

**Jerry W. Shay**

## **CURRICULUM VITAE**

**Jerry W. Shay**

**Office Address:** Department of Cell Biology  
The University of Texas Southwestern Medical Center at Dallas  
5323 Harry Hines Boulevard  
Dallas, Texas 75390-9039

TEL: (214) 648-3282  
FAX: (214) 648-8694  
e-mail: jerry.shay@utsouthwestern.edu

**Personal Data:** Born November 7, 1945  
Dallas, Texas  
Married (Jennifer A. Cuthbert, M.D.)

**Education:**

1966	B.A. (Zoology) The University of Texas at Austin
1968	M.A. (Zoology, Genetics) The University of Texas at Austin
1972	Ph.D. (Physiology and Cell Biology) The University of Kansas at Lawrence

### **Professional Appointments:**

1972-1975	Postdoctoral Fellowship Department of Molecular, Cellular and Developmental Biology University of Colorado, Boulder, Colorado (Sponsor, Keith R. Porter, Ph.D.)
1972-1973	National Institutes of Health Fellowship
1973-1975	Muscular Dystrophy Association Fellowship
1975-1981	Assistant Professor, Department of Cell Biology The University of Texas Southwestern Medical Center at Dallas
1981-1992	Associate Professor, Department of Cell Biology and Neuroscience The University of Texas Southwestern Medical Center at Dallas
1992-	Professor and Vice Chairman, Department of Cell Biology and Southland Foundation Distinguished Chair in Geriatric Research The University of Texas Southwestern Medical Center at Dallas

## **Jerry W. Shay**

### **Professional Appointments:** (continued)

- 1975-present      Member of the Graduate Faculty  
The University of Texas Southwestern Graduate School of Biomedical Sciences
- 1975-1991      Member of the Graduate Faculty in Cell Biology  
(William Snell, Ph.D., Program Director)
- 1982-1991      Member of the Graduate Faculty in Cell and Molecular Biology  
(Richard Anderson, Ph.D. Program Director)
- 1991-      Member of the Graduate Faculty in Genetics and Development  
(Dennis McKearin, Ph.D., Program Director)
- 1995-      Member of the Graduate Faculty in Cell Regulation  
(Mark Lehrman, Ph.D., Program Director)
- 1999-      Member of the Graduate Faculty in Integrative Biology  
(George DeMartino, Ph.D., Program Director)
- 2002-      Associate Director for Basic Science and Executive Committee, The University of  
Texas Southwestern Simmons Comprehensive Cancer Center
- 2005-      Director, Cancer Biology Training Track, Genetics and Development, Division of  
Biological Science
- 2005-      Associate Director Education and Training, The University of Texas Southwestern  
Simmons Comprehensive Cancer Center

### **Teaching Experience:**

1. The University of Texas Southwestern Medical Center at Dallas:
  1. Biology of Cells and Tissues (1975-present)  
Co-director with Woodring Wright 1995-present  
Co-director with Judith Head 2003-present
  2. Medical Genetics (1976-1995)  
Director, Genetics and Development (1977-1979)  
Director, Medical Genetics (1979-1986)
2. The University of Texas Southwestern Graduate School of Biomedical Sciences:
  1. Course Coordinator, Cell Fine Structure (1976)
  2. Readings Course in Cell Hybridization (1980)
  3. Readings and Laboratory Course in Somatic Cell Genetics (1982-1986)
  4. Advanced Cell Biology (1983)
  5. Advanced Topics in Cell and Molecular Biology (1984-1991)
  6. Fundamentals of Cell Biology (1988-1991)
  7. Core Curriculum Course for first year Graduate Students (1991-present)
  8. Special Course on Aging for first year Graduate Students (1999-2003)
  9. Course Director, Cancer Biology for first year Graduate Students (2004)

## **Jerry W. Shay**

3. W. Alton Jones Cell Science Center, Lake Placid, New York  
Course Director, Cell Hybridization Techniques in Cell Biology (1978)
4. The University of Texas at Austin  
Laboratory Instructor, Human Physiology (1966)  
Laboratory Instructor, Cell Biology and Embryology (1967-1969)

### **Special Academic Activities and Professional Appointments:**

- |           |   |
|-----------|---|
| 1979-1981 | Southwestern Medical School Student Admissions Committee  |
| 1979-1987 | Southwestern Medical School Student Promotions Committee  |
| 1978-1980 | Documentation Committee - Southwestern Graduate School  |
| 1980-1983 | Elected to Southwestern Medical Center Committee of Delegates   |
| 1976-1978 | Graduate Admissions Chairman, Cell Biology Program  |
| 1977-1978 | President, Southwestern Medical School Sigma Xi Club  |
| 1977-1988 | Cancer Center Executive Committee   |
| 1986-1989 | Faculty Senate representative for the Department of Cell Biology  |
| 1977-1991 | Elected-Graduate Studies Steering Committee, Cell Biology Program   |
| 1990-1991 | Graduate Admissions Chairman, Cell Biology and Neuroscience   |
| 1977-1994 | Cancer Center Scientific Review Committee   |
| 1995-     | Multidisciplinary Oncology Training Program Committee   |
| 1996-     | Executive Committee UT Southwestern Simmons Comprehensive Cancer Center   |
| 2001      | Search Committee, Chair in Urology  |
| 2001-     | Internal Advisory Committee of the NCI designated P20 Cellular and Molecular Imaging Center for Cancer Research |
| 2001-2003 | Liason Committee on Medical Education   |
| 2002-2003 | Search Committee, Chair in Radiation Oncology   |
| 2002-2004 | Search Committee, Director Simmons Comprehensive Cancer Center  |

### **Administrative Skills:**

Familiar with all aspects of Departmental operations and fiscal issues  
Faculty recruitment and availability to mentor junior faculty  
Expertise in laboratory design, renovations, and equipment purchases  
Connections to cross-departmental and center initiatives  
Ability to share leadership and encourage others' performances  
Ability to align faculty with institutional strategies  
Grant administrative organizational and writing skills  
Business skills, reducing costs, winning contracts, managing diverse workforce

### **National Committees:**

- |           |   |
|-----------|---|
| 1980-1981 | Member NCI Cancer Biology Study Section   |
| 1982      | Member of the NIH Biotechnology Study Section                                   |
| 1978-1982 | Tissue Culture Association Education Committee                                  |
| 1984-1988 | Elected Member-at-Large Tissue Culture Association; National Executive Council; |
| 1987 -    | Program Chairman; 1989 -Terminology Committee                                   |
| 1989      | Ad Hoc Member of the NIH Mammalian Genetics Study Section                       |
| 1989-1990 | Ad Hoc Member of the NIH Human Genome Project Study Section                     |
| 1990-1994 | Member of the NIH Mammalian Genetics Study Section                              |

