-PROTEIN INTERACTIONS AND PROTEIN EXPRESSION PATTERNS	391
<i>Thomas J. Magliery and Lynne Regan</i>	
Methods and Protocols	407
<i>Steven R. Kain</i>	
Index	423