

METHODS IN MOLECULAR BIOLOGY™

Series Editor
John M. Walker
School of Life Sciences
University of Hertfordshire
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Gene Therapy of Cancer

Methods and Protocols

Second Edition

Edited by

Wolfgang Walther and Ulrike S. Stein

Max-Delbrück-Center for Molecular Medicine, Berlin, Germany

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Editors

Wolfgang Walther
Max-Delbrück-Center for Molecular Medicine
Berlin, Germany

Ulrike S. Stein
Max-Delbrück-Center for Molecular Medicine
Berlin, Germany

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Preface

When the first edition of *Gene Therapy of Cancer* as part of the series *Methods in Molecular Medicine* series was released in 1999/2000, this research field was still filled with euphoric moments and great expectations for almost unlimited success. Due to decisive drawbacks in clinical use of gene therapy, the voices of those demanding gene therapy go back to the benches became more intense. In fact, during the last decade many important issues for gene therapy, including cancer gene therapy, have been investigated with great efforts to ameliorate vector safety, transfer efficiency, improve vector targeting, find more effective and specific therapeutic genes, etc. In parallel, numerous gene regulatory issues have evolved and been enhanced for the benefit of patients treated with gene therapy. Because gene therapy of cancer is still the field of greatest efforts, representing more than 60% of all gene therapy trials, this field has accumulated a tremendous amount of preclinical, and, more importantly, of clinical data. Such increment in gene therapeutic experience did promote and will further accelerate the development of cancer gene therapy into a safe and clinically applicable treatment option.

This second edition was facing the difficulty of potentially being just one more of those countless books aiming at some coverage of cancer gene therapy. However, the editors felt the responsibility to create something slightly different. Therefore, contributions were selected that cover both experimental and clinical approaches to cancer gene therapy. These were carefully chosen with special emphasis on presentation of established and, more importantly, novel protocols to at least in part reflect all of the efforts made for the improvement of cancer gene therapy. Furthermore, this edition provides state-of-the-art overviews of new concepts and strategies in cancer gene therapy.

Because regulatory and ethical issues are of pivotal importance for clinical gene therapy, these topics are acknowledged for their impact in the field as separate chapters in this new edition. Furthermore, the inclusion of chapters that cover the developments, problems, and possible limitations of design and production of gene therapeutics for the clinic broaden the insights into the very complex field of cancer gene therapy, also comprising such translational issues.

Taken together, this second edition has been developed with the intent of providing more than merely a remake of the first edition of the book. This edition has been made for those who are working in the field and are strongly interested in receiving an interesting, spotlighted overview of nonviral, viral, experimental, and clinical cancer gene therapy. In parallel, this edition certainly also addresses those who are interested in the field and are willing to dig into this exciting research area.

The editors thank all contributors for their valuable chapters, which will further stimulate the interest of the readers in the field of cancer gene therapy.

Wolfgang Walther and Ulrike S. Stein

Contents

<i>Preface</i>	<i>v</i>
<i>Contributors</i>	<i>xi</i>
SECTION I: EXPERIMENTAL APPROACHES IN CANCER THERAPY	
SUBSECTION A: INTRODUCTION	
1 The Development of Gene Therapy: From Monogenic Recessive Disorders to Complex Diseases Such as Cancer	5
<i>Jean-Pierre Gillet, Benjamin Macadangdang, Robert L. Fathke, Michael M. Gottesman, and Chava Kimchi-Sarfaty</i>	
SUBSECTION B: VECTOROLOGY FOR CANCER GENE THERAPY	
2 Designing Adenoviral Vectors for Tumor-Specific Targeting	57
<i>Ramon Alemany</i>	
3 Analysis of HSV Oncolytic Virotherapy in Organotypic Cultures.	75
<i>Giulia Fulci and Brent Passer</i>	
4 Use of Minicircle Plasmids for Gene Therapy	87
<i>Peter Mayrhofer, Martin Schleef, and Wolfgang Jechlinger</i>	
5 Transposable Elements as Plasmid-Based Vectors for Long-Term Gene Transfer into Tumors	105
<i>John R. Ohlfest, Zoltán Ivics, and Zsuzsanna Izsvák</i>	
6 Designing Plasmid Vectors	117
<i>Oleg Tolmachov</i>	
7 Development of Bacterial Vectors for Tumor-Targeted Gene Therapy.	131
<i>Li-Jun Jia and Zi-Chun Hua</i>	
SUBSECTION C: NONVIRAL TRANSFER TECHNOLOGIES IN CANCER GENE THERAPY	
8 Electroporative Gene Transfer	157
<i>Marco Schmeer</i>	
9 Gene Gun Delivery Systems for Cancer Vaccine Approaches	167
<i>Kandan Aravindaram and Ning Sun Yang</i>	
10 Ultrasound-Mediated Gene Transfection	179
<i>Loreto B. Feril Jr.</i>	
11 Nonviral Jet-Injection Technology for Intratumoral In Vivo Gene Transfer of Naked DNA.	195
<i>Wolfgang Walther, Iduna Fichtner, Peter M. Schlag, and Ulrike S. Stein</i>	