## **Jerry W. Shay**

- 1992-present Scientific Advisory Board, Geron Corporation, Menlo Park, CA.
- 1994-1998 Member of the NIH Reviewers Reserve
- 1995-1997 Scientific Advisory Board, BioWhittaker, Inc., Walkersville, MD.
- 1995-1997 Susan G. Komen Breast Cancer Foundation, Basic and Clinical Research Grant Review and Selection Committee
- 1996-present Mary Kay Ash Foundation, Chairman, Scientific Review Committee
- 1997-present External Advisory Committee - Univ. Calif. San Diego Cancer Center
- 1997-1998 Scientific Advisory Board, Corixa, Inc. Seattle, WA.
- 1998-2002 American Federation for Aging Research, Scientific Advisory Council
- 1998-1999 Breast Cancer Integration Panel, DOD
- 2004 Breast Cancer Integration Panel, DOD
- 1998-2002 Board of Directors, International Society of Differentiation
- 1999-2002 Consultant to Clontech Laboratories, Inc. (Becton Dickinson Company)
- 2002-present Rexahn, Rockville, MD (SAB)
- 2003-present Reata Pharmaceuticals Inc., Dallas, TX (SAB)
- 2004-present Procter and Gamble, Cincinnati, OH (SAB)
- 2004-present External Advisor, Aging-Cancer Research Program Case Comprehensive Cancer Center
- 2005-present Consultant to Ambion Inc., Austin TX

## **Editorial Work:**

- 1979-1980 Editorial Board, Scanning Electron Microscopy, Inc.
- 1980-1988 Associate Editor, Tissue Culture Association Manual
- 1982-1985 Associate Editor, Texas Society for Electron Microscopy Journal
- 1982 Editor, Techniques in Somatic Cell Genetics
- 1980-1984 Editor, Cell and Muscle Motility (Volumes I - VI)
- 1986 Editor, Cell and Molecular Biology of the Cytoskeleton
- 1992-1998 Executive Editor, Cellular and Molecular Differentiation
- 1993- Editorial Academy, International Journal of Oncology
- 1993-1998 Associate Editor, In Vitro, Cellular and Developmental Biology
- 1994-1998 Editorial Board, Methods in Cell Science
- 1997-2002 Associate Editor, Cancer Research
- 1997-2000 Editorial Board, Journal of Clinical Pathology
- 1998- Editorial Advisory Board, Journal of the National Cancer Institute
- 1998- Editorial Academy, International Journal of Molecular Medicine
- 1998- Editorial Board, Journal of Antiaging Research
- 1998-2000 Associate Editor, Experimental Gerontology
- 1999- Editorial Board, Clinical Cancer Research
- 1999- Editorial Board, Neoplasia
- 2000- Editorial Board Journal of Regenerative Medicine
- 2000- Associate Editor, Differentiation
- 2001- Associate Editor, Mechanisms of Aging and Development
- 2001- Editor, Disease Markers
- 2002- Guest Editor, Oncogene Reviews

## **Jerry W. Shay**

### **Honors/Awards:**

1978-1983	NIH Research Career Development Award
1995	AlliedSignal Award for Research on Aging (with Woodring Wright)
1997	Institute for Scientific Research - Most highly cited researchers
1998	Dallas Business Journal - Health Care Hero Award - Honorable Mention
1998	Popular Science "Best of What's New" Award for Science and Technology
1999	Burroughs Wellcome Fund and FASEB: Basic Medical Science Visiting Professorship
1999-2003	Ellison Medical Foundation, Senior Scholar Award
2001	American Aging Association, 2001 Hayflick Award
2001	Southland Financial Corporation Distinguished Chair in Geriatric Research
2003	ISI Highly Cite Researcher in Molecular Biology and Genetics <a href="http://isihighlycited.com">http://isihighlycited.com</a>
2006	Doctors of the Decade (1995-2005): JW Shay ranked 6 <sup>th</sup> in the list of most cited authors in General Biomedicine. Science Watch 17:1 2-3, 2006

### **Patents:**

U.S. Patent	#5,489,508 Issue date: 02/06/96 "Therapy and Diagnosis of Conditions Related to Telomere Length and/or Telomerase Activity"
U.S. Patent	#5,639,613 Issue date: 06/17/97 "Methods for Cancer Diagnosis and Prognosis"
U.S. Patent	#5,645,986 Issue date: 07/08/97 "Telomerase Activity Inhibitor Screening"
U.S. Patent	#5,648,215 Issue date: 07/15/97 "Telomerase Diagnostic Methods"
U.S. Patent	#5,686,245 Issue date: 11/11/97 "Screening for Agents that Modulate Telomere Length"
U.S. Patent	#5,686,306 Issue date: 11/11/97 "Methods and Reagents for Lengthening Telomeres"
U.S. Patent	#5,693,474 Issue date: 12/2/97 "Methods for Cancer Diagnosis and Prognosis"
U.S. Patent	#5,695,932 Issue date: 12/9/97 "Telomerase Activity Assays for Diagnosing Pathogenic Infections and Identifying Pathogen Telomerase Inhibitors"
U.S. Patent	#5,707,795 Issue date: 1/13/98 "Diagnosis of Conditions Related to Telomere Length"
U.S. Patent	#5,830,644 Issue date: 11/3/98 "Method for Screening for Agents which Increase Telomerase Activity in a Cell"
U.S. Patent	#5,840,495 Issue date: 11/24/98 "Methods for Diagnosis of Conditions Associated with Elevated Levels of Telomerase Activity"
U.S. Patent	#5,989,807 Issue date: 11/23/99 "Detecting Cancerous Conditions by Assaying for Telomerase Activity"
U.S. Patent	#6,007,989 Issue date: 12/28/99 "Methods of Screening for Compounds that De-repress or Increase Telomerase Activity"

## **Jerry W. Shay**

- U.S. Patent #6,015,710 Issue date: 1/18/00; #6,046,307 Issue date: 4/4/2000  
"Modulation of Mammalian Telomerase by Peptide Nucleic Acids"
- U.S. Patent #6,194,206 Issue date: 2/27/2001  
"Oligonucleotide Telomerase Inhibitors to Reduce Telomere Length"
- U.S. Patent # 6,210,915 Issue date: 4/3/2001  
"Telomerase extraction method"
- U.S. Patent # 6,294,650 Issue date: 9/25/2001  
"Inhibition of mammalian telomerase by peptide nucleic acids"
- U.S. Patent # 6,368,789 Issue date: 4/9/2002  
"Screening methods to identify inhibitors of telomerase activity"
- U.S. Patent # 6,391,554 Issue date: 5/21/2002  
"Detecting cancerous conditions by assaying for telomerase activity"
- U.S. Patent # 6,551,774 Issue date: 4/22/2003  
"Diagnostic methods for conditions associated with elevated cellular levels of telomerase"

