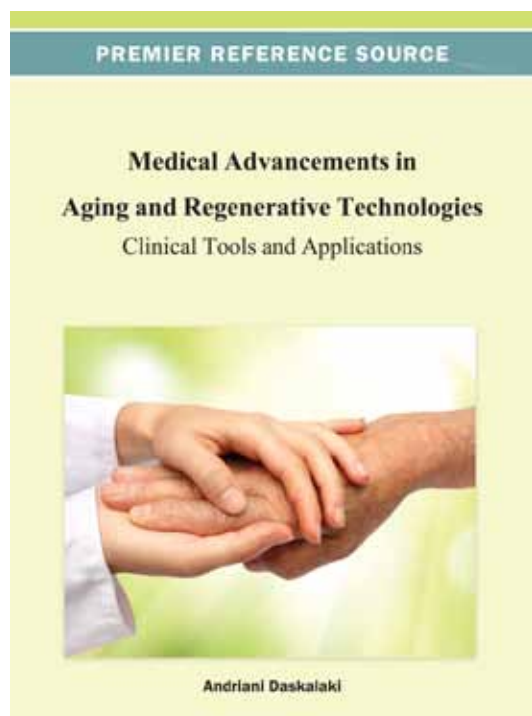


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## Medical Advancements in Aging and Regenerative Technologies: Clinical Tools and Applications



**Andriani Daskalaki**  
(Max Planck Institute for Molecular Genetics, Germany)

Studies of developmental biology are now benefiting the advancements made in the field of regenerative medicine. Current research on aging will attempt to reverse visible aging characteristics of somatic cells using cellular reprogramming to by-pass senescence.

**Medical Advancements in Aging and Regenerative Technologies: Clinical Tools and Applications** aims to translate basic science discoveries into regenerative therapies with the application of clinical tool in aging and tissue regeneration. The understanding of the characteristics affecting the aging process is an effort to guide approaches for preventing and treating age-related diseases.

### Topics Covered:

- Age Related Diseases
- Aging
- Gene Expression
- Immunotherapy
- Regeneration and Aging Applications
- Regenerative Medicine
- Stem Cell Research

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**Andriani Daskalaki** presently works in the field of molecular medicine and bioinformatics at the Max Planck Institute for Molecular Genetics in Berlin. She completed her PhD in 2002 on working in the applications of photodynamic therapy in the area of oral medicine from the Free University of Berlin. She received a two-year DAAD scholarship (1996-1998) for her research in the field of PDT. Dr. Daskalaki received a MS in Medical Informatics from TFH Berlin with her work in "Development of a documentation software for robot-assisted intraoral operations" and a MS degree in bioinformatics with her work in "Variance analysis of multifactor models in gene expression experiments with application to the identification of genetic markers for hypertension." She received a poster prize for her participation in the International Photodynamic Association Meeting in Nantes. She is the editor of the *Handbook of Research on Systems Biology Applications in Medicine* and has presented many oral presentations at national and international meetings. She is a founding member and committee member of the Greek Dental Laser Association. Her research interest areas include systems biology, PDT, and laser applications in dentistry.

## Section 1: Aging and Regeneration: Basic Concepts in Medicine

### Chapter 1

#### *BMP Signaling in Regenerative Medicine*

Zimmer Julia (Charité-Universitätsmedizin Berlin, Berlin-Brandenburg Center for Regenerative Therapies, Germany)  
Degenkolbe Elisa (Charité-Universitätsmedizin Berlin, Berlin-Brandenburg Center for Regenerative Therapies, Germany)  
Wildemann Britt (Charité-Universitätsmedizin Berlin, Berlin-Brandenburg Center for Regenerative Therapies, Germany)  
Seemann Petra (Charité-Universitätsmedizin Berlin, Berlin-Brandenburg Center for Regenerative Therapies, Germany)

### Chapter 2

#### *Proliferation and Regeneration:*

Lambrou George I. (University of Athens, Greece)  
Adamaki Maria (University of Athens, Greece)  
Zaravinos Apostolos (University of Crete, Greece)

### Chapter 3

#### *Modeling Colorectal Cancer:*

Nikolov Svetoslav (University of Rostock, Germany & Institute of Mechanics and Biomechanics, Bulgaria)  
Ullah Mukhtar (University of Rostock, Germany)  
Nenov Momchil (Institute of Mechanics and Biomechanics, Bulgaria)  
Vera Gonzalez Julio (University of Rostock, Germany)  
Raasch Peter (University of Rostock, Germany)  
Wolkenhauer Olaf (University of Rostock, Germany)

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#### *Gene Expression Regulation underlying Osteo-, Adipo-, and Chondro-Genic Lineage Commitment of Human Mesenchymal Stem Cells*

Sotoca Ana M. (Radboud University, The Netherlands)  
Weber Michael (Hans Knöll Institute, Germany)  
van Zoelen Everardus J. J. (Radboud University, The Netherlands)

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#### *Immunogenicity of Stem Cells*

Ricklefs Franz (University Heart Center Hamburg, Germany)  
Schrepfer Sonja (University Heart Center Hamburg, Germany)

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#### *Regulatory T Cell-Based Immunotherapy:*

Schallenberg Sonja (Center for Regenerative Therapies Dresden, Germany)  
Petzold Cathleen (Center for Regenerative Therapies Dresden, Germany)  
Riewaldt Julia (Center for Regenerative Therapies Dresden, Germany)  
Kretschmer Karsten (Center for Regenerative Therapies Dresden, Germany)

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#### *Regeneration of Articular Cartilage:*

Mobasheri Ali (University of Nottingham, UK)

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Martin Frank (Lausitz University of Applied Sciences (LUAS), Germany)  
Lehmann Mario (Lausitz University of Applied Sciences (LUAS), Germany)  
Anderer Ursula (Lausitz University of Applied Sciences (LUAS), Germany)

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Pham Tuan D. (University of Aizu, Japan)

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Paul Arghya (McGill University, Canada)

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Morsi Yos S (Swinburne University of Technology, Australia)  
Li Zhang (Sichuan University, China)  
Wang Sheng (Tongji University, China)

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Lindahl Olof A. (Luleå University of Technology, Sweden & Umeå University, Sweden)  
Eklund Anders (Umeå University, Sweden)  
Hallberg Per (Umeå University, Sweden)

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Bakopoulou Athina (Aristotle University of Thessaloniki, Greece)  
Leyhausen Gabriele (Medical University of Hannover, Germany)  
Geurtsen Werner (Medical University of Hannover, Germany)  
Koidis Petros (Aristotle University of Thessaloniki, Greece)

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#### *Can Activated Platelet Rich Plasma Combined with Adipose-Derived Stem Cells Be Used to Treat Skin Wrinkles?:*

Van Pham Phuc (Vietnam National University, Vietnam)  
Dang Loan Thi-Tung (Vietnam National University, Vietnam)  
Truong Nhung Hai (Vietnam National University, Vietnam)  
Phan Ngoc Kim (Vietnam National University, Vietnam)

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