SUBSECTION D: EXPERIMENTAL STUDIES IN CANCER GENE THERAPY

- 12 Methods for Constructing and Evaluating Antitumor DNA Vaccines 211
Brian M. Olson and Douglas G. McNeel
- 13 Immunity of Lentiviral Vector-Modified Dendritic Cells 245
Shubong Han and Lung-Ji Chang
- 14 Saporin Suicide Gene Therapy 261
Natasa Zarovni, Riccardo Vago, and Maria Serena Fabbrini
- 15 Using In Vivo Biopanning for the Development of Radiation-Guided Drug Delivery Systems 285
Jerry J. Jaboin, Zhaozhong Han, and Dennis E. Hallaban
- 16 Chemosensitization of Tumor Cells: Inactivation of Nuclear Factor-Kappa B Associated with Chemosensitivity in Melanoma Cells After Combination Treatment with E2F-1 and Doxorubicin 301
Hongying Hao, H. Sam Zhou, and Kelly M. McMasters
- 17 Induction of Tumor Cell Apoptosis by TRAIL Gene Therapy. 315
Thomas S. Griffith
- 18 Silencing Epidermal Growth Factor Receptor by RNA Interference in Glioma. 335
Chunsheng Kang, Peiyu Pu, and Hao Jiang
- 19 Delivery of Phosphorodiamidate Morpholino Antisense Oligomers in Cancer Cells 351
Gayathri R. Devi
- 20 Use of RNA Aptamers for the Modulation of Cancer Cell Signaling 363
Sunjoon Jeong, Hee Kyu Lee, and Mee Young Kim
- 21 G-Rich Oligonucleotides for Cancer Treatment 379
Paula J. Bates, Enid W. Choi, and Lalitha V. Nayak

SECTION II: CLINICAL APPROACHES IN CANCER GENE THERAPY

SUBSECTION A: REQUIREMENTS FOR CLINICAL GENE THERAPY TRIALS

- 22 Regulatory Aspects for Translating Gene Therapy Research into the Clinic 397
Carolyn M. Laurencot and Sheryl Ruppel
- 23 Ethics of Cancer Gene Transfer Clinical Research 423
Jonathan Kimmelman
- 24 Virus Production for Clinical Gene Therapy 447
Tiago Vicente, Cristina Peixoto, Manuel J.T. Carrondo, and Paula M. Alves
- 25 Production of Plasmid DNA as Pharmaceutical. 471
Martin Schleaf and Markus Blaesen