## **Ph.D. Advisor for the Following Graduate Students:**

Michael Clark 1975-1981, Ph.D., 1981

(Professor, University of Kentucky)

Lamont Weide 1975-1981, Ph.D., 1981; M.D., 1985

(Associate Professor, University of Nebraska Medical Center)

Andrew Crenshaw 1976-1979, M.D., 1982

(in private practice)

Cheryl Walker 1979-1984, Ph.D., 1984

(Professor, University of Texas Cancer System, Smithville)

William Rainey 1981-1985, Ph.D., 1985

(Professor, Medical College of Georgia, Augusta)

Deborah Iman 1984-1988, Ph.D., 1988

(High School science teacher, Albuquerque, New Mexico)

Dennis Pierce 1985-1989, Ph.D., 1989

(Associate Professor, University of Utah)

Ruben Ramirez 1995-2000, Ph.D., 2000

(Assistant Professor, Veterans Administration, Dallas)

Patrica McChesney 1997-2001, Ph.D. 2001

(Postdoctoral fellow, Medical College of Virginia, Richmond)

Dara Aisner 1997-2001, Ph.D., 2001

(MSTP student, back in medical school)

Joseph Baur 1999-2003, Ph.D., 2003

(Postdoctoral fellow, Harvard University)

Ying Zou 2000-2004

(Postdoctoral training in Clinical Cytogenetics, Mayo)

Gunner Dikmen 2002-2005

(Assistant Professor, University of Hacettepe, Faculty of Medicine, Ankara, Turkey)

Agnel Sfeir 2002-2006 , PhD, 2006 selected for Nominata Award, top award for all graduate students

(Postdoctoral fellow, Rockefeller University)

Nuno Gomes 2003-

Vikash Bhagwhandin 2004-

Oliver Delgado 2005-

## **Jerry W. Shay**

Christy Duncan 2005-

Hirotooshi Hoshiyama 2005-

Christine Buseman 2006-

Tracy Chow 2006-

### **Past Postdoctoral Trainees:**

John W. Fuseler, Ph.D., 1977-1980

Marguerite Stauver, Ph.D., 1979-1982

Rosalie Ber, M.D., 1981-1982

Harold Werbin, Ph.D., 1982-1983

Jun-Ichi Hayashi, Ph.D., 1985-1986

Wang Zongren, Ph.D., 1985-1986

Xie Jing-Yu, Ph.D., 1986-1987

Shougo Ishii, M.D., 1986-1988

Liu Yinong, Ph.D., 1986-1989

Minakshi Banerjee, Ph.D., 1987-1989

Yuan Yang, Ph.D., 1987-1989

Ma Liandong, Ph.D., 1988-1989

Naohisa Kamimura, M.D., 1988-1990

Tsuneyoshi Baba, M.D., 1988-1990

Yan-ting Chou, Ph.D., 1989-1990

Qimin Zhan, M.D., 1989-1991 (Associate Professor, University of Pittsburgh; Director and Professor National Key Lab of Molecular Oncology, Beijing China)

Michael West, Ph.D., 1989-1992 (CEO and President Advanced Cell, Boston, MA)

Brigitte Van Der Haegen, M.D., Ph.D., 1990-1992 (VP Research, BioWhitaker)

Mieczyslaw A. Piatyszek, Ph.D., 1990-1995 (Senior Scientist, Geron Corporation)

Isabelle Savre-Train, Ph.D., 1990-1993, 1995-1998 (Pasteur Institute, Paris France)

Walter Funk, Ph.D., 1991-1993 (Geron, 1993-2000; XGene, 2000-present)

Michel Ouellette, Ph.D., 1991-1999 (Assistant Professor, University of Nebraska Eppley Cancer Center)

Asha Rathi, Ph.D., 1992-1994 (Research Instructor, Hamon Cancer Center)

Yury Romanchikov, Ph.D., 1992-1994 (Staff Scientist, Sloan Kettering, NY)

Dana Brasiskyte, Ph.D., 1992-1995 (Staff Scientist, Sloan Kettering, NY)

Yan Ying, Ph.D., 1992-1994 (Assistant Professor, University of Nebraska Eppley Cancer Center)

Lauren Gollahon, Ph.D., 1993-1997 (Associate Professor, Texas Tech University, Lubbock)

Shawn Holt, Ph.D., 1994-1998 (Assistant Professor, Virginia Medical College, Richmond)

Takeshi Isomura, Ph.D., 1995-1996 (Assistant Professor, Tokyo Medical College, Japan)

Valerie Tesmer, Ph.D., 1996-1999 (lost contact)

Deborah Fredericks, Ph.D., 1996-1997 (lost contact)

James Norton, Ph.D., 1996-1998 (Vice President, Amgen Corp., CA)

Charles Epstein, Ph.D., 1996-1997 (second postdoctoral position at Princeton)

Carmela Morales, M.D., 1996-2000 (Assistant Professor, UT El Paso)

Michael Hu, Ph.D. 1998-2000 (changed to computer science)

Kazuhiro Abeyama, M.D., Ph.D, 1998-1999 (academic position in Japan)

Lance Ford, Ph.D., 1998-2001 (Senior Scientist, Ambion, Inc. Austin)

Xiaoming Yi, Ph.D., 1998-2002 (second postdoctoral position, UT Southwestern)

Laura White, M.D. 2000-2002 (private practice in Austin, TX)

## **Jerry W. Shay**

Yu-Sheng Cong, Ph.D., 2000-2002 (2002-2005, Assistant Professor and Director of Proteomics, Department of Microbiology and Immunology, University of Louisville School of Medicine, KY; 2005-Professor of Cell Biology, Beijing Normal University, China)

Meaghan Petty Granger, M.D., 2000-2003 (Pediatric Oncology, Ft Worth, Texas)

Brittney-Shea Herbert, Ph.D. 1998-2002 Postdoctoral Fellow, 2002-2003, Instructor (Assistant Professor, University of Indiana Medical Center, Indianapolis, IN)

Susanne Steinert, Ph.D. 1998-2004 (Research Scientist, France)

Nicholas Forsyth, Ph.D., 2000-2004 (Senior Scientist, Roslin Institute, Edinburgh, Ireland)

Melville Vaughan, Ph.D. 1999-2004 (Assistant Professor, Oklahoma State University)

Oliver Bechter, M.D., 2001-2004 (Assistant Professor, Internal Medicine, Innsbruck, Austria)

Ginelle Gellert, Ph.D. 2003-2005 (Assistant Professor, Tarrant County Community College, Ft Worth, TX)

Masahiro Takakura, M.D., Ph.D. 2002-2005 (Assistant Professor, Kanazawa University School of Medicine, Obstetrics and Gynecology, Japan)

Weihang Chai, Ph.D., 2001-2004 Postdoctoral Fellow; 2004-2005, Instructor (Assistant Professor, Texas Women's University, Denton, TX).

Virginia Pearce, Ph.D. 2001-2005 (Assistant Professor, University of North Texas Health Science Center at Fort Worth)

Shalmica Jackson, Ph.D. 2004-2006 – Senior Research Scientist Sigma (Kansas City, KS)

Shobhana Natarjan, Ph.D. 2004-2006 – Journal editor

Jesper Graakjaer, Ph.D. 2005-2006 – Assistant Professor Denmark

### **Current Postdoctoral Trainees:**

Chun-Hong Zhu, Ph.D. 2003-

Wallace Sharif, Ph.D. 2004-

Zhenjun Lou, Ph.D, 2004-

Andres Roig, M.D., 2005-

Calin Marian, Ph.D. 2005-

Jinyong Kim, Ph.D. 2005-

Phillip Smiraldo, Ph.D. 2006-

Yong Zhao, Ph.D. 2005-

### **Junior Faculty Trainees:**

Harry Papaconstantinou, M.D., 2003-2006 Assistant Professor Surgery

Dojun Yoon, Ph.D. 2004-2007 – Associate Professor/visiting faculty

Daniella Robertson, D.O., 2004- present K08 co-mentor

### **Current Research Grant Support:**

National Institutes of Health, AG07992

Mechanisms of cellular immortalization

Jerry Shay - Co-principal Investigator (with Woodring Wright)

NCI Lung SPORE: P50 CA70907

Lung Cancer Specialized Programs of Research Excellence

Principal Investigator: John D. Minna (Co-investigator: Jerry W. Shay)

Project 5: Targeting telomerase for lung cancer therapeutics

## **Jerry W. Shay**

Geron Corporation

The role of telomeres and telomerase in aging

Jerry Shay - Principal Investigator

Procter and Gamble, Inc.

Establishment of extended life span cells for skin

Jerry Shay - Principal Investigator

Ted Nash Foundation

Use of telomerase to create bioengineered tissues

Jerry Shay - Principal Investigator

NASA - NSCOR

Lung cancer pathogenesis and HZE particle exposure

Jerry Shay, Co-lead (2 projects and one core)

NASA-

Risk assessment of space radiation-enhanced colon tumorigenesis

Jerry Shay - Principal Investigator

### **Predoctoral and Postdoctoral Awards:**

Department of Defense (Breast Cancer Program)

Jerry W. Shay, sponsor (Christine Duncan, predoctoral fellow)

Altering telomere-end processing: a novel breast cancer therapeutic approach

American Heart Association

Woodring E. Wright and Jerry W. Shay, sponsors (Chun-Hong Zhu, postdoctoral fellow)

Reprogramming skeletal myoblasts for cardiac repair

Department of Defense (Breast Cancer Program)

Jerry W. Shay, sponsor (Christine Buseman, predoctoral fellow)

Molecular dissection of telomere structure should lead to improved breast cancer therapeutics

### **Recently Completed Research Support**

NCI NO1 CN43301

2004-2006

Mechanism-based screen of chemopreventive agents vs. nuclear receptors as molecular targets in human lung cancer in vitro.

Jerry Shay - Principal Investigator (Co-investigator, David Mangelsdorf)

Dutch Cancer Society

2005-2006

Woodring E. Wright and Jerry W. Shay, sponsors (Jesper Graakjaer, postdoctoral fellow)

Distribution of telomere lengths in tissue in vivo

Department of Defense (Breast Cancer Program)

2003-2006

Jerry W. Shay, sponsor (Shobana Natarajan, postdoctoral fellow)

Alternative lengthening of telomeres in the breast cancer prone Li-Fraumeni Syndrome

**Jerry W. Shay**

**Invited Seminars and Symposia:**

**1995-2000 (representative):**

Dahlem Conference: Molecular Aspects of Aging - Berlin, Germany  
Banbury Center Conference: Telomeres - Cold Spring Harbor, New York  
Visiting Professor and Senior Graduate Lectureship: Umea University - Umea, Sweden  
American Cancer Society, Science Writer Seminar - New Orleans, Louisiana  
Senior Guest Faculty, University of Michigan Cancer/Geriatric Center, Research Retreat on Cancer and Aging - Ann Arbor, Michigan  
Keynote Speaker: Fifth International Symposium of the Hiroshima Cancer Seminar: Telomeres and Cancer -Hiroshima, Japan  
Keynote Speaker: Association of American Pathology - Minneapolis, Minnesota  
New York Academy of Science Symposium: Telomerase - New York, New York  
American Society for Hematology: Plenary Speaker - Seattle, Washington  
Distinguished Invited Lecturer: Duke University Medical Center - Durham, North Carolina  
AACR Conference: Cancer Susceptibility Genes and Molecular Carcinogenesis - Keystone, Colorado  
9th NCI-EORTC Symposium on New Drugs in Cancer Therapy - Amsterdam, Holland  
Albert Einstein 13th Annual Advances in Cancer Treatment Research - New York, New York  
AACR Annual Meeting: Telomerase, Cell Senescence and Cancer - Washington D.C.  
Austrian Society of Hematology and Oncology - Graz, Austria  
Mayo Cancer Center Grand Rounds - Rochester, Minnesota  
Johns Hopkins University: Distinguished Oncology Series - Baltimore, Maryland  
Genetic Toxicology Association: Keynote Speaker - Wilmington, Delaware  
New Jersey Annual Cancer Symposium: Keynote Speaker - New Brunswick, New Jersey  
Program Chairman, NCI Sponsored Workshop: Telomerase as an Early Detector of Cancer - Bethesda  
8th Pezcoller Symposium; Genomic Instability and Immortality in Cancer - Trento, Italy  
Program Chairman: First Geron Telomerase and Cancer Symposium - Hawaii, Hawaii  
The Molecular Biology of Colorectal Cancer: Keynote Speaker - Minneapolis, Minnesota  
2nd Wendy Reves International Symposium on Breast Cancer Research - Dallas, Texas  
Distinguished Visiting Scientist, Bristol-Myers Squibb - Princeton, NJ  
Banbury Center Conference: Telomeres and Telomerase - Cold Spring Harbor, New York  
15th International Bayer Pharmaceutical Press Seminar: New Approaches to Cancer Therapy - New York,  
Norwegian Oncology Forum: Keynote Speaker - Trondheim, Norway  
Distinguished Lichfield Lectureship - University of Oxford  
Ciba Foundation Symposium on Telomeres and Telomerase - London, UK  
AACR Annual Meeting, Chairman Educational Session on "Telomerase, Senescence and Cancer" - San Diego, California  
American Society for Clinical Oncology (ASCO) 33rd Annual Meeting, Chairman Scientific Symposium on Telomerase - Denver, Colorado  
Distinguished visiting scientist lecture - Albany Medical College, NY  
Keynote Speaker "Aging and Corneal Dystrophies" - Boston, MA  
Winship Cancer Center - Emory University School of Medicine - Elkin Distinguished Lectureship - Atlanta, Georgia  
American Society Hematology - Plenary Session - San Diego, CA  
Keynote speaker: DNA diagnosis and tumor markers - Tokyo, Japan  
Ralph R. Braund Distinguished Visiting Scientist, Forum on Cancer Research -Memphis, TN  
Program Chairman: 2nd Geron Cancer and Aging Symposium - Kapalua, Maui