SUBSECTION B: CLINICAL PROTOCOLS IN CANCER GENE THERAPY

- 26 Gene Immunotherapy for Non-Small Cell Lung Cancer 499
John J. Nemunaitis

27	Gene Therapy for Antitumor Vaccination	515
	<i>Seunghee Kim-Schulze and Howard L. Kaufman</i>	
28	HSV-tk/IL-2 Gene Therapy for Glioblastoma Multiforme	529
	<i>Luisa Barzon, Monia Pacenti, Elisa Franchin, Federico Colombo, and Giorgio Palù</i>	
29	Construction and Characterization of an Oncolytic HSV Vector Containing a Fusogenic Glycoprotein and Prodrug Activation for Enhanced Local Tumor Control	551
	<i>Guy R. Simpson and Robert S. Coffin</i>	
30	Newcastle Disease Virus: A Promising Vector for Viral Therapy, Immune Therapy, and Gene Therapy of Cancer	565
	<i>Volker Schirrmacher and Philippe Fournier</i>	
31	Oncolytic Viral Therapy Using Reovirus.	607
	<i>Chandini Thirukkumaran and Don G. Morris</i>	
32	Design and Testing of Novel Oncolytic Vaccinia Strains	635
	<i>Steve H. Thorne</i>	
33	Tumor-Targeted <i>Salmonella typhimurium</i> Overexpressing Cytosine Deaminase: A Novel, Tumor-Selective Therapy	649
	<i>Ivan King, Martina Ittersson, and David Bermudes</i>	
34	Chemoprotection by Transfer of Resistance Genes	661
	<i>Tulin Budak-Alpdogan and Joseph R. Bertino</i>	
35	Phase I Clinical Trial of Locoregional Administration of the Oncolytic Adenovirus ONYX-015 in Combination with Mitomycin-C, Doxorubicin, and Cisplatin Chemotherapy in Patients with Advanced Sarcomas	705
	<i>Mateusz Opyrchal, Ileana Aderca, and Evanthia Galanis</i>	
	<i>Index</i>	719

Contributors

- ILEANA ADERCA • *Division of Medical Oncology, Mayo Clinic, Rochester, MN, USA*
- RAMON ALEMANY *Translational Research Laboratory, Catalan Institute of Oncology, L'Hospitalet de Llobregat, Barcelona, Spain*
- PAULA M. ALVES • *Instituto de Biologia Experimental e Tecnológica (IBET) and Instituto de Tecnologia Química e Biológica – UNL (ITQB-UNL), Oeiras, Portugal*
- KANDAN ARAVINDARAM • *Agricultural Biotechnology Research Center, Academia Sinica, Nankang, Taipei, Taiwan, Republic of China*
- LUISA BARZON • *Department of Histology, Microbiology and Medical Biotechnologies, University of Padova, Padova, Italy*
- PAULA J. BATES • *University of Louisville, Louisville, KY, USA*
- DAVID BERMUDEZ • *Celator Pharmaceuticals Corp., Vancouver, BC, Canada*
- JOSEPH R. BERTINO • *Departments of Medicine and Pharmacology, The Cancer Institute of New Jersey, Robert Wood Johnson Medical School, University of Medicine & Dentistry of New Jersey, New Brunswick, NJ, USA*
- MARKUS BLAESSEN • *PlasmidFactory GmbH & Co KG, Bielefeld, Germany*
- TULIN BUDAK-ALPDOGAN • *Departments of Medicine and Pharmacology, The Cancer Institute of New Jersey, Robert Wood Johnson Medical School, University of Medicine & Dentistry of New Jersey, New Brunswick, NJ, USA*
- MANUEL J. T. CARRONDO • *Instituto de Biologia Experimental e Tecnológica (IBET) and Instituto de Tecnologia Química e Biológica-UNL (ITQB-UNL), Oeiras, Portugal*
- LUNG-JI CHANG • *Department of Molecular Genetics and Microbiology, Powell Gene Therapy Center and McKnight Brain Institute, University of Florida, College of Medicine, Gainesville, FL, USA*
- ENID W. CHOI • *Department of Biochemistry & Molecular Biology, Brown Cancer Center, University of Louisville, Louisville, KY, USA*
- ROBERT S. COFFIN • *Biovex, Inc., Woburn, MA, USA*
- FREDDERICO COLOMBO • *Division of Neurosurgery, Robotic Radiosurgery Unit, San Bortolo Hospital, Vicenza, Italy*
- GAYATHRI R. DEVI • *Comprehensive Cancer Center, Duke University Medical Center, Durham, NC, USA*
- MARIA S. FABBRINI • *Istituto Biologia Biotecnologia Agraria, IBBA, National Research Council, CNR, Milano, Italy 208*
- ROBERT L. FATHKE • *Center for Biologics Evaluation and Research, Food and Drug Administration, Bethesda, MD, USA*
- LORETO B. FERIL, JR. • *Department of Anatomy, Fukuoka University School of Medicine, Fukuoka City, Fukuoka, Japan*
- IDUNA FICHTNER • *Max-Delbrück-Center for Molecular Medicine, Berlin, Germany*
- ELISA FRANCHIN • *Department of Histology, Microbiology and Medical Biotechnologies, University of Padova, Padova, Italy*