## **Jerry W. Shay**

Wellcome Visiting Professorship in Basic Medical Sciences, Duke University Medical  
The Miami Nature Biotechnology Winter Symposium - Miami, FL  
UC, San Diego Cancer Center and Division of Hematology-Oncology Lee Bartell Foundation  
Visiting Professor.

Program Chairman, Telomerase and Telomere Dynamics in Cancer and Aging - San Francisco, CA  
Peter P. Lamy Memorial Lecture - American Society of Consultant Pharmacists, Boston, MA

### **Invited Seminars and Symposia 2001:**

January 9-14: Cell Cycle 2001/ Molecular Basis of Cancer: Signaling to Cell Growth and Death  
Keystone Symposium, Taos, New Mexico  
March 6-8: US/Japan Cancer Symposium on Genetic Instability and Cancer, Tokyo, Japan  
March 17: EMS Annual Meeting, San Diego, CA  
March 24-28: AACR - New Orleans, LA  
April 11: Rockefeller University: Seminar in Clinical Research  
April 23: Stanford University Medical Center: "Frontiers in Cancer Series"  
April 30: ARVO: "Symposium on Tissue Engineering" Ft. Lauderdale, FL  
May 3: Univ. North Carolina - "Aging and Senescence Symposium"  
May 13-14: Genentech Invited Seminar  
May 29: M.D. Anderson Cancer Center: Cancer Medicine Grand Rounds  
June 4-8: Eurocancer, Paris France, Plenary Speaker  
July 1-4: UKEMS Invited Keynote Speaker "Cell senescence, telomere and telomerase in tumor  
suppression and carcinogenesis" Nottingham, UK  
September 12-15: Keynote Speaker "Biological Therapy of Cancer: From Basic Research to Clinical  
Applications" EORTC/NCI/CRC/BTDG/DGHO Munich, Germany  
October 2-5: Plenary Session Keynote Speaker: Japanese Society of Human Genetics: Tokyo, Japan  
October 23: Dana Farber Cancer Center, Invited Seminar  
November 2: "Advances in Telomere Biology" ISREC, Lausanne, Switzerland  
November 4: International Agency for Research on Cancer, Cancer Genetics Course - Bertinoro, Forli,  
Italy.

### **Invited Seminars and Symposia 2002:**

January 22-27: Keystone Symposium - Genomics and Genetics of Senescence and Cancer  
January 29-30th: University of Pittsburg, Crano Lecture.  
February 11-13: "Impact of Cancer Biotechnology on Predictive Oncology and Therapy" Paris France  
March 6-8: Student research week, Keynote Speaker Texas Tech University  
March 13-16: Cancer workshop - Turin Italy  
April 1-6: Snowmass meeting on Cell Engineering  
April 6-10: AACR Annual Meeting- San Francisco Plenary speaker two sessions  
April 17-18: Carnegie Mellon University - student invitation  
April 26-28: Cancer Congress - Keynote speaker San Luis Potosi, Mexico  
May 4: U of Alabama Aging Center, Birmingham, AL  
May 7: Scripts - La Jolla, CA  
May 18-22: EURESCO Aging Conference Spetses, Greece  
June 22-31: Singapore Ageing and Age-related Disease  
August 3-6: US/Japan NCI meeting on telomerase therapeutics, Maui, Hawaii  
September 1-3: International Agency for Research on Cancer, Cancer Genetics Course - Bertinoro, Italy  
September 8-10: British Association of Cancer Research Cancer Conference, Oxford  
Sept 22-25: Banbury Conference on Immortalization, Cold Spring Harbor, NY

## **Jerry W. Shay**

October 2-4: Millennial Frontiers in Biosciences, Cheongju, Korea

November 7-10: Frobeck Foundation Conference, Hilton Head, SC

December 7-11: Symposium Chairman, AACR Special Conference on “Telomeres and Telomerase in Cancer” San Francisco, CA

### **Invited Seminars and Symposia 2003:**

April 30-May 4: Cold Spring Harbor Telomere meeting

July 20-23: Aspen Cancer Conference, Inc.

August 9-15: Vancouver, Canada - International Lung Cancer Symposium

Sept 10-13: Munich Germany - Biological therapy of cancer

Sept 19-23: Queen's College, Cambridge, England International Association of Biomedical Gerontology

October 15: Sante Fe, NM: New therapies and diagnosis of lung cancer

November 7: Washington University School of Medicine, St Louis, MO: Leonard J. Tolmach Distinguished Lecture and Symposium

November 17-19: Madrid – Telomere meeting , Co-organizer

December 1-5: Singapore - BMRC Distinguished Visitor

### **Invited Seminars and Symposia 2004:**

January 14: New York, NY - Skin and Aging Symposium, Keynote Speaker

February 19-22: San Diego, CA - Targeted therapies for the treatment of lung cancer, invited faculty

March 11-14: Milan Italy - IFOM-IEO Cancer Symposium, Invited Speaker

April 3-7: Cambridge England - EMBO/58th Harden Conference on Telomeres and Genome Stability

June 4-5: St. Petersburg, FL - 33rd Annual meeting of the American Aging Association, Invited Speaker

June 24-27: Singapore - Keynote speaker: Third Asia Pacific Conference on Anti-Ageing Medicine

Sept 5-9: Honolulu, Hawaii - Invited speaker, International Society for Differentiation

Sept 11-17: Aussois, France - Invited speaker, Gordon Conference on Aging

Sept 28: Houston, TX - Blaffer lecture, M.D. Anderson Cancer Center

October 12-16: North Cyprus - Invited speaker, British Association for Cancer Research, Stem Cells and Telomerase: Targets for transformation and therapeutic applications

November 3- 6: San Francisco, CA - Symposium Chairman, AACR Special Conference on “Telomeres and Telomerase in Cancer”

November 16: Philadelphia, PA - Invited speaker, University of Pennsylvania

Dec 3: Fort Collins, CO - Invited speaker, Colorado State University

Dec 5: AAAAM keynote speaker, Las Vegas, NV

### **Invited Seminars and Symposia 2005:**

Jan 19-22: ISREC Conference, Cell and Molecular Biology of Cancer, Lausanne, Switzerland

Feb 10-13: Targeted Therapies for Lung Cancer, Steamboat Springs, Colorado

March 3-9: Invited Speaker Cellular Senescence and Cell Death, Keystone, Colorado

March 15-20: Keynote Invited Speaker Genome Instability and Repair Taos, New Mexico

March 21 -25: Garvan International Fellowship Program Sydney, Australia

April 14 - Edward Gall named lecture, University of Cincinnati Medical Center

April 29 - Nurses Oncology Conference: Keynote Symposium Invited Speaker

June 7 - Endocrinology Society Annual Meeting; Major Symposium Invited Speaker

July 24-29 Gordon Research Conference on Cancer, Bryant College, NH, Invited Speaker

Aug 27-28 –Targeting Therapies for Cancer, Washington, D.C., Invited Speaker

Sept 22-24 – Leukemia and Lymphoma Society, Scottsdale, AZ, Invited Speaker

## **Jerry W. Shay**

Sept 29-Oct 2 Prostate Scientific Retreat, Scottsdale AZ, Invited  
Nov 7-10 – Cancer and Aging, CNIO Cancer Conference, Madrid, Spain, Invited Speaker  
Nov 10-12 – Cancer Stem Cell Symposium – St Andrews, Scotland, Invited Speaker  
Nov 13-16 – NASA – Microdosimetry Conference – Venice, Italy, Invited Speaker

### **Invited Seminars and Symposia 2006:**

Jan 31 –Feb 3 – Washington, D.C. AACR Special Conference on Cancer Stem Cells, Invited Speaker  
March 25-28 – Taipei, Taiwan International Conference on Telomerase, Keynote Speaker  
March 31-3 –Washington DC. AACR annual meeting, Invited Educational Workshop Speaker and Invited Speaker to major symposium  
April 4-5 Genome Stability ASBMB annual symposium, Invited Speaker  
April 20-23 – National Cancer Institute of the Netherlands, Invited Speaker  
April 26 – Kansas City, Mo. Stowers Institute, Invited Speaker  
May 7-9 RecQ helicases and other helicases in telomere maintenance and related pathways National Conference Center, Landowne, VA, Invited Speaker  
June 4-9 NASA Investigator's meeting – Moscow and St Petersburg, Russia  
June 14 -17<sup>th</sup> – Wenner-Gren Foundation. Kristineberg, Sweden Marine Research Station on Aging  
June 23-29<sup>th</sup> – Istanbul 31<sup>st</sup> FEBS Congress 2006, Invited Speaker  
July 30-Aug 4 – Gordon Conference on Cancer, Bryant University, RI  
August 15-17 – SFFI Internation Congress, Davos, Switzerland  
Aug 30-Sept 3 – Telomeres and Genome Stability, Invites Speaker, Villar-sur-Oillon, Switzerland  
Sept 4-6 – Co-organizer BACR Conference on Stem Cells and Telomerase – York, UK  
Sept 16-20 – Istanbul 5<sup>th</sup> European Congress of Biogerontology, Invited Speaker  
Oct 24-30 – Beijing – 5<sup>th</sup> Pacific-Asian Cell Biology Conference, Invited Speaker  
November 3-4 – Boston, MA. John B. Little Symposium, Invited Speaker  
November 11-16 – Madrid, Spain, Co-organizer CNIO conference on telomeres and telomerase  
Nov 28-30 – Innsbruck Austria European Research on Ageing Symposium, Invited Keynote Speaker

### **Invited Seminars and Symposia 2007:**

Feb 21-23 – AACR special conference on Aging and Cancer – San Diego, CA.  
March 24-28 – Jack Gross memorial lecture – Jerusalem, Israel  
April 4-5 – Invited Speaker, University of Pittsburgh  
April 10-15 – Aging Conference – Titisee Germany  
May 2-4 – CSH meeting on telomeres, NY – invited speaker and session chair  
May 7-9 – Invited speaker, National Institutes of Aging, Baltimore, MD  
May 20-24 – 12<sup>th</sup> International Association for Biomedical Gerontology – Spetses, Greece  
June 17-20 – Beatson International Cancer Conference, Glasgow, Scotland  
July 13-15 – NASA workshop - Monterrey, CA  
July 26-29 – Senescence, Aging, and Cancer - Ames, Iowa  
Oct 9-14 – Aging symposium - Jena Germany

**Jerry W. Shay**

## **BIBLIOGRAPHY**

### **I. Journal Publications:**

1. Rash, J., **Shay, J. W.** and J. J. Biesele. Urea extraction of Z-bands, intercalated discs and desmosomes. *J. Ultrastruct. Res.*, 124:181-189, 1968.
2. Rash J., **Shay, J. W.** and J. J. Biesele. Cilia in cardiac differentiation. *J. Ultrastruct. Res.*, 29:470-484, 1969.
3. **Shay J. W.**, Dobson W. J., Simmons, E. E., Biesele, J. J. and O. P. Breland. Subunits of flagellar accessory tubules. *Tissue Cell*, 1:593-596, 1969.
4. Rash, J., **Shay, J. W.** and J. J. Biesele. Preliminary biochemical investigations of the intermediate filaments. *J. Ultrastruct. Res.*, 33:399-408, 1970.
5. **Shay, J. W.** Electron microscope studies of spermatozoa of *Rhynchosciara sp.*: Disruption of microtubules by various treatments. *J. Cell Biol.*, 54:598-608, 1972.
6. **Shay, J. W.** Ultrastructural observations on the acrosome of *Lumbricus terrestris*. *J. Ultrastruct. Res.*, 41:572-578, 1972.
7. Veomett, G., Prescott, D., **Shay, J. W.** and K. R. Porter. Reconstruction of mammalian cells from nuclear and cytoplasmic components separated by treatment with cytochalasin B. *Proc. Natl. Acad. Sci. U.S.A.*, 71:1999-2002, 1974.
8. **Shay, J. W.**, Porter, K. R. and D. M. Prescott. The surface morphology and fine structure of CHO cells following enucleation. *Proc. Natl. Acad. Sci. U.S.A.*, 71:3059-3063, 1974.
9. **Shay, J. W.**, Gershenbaum, M. R. and K. R. Porter. Enucleation of CHO cells by means of cytochalasin B and centrifugation: The topography of enucleation. *Exp. Cell Res.*, 94:47-55, 1975.
10. Veomett, G., **Shay, J. W.**, Hough, P. and D. M. Prescott. Large scale enucleation of mammalian cells. *Methods Cell Biol.*, 13:1-3, 1976.
11. **Shay, J. W.** A water immersion objective for the modulation contrast microscope. *Tissue Culture Assoc. Manual*, 3:699-702, 1977.
12. Bollon, A. P., Nath, K. and **J. W. Shay**. Establishment of contracting heart muscle cell cultures. *Tissue Culture Assoc. Manual*, 3:637-641, 1977.
13. **Shay, J. W.** and M. A. Clark. Morphological studies on the enucleation of colchicine treated L-929 cells. *J. Ultrastruct. Res.*, 58:155-161, 1977.