- GIULIA FULCI • *Brain Tumor Research Center, Simches Research Building, Neurosurgery Service, Massachusetts General Hospital, Boston, MA, USA*
- PHILIPPE FOURNIER • *German Cancer Research Center (DKFZ), Heidelberg, Germany*
- EVANTIA GALANIS • *Division of Medical Oncology and Department of Molecular Medicine, Mayo Clinic, Rochester, MN, USA*
- JEAN-PIERRE GILLET • *Laboratory of Cell Biology, National Cancer Institute, National Institutes of Health, Bethesda, MD, USA*
- MICHAEL M. GOTTESMAN • *Laboratory of Cell Biology, National Cancer Institute, National Institutes of Health, Bethesda, MD, USA*
- THOMAS S. GRIFFITH • *Department of Urology, University of Iowa, Iowa City, IA, USA*
- DENNIS E. HALLAHAN • *Department of Radiation Oncology, Department of Developmental and Cell Biology, Department of Cancer Biology, School of Medicine, Vanderbilt University, Nashville, TN, USA; Vanderbilt-Ingram Cancer Center, Nashville, TN, USA*
- SHUHONG HAN • *Department of Molecular Genetics and Microbiology, Powell Gene Therapy Center and McKnight Brain Institute, University of Florida, College of Medicine, Gainesville, FL, USA*
- ZHAOZHONG HAN • *Department of Radiation Oncology, Vanderbilt University, Nashville, TN, USA; Vanderbilt-Ingram Cancer Center, Nashville, TN, USA*
- HONGYIN HAO • *Surgical Oncology, University of Louisville, Louisville, KY, USA*
- ZI-CHUN HUA • *The State Key Laboratory of Pharmaceutical Biotechnology and Department of Biochemistry, College of Life Sciences, Nanjing University, Nanjing, P. R. China*
- MARTINA IITERTSON • *Vion Pharmaceuticals, Inc., New Haven, CT, USA*
- ZOLTÁN IVICS • *Max-Delbrück-Center for Molecular Medicine, Berlin, Germany*
- ZUZSA IZSVÁK • *Max-Delbrück-Center for Molecular Medicine, Berlin, Germany*
- JERRY J. JABOIN • *Department of Radiation Oncology, Vanderbilt University, Nashville, TN, USA; Vanderbilt-Ingram Cancer Center, Nashville, TN, USA*
- WOLFGANG JECHLINGER • *Mayrhofer & Jechlinger OEG, Vienna, Austria (died Dec. 2007)*
- SUNJOO JEONG • *National Research Laboratory for RNA Cell Biology and Department of Molecular Biology, Dankook University, Gyeonggi-do, Republic of Korea*
- LIJUN JIA • *Comprehensive Cancer Center, University of Michigan, Ann Arbor, MI, USA*
- HAO JIANG • *Department of Neurology, Henry Ford Hospital, Detroit, MI, USA*
- CHUNSHENG KANG • *Department of Neurosurgery, Tianjin Medical University General Hospital, Laboratory of Neuro-Oncology, Tianjin Neurological Institute, Tianjin, People's Republic of China*
- HOWARD L. KAUFMAN • *Division of Surgical Oncology, Columbia University, New York, NY, USA*
- MEE YOUNG KIM • *National Research Laboratory for RNA Cell Biology and Department of Molecular Biology, Dankook University, Gyeonggi-do, Republic of Korea*