## **Jerry W. Shay**

14. **Shay, J. W.**, Porter, K. R. and T. C. Krueger. Motile behavior and topography of whole and enucleate mammalian cells on modified substrates. *Exp. Cell Res.*, 105:1-8, 1977.
15. **Shay, J. W.** Selection of reconstituted cells from karyoplasts fused to chloramphenicol resistant cytoplasts. *Proc. Natl. Acad. Sci. U.S.A.*, 74:2461-2464, 1977.
16. Feit, H., Neudeck, U. and **J. W. Shay**. Anomalous electrophoretic properties of neurofilament protein subunits. *Brain Res.*, 133:341-349, 1977.
17. Clark, M. A., Crenshaw, A. H. and **J. W. Shay**. Fusion of mammalian somatic cells with polyethylene glycol 400 MW. *Tissue Culture Assoc. Manual*, 4:801-804, 1978.
18. Nath, K., **Shay, J. W.** and A. P. Bollon. Relationship between dibutyryl cyclic AMP and microtubule organization in contracting heart muscle cells. *Proc. Natl. Acad. Sci. U.S.A.*, 75:319-323, 1978.
19. **Shay, J. W.**, Peters, T. T. and J. W. Fuseler. Cytoplasmic transfer of chloramphenicol-resistance, intracisternal A virus particles and microtubule organizing centers in mouse tissue culture cells. *Cell*, 14:835-842, 1978.
20. **Shay, J. W.** and J. W. Fuseler. Diminished microtubules in cells derived from inherited dystrophic muscle explants. *Nature*, 278:178-180, 1978.
21. **Shay, J. W.**, Cook, J., Fuseler, J. W., Feit, H., Thomas, L. E. and J. L. Studt. Microtubules and muscular dystrophy. *N.Y. Trans. Am. Neurol. Assoc.*, 104:12-15, 1979.
22. **Shay, J. W.** and M. A. Clark. Nuclear control of tumorigenicity in reconstructed cells by PEG-induced fusion of cell fragments. *J. Supramolec. Struct.*, 11:33-49, 1979.
23. **Shay, J. W.**, Feit, H. and J. Cook. The effects of isaxonine on microtubule assembly in avian and human dystrophic cells. *N.Y. Trans. Amer. Neurol. Assoc.*, 105:1-3, 1980.
24. Crenshaw, A. H., **Shay, J. W.** and L. R. Murrell. Mass enucleation of tissue culture cell monolayers. *Tissue Culture Methods*, 6:127-136, 1980.
25. **Shay, J. W.** and M. A. Clark. A new method for identifying reconstituted cells. *Proc. Natl. Acad. Sci. U.S.A.*, 77:381-384, 1980.
26. Clark, M. A., Goldstein, L. and **J. W. Shay**. Techniques for purifying L-cell karyoplasts that do not regenerate. *Som. Cell Genet.*, 6:455-464, 1980.
27. Feit, H. and **J. W. Shay**. The assembly of tubulin into membranes. *Biochem. Biophys. Res. Commun.*, 94:324-331, 1980.
28. Crenshaw, A. H., **Shay, J. W.** and L. R. Murrell. Colcemid induced micronucleation in cultured human cells. *J Ultrastruct. Res.*, 75:179-186, 1981.

## **Jerry W. Shay**

29. **Shay, J. W.**, Lorkowski, G. and M. A. Clark. Suppression of tumorigenicity in cybrids. *J. Supramol. Struct. Cell. Biochem.*, 16:75-82, 1981.
30. Clark, M. A. and **J. W. Shay**. The role of tubulin in the steroidogenic response of murine adrenal and rat Leydig cells. *Endocrinology*, 109:2261-2263, 1981.
31. Weide, L. G., Clark, M. A., Rupert, C. S. and **J. W. Shay**. Detrimental effect of mitochondria on hybrid cell survival. *Som. Cell Genet.* 8: 1:15-21, 1982.
32. Clark, M. A. and **J. W. Shay**. Mitochondrial transformation of mammalian cells. *Nature*, 295:605-607, 1982.
33. Clark, M. A. and **J. W. Shay**. Long lived factors that suppress adrenal steroidogenesis *Proc. Natl. Acad. Sci. U.S.A.*, 79:1144-1148, 1982.
34. Fuseler, J. W. and **J. W. Shay**. The association of desmin with the developing myofibrils of cultured embryonic rat heart myocytes. *Dev. Biol.*, 91:448-457, 1982.
35. Feit, H., Stauver, M., Domke, R. and **J. W. Shay**. Fragmentation analysis of normal and dystrophic avian muscle. *Muscle Nerve*, 5:373-381, 1982.
36. Rainey, W. E., Hornsby, P. J. and **J. W. Shay**. Morphological correlates of ACTH-stimulated steroidogenesis in cultured adrenocortical cells: Differences between bovine and human adrenal cells. *Endocrinology*, 113:48-54, 1983.
37. Walker, C. and **J. W. Shay**. The effect of mitochondrial dosage on the transfer of chloramphenicol resistance. *Som. Cell Genet.*, 9: 469-476, 1983.
38. Cuthbert, J. A. and **J. W. Shay**. Microtubules and lymphocyte responses: effect of colchicine and taxol on mitogen-induced human lymphocyte activation and proliferation. *J. Cell. Physiol.*, 116:127-134, 1983.
39. **Shay, J. W.** Cytoplasmic modification of nuclear gene expression. *Mol. Cell. Biochem.*, 57:17-26, 1983.
40. Crenshaw, A. H., **Shay, J. W.** and L. R. Murrell. Micronucleation of human somatic cells with colcemid. *Tissue Culture Methods*, 8: 85-187, 1983.
41. Walker, C. and **J. W. Shay**. 5-Azacytidine induced myogenesis in a differentiation defective cell line. *Differentiation*, 25: 259-263, 1984.
42. Ber, R. and **J. W. Shay**. The use of isolated mitochondria to transfer chloramphenicol-resistance in hamster cells. *Israel J. Med. Sci.*, 20:244-248, 1984.
43. Rainey, W. E., **Shay, J. W.** and J. I. Mason. The effect of cytochalasin D on steroid production and stress fiber organization in cultured bovine adrenocortical cells. *Mol. Cell. Endocrinol.*, 35:189-197, 1984.