- CHAVA KIMCHI-SARFATY • *Center for Biologies Evaluation and Research, Food and Drug Administration, Bethesda, MD, USA*
- JONATHAN KIMMELMAN • *Department of Social Studies of Medicine, Clinical Trials Research Group, Biomedical Ethics Unit, McGill University Faculty of Medicine, Montreal, QB, Canada*
- SEUNGHEE KIM-SCHULZE • *The Tumor Immunology Laboratory, Division of Surgical Oncology, Columbia University, New York, USA*
- IVAN KING VION • *Pharmaceuticals, Inc., New Haven, CT, USA*
- CAROLYN M. LAURENCOT • *Surgery Branch, Center for Cancer Research, National Cancer Institute National Institutes of Health, Bethesda, MD, USA*
- HEE KYO LEE • *National Research Laboratory for RNA Cell Biology and Department of Molecular Biology, Dankook University, Gyeonggi-do, Republic of Korea*
- BENJAMIN MACADANGDANG • *Laboratory of Cell Biology, National Cancer Institute, National Institutes of Health, Bethesda, MD, USA*
- PETER MAYRHOFER • *Mayrhofer & Jechlinger OEG, Vienna, Austria*
- KELLY M. MCMASTERS • *Surgical Oncology, University of Louisville, Louisville, KY, USA*
- DOUGLAS G. MCNEEL • *Department of Medicine, Section of Medical Oncology, University of Wisconsin–Madison, Madison, WI, USA*
- DON G. MORRIS • *Department of Oncology, Tom Baker Cancer Centre, Department of Medicine and Oncology, University of Calgary, Calgary, Alberta, Canada*
- LALITHA V. NAYAK • *Department of Medicine, Brown Cancer Center, University of Louisville, Louisville, Kentucky, USA*
- JOHN NEMUNAITIS • *Mary Crowley Medical Research Center, Dallas, Texas, USA*
- JOHN OHLFEST • *Department of Pediatrics, University of Minnesota, Minneapolis, MN, USA*
- BRIAN OLSON • *Department of Medicine, Section of Medical Oncology, University of Wisconsin–Madison, Madison, WI, USA*
- MATEUSZ OPYRCHAL • *Division of Medical Oncology, Mayo Clinic, Rochester, MN, USA*
- MONIA PACENTI • *Department of Histology, Microbiology and Medical Biotechnologies, University of Padova, Padova, Italy*
- BRENT PASSER • *Brain Tumor Research Center, Simches Research Building, Neurosurgery Service, Massachusetts General Hospital, Boston, MA, USA*
- GIORGIO PALÙ • *Department of Histology, Microbiology and Medical Biotechnologies, University of Padova, Padova, Italy*
- CRISTINA PEIXOTO • *Instituto de Biologia Experimental e Tecnológica (IBET) and Instituto de Tecnologia Química e Biológica – UNL (ITQB-UNL), Oeiras, Portugal*
- PEIYU PU • *Department of Neurosurgery, Tianjin Medical University General Hospital, Tianjin, People's Republic of China*
- SHERYL RUPPEL • *Regulatory Affairs Consulting, Damascus, MD, USA*
- VOLKER SCHIRRMACHER • *Division of Cellular Immunology (D010), German Cancer Research Center (DKFZ), Heidelberg, Germany*
- PETER M. SCHLAG • *Clinic for Surgery and Surgical Oncology, Charité University Medicine Berlin, Berlin, Germany*

- MARTIN SCHLEEF • *PlasmidFactory GmbH & Co KG, Bielefeld, Germany*
MARCO SCHMEER • *PlasmidFactory GmbH & Co. KG, Bielefeld, Germany*
GUY SIMPSON • *Department of Oncology, Postgraduate Medical School,
University of Surrey, Manor Park, Surrey, UK*
ULRIKE S. STEIN • *Max-Delbrück-Center for Molecular Medicine, Berlin, Germany*
STEVE H. THORNE *Division of Surgical Oncology, University of Pittsburgh, Pittsburgh,
PA, USA*
CHANDINI THIRUKKUMARAN • *Tom Baker Cancer Centre, Department of Medicine
and Oncology, University of Calgary, Calgary, Alberta, Canada*
OLEG TOLMACHOV • *National Heart and Lung Institute, Faculty of Medicine,
Imperial College London, South Kensington, London, UK*
RICARDO VAGO • *Department of Biological and Technological Research, Dibit,
San Raffaele H Scientific Institute, Milano, Italy*
TIAGO VICENTE • *Instituto de Biologia Experimental e Tecnológica (IBET)
and Instituto de Tecnologia Química e Biológica – UNL (ITQB-UNL),
Oeiras, Portugal*
WOLFGANG WALTHER • *Max-Delbrück-Center for Molecular Medicine, Berlin,
Germany*
NING SUN YANG • *Agricultural Biotechnology Research Center, Academia Sinica,
Nankang, Taipei, Taiwan, Republic of China*
NATASA ZAROVNI • *Department of Biological and Technological Research, Dibit,
San Raffaele H Scientific Institute, Milano, Italy*
SAM H. ZHOU • *Surgical Oncology, University of Louisville, Louisville, KY, USA*