## **Jerry W. Shay**

44. Walker, C., Ranney, D. F. and **J. W. Shay**. 5-Azacytidine induced uncoupling of differentiation and tumorigenicity in a murine cell line. *J. Natl. Cancer Inst.*, 73:877-886, 1984.
45. Rainey, W. E., Kramer, R. E., Mason, J. I. and **J. W. Shay**. The effects of taxol on steroid production by primary cultures of bovine adrenocortical cells and cultured mouse Leydig and adrenal tumor cell. *J. Cell Physiol.*, 123:17-24, 1985.
46. Rainey, W. E., **Shay, J. W.** and J. I. Mason. ACTH induction of 3-hydroxy-3-methylglutaryl coenzyme A reductase, cholesterol biosynthesis and steroidogenesis in primary cultures of bovine adrenocortical cells. *J. Biol. Chem.*, 261:7322-7326, 1986.
47. Hayashi, J.-I., Werbin, H. and **J. W. Shay**. The effects of normal human fibroblast mitochondrial DNA on the segregation of HeLaTG mitochondrial DNA and on the tumorigenicity of HeLaTG cells. *Cancer Res.*, 46:4001-4006, 1986.
48. Walker, C., Matthews, A. M. and **J. W. Shay**. Suppression of tumorigenicity mediated by 5-azacytidine is associated with increased chromosome number. *J. Natl. Cancer Inst.*, 78:695-700, 1987.
49. **Shay, J. W.** Cell enucleation, cybrids, reconstituted cells and nuclear hybrids. *Methods Enzymol.*, 151:221-237, 1987.
50. **Shay, J. W.** and H. Werbin. Are mitochondrial DNA mutations involved in the carcinogenic process? *Mut. Res.*, 186:149-160, 1987.
51. Hayashi, J.-I., Yonekawa, H., Murakami, J., Tagashira, Y. and **J. W. Shay**. Mitochondrial genomes in intraspecies mammalian cell hybrids display codominant or dominant/recessive behavior. *Exp. Cell Res.*, 172:218-227, 1987.
52. **Shay, J. W.** and H. Werbin. Cytoplasmic suppression of tumorigenicity in reconstructed cells. *Cancer Res.*, 48:830-834, 1988.
53. **Shay, J. W.**, Liu, Y. and H. Werbin. Cytoplasmic suppression of tumor progression in reconstituted cells. *Som. Cell Mol. Genet.*, 14:345-350, 1988.
54. Miranda, A., Ishii, S., DiMauro, S. and **J. W. Shay**. Cytochrome c oxidase deficiency in Leigh Syndrome: Genetic evidence for a nuclear encoded mutation. *Neurology*, 39:697-702, 1989.
55. Wright, W. E., Pereira-Smith, O. M. and **J. W. Shay**. Reversible cellular senescence: A two-stage model for the immortalization of normal human diploid fibroblasts. *Mol. Cell. Biol.*, 9:3088-3092, 1989.
56. **Shay, J. W.** and W. E. Wright. Quantitation of the frequency of immortalization of normal diploid fibroblasts by SV40 large T-antigen. *Exp. Cell Res.*, 184:109-118, 1989.
57. Iman, D. S. and **J. W. Shay**. Down-regulation of *c-myc* amplification in human somatic cell hybrids. *Cancer Res.*, 49:4417-4422, 1989.

## **Jerry W. Shay**

58. Kamimura, N., Ishii, S., Liandong, M. and **J. W. Shay**. Three separate mitochondrial DNA sequences are contiguous in human genomic DNA. *J. Mol. Biol.*, 210:703-707, 1989.
59. Duigou, G. J., Babiss, L. E., Iman, D. S., **Shay, J. W.** and P. B. Fisher. Suppression of the progression phenotype in somatic cell hybrids occurs in the absence of altered type 5 adenovirus gene expression. *Mol. Cell. Biol.*, 10:2027-2034, 1990.
60. **Shay, J. W.** and S. Ishii. Unexpected nonrandom mitochondrial segregation in intraspecific human cell hybrids. *Anticancer Res.*, 10:279-284, 1990.
61. **Shay, J. W.**, Pierce, D. J. and H. Werbin. Mitochondrial DNA copy number is proportional to total cell DNA under a variety of growth conditions. *J. Biol. Chem.*, 265:14802-14807, 1990.
62. Pierce, D. J., Werbin, H. and **J. W. Shay**. An improved procedure for quantitating mitochondrial DNA in cultured mammalian cells. *Biotechniques*, 9:724-729, 1990.
63. Ning, Y., **Shay, J. W.**, Mercedes, L., Taylor, L., Ledbetter, D. and O. M. Pereira-Smith. Chromosome 11 does not affect *in vitro* lifespan of different immortal human cells. *Exp. Cell Res.*, 192:220-226, 1991.
64. **Shay, J. W.**, Wright, W. E. and Werbin, H. Defining the molecular mechanisms of human cell immortalization. *Biochim. Biophys. Acta*, 1072:1-7, 1991.
65. Velasco, S., Tarlow, M., Olsen, K., **Shay, J. W.**, McCracken Jr., G. H. and Nisen, P. D. Temperature-dependent modulation of lipopolysaccharide-induced interleukin-1 and tumor necrosis factor expression in cultured human astroglial cells by dexamethasone and indomethacin. *J. Clin. Invest.*, 87:1674-1680, 1991.
66. **Shay, J. W.**, Pereira-Smith, O. M. and Wright, W. E. A role for both Rb and p53 in the regulation of human cellular senescence. *Exp. Cell Res.*, 196:33-39, 1991.
67. **Shay, J. W.**, Baba, T., Zhan, Q., Kamimura, N. and Cuthbert, J. A. Insertion of mitochondrial DNA into the *c-myc* oncogene in HeLa cells. *Oncogene*, 6:1869-1874, 1991.
68. Ouellette, M., Chen, J., Wright, W. E. and **Shay, J. W.** Complexes containing the retinoblastoma gene product recognize different DNA motifs related to the E2F site. *Oncogene*, 7:1075-1081, 1992.
69. **Shay, J. W.**, Werbin, H., Funk, W. and Wright, W. E. Cellular and molecular advances in elucidating p53 function. *Mut. Res.*, 277:163-171, 1992.
70. Wright, W. E. and **Shay, J. W.** Telomere positional effects and the regulation of cellular senescence. *Trends Genet.*, 8:193-197, 1992.
71. Funk, W. D., Pak, D., Karas, R. H., Wright, W. E. and **Shay, J. W.** A transcriptionally active, DNA binding site for human p53 protein complexes. *Mol. Cell. Biol.*, 12:2866-2871, 1992.

## **Jerry W. Shay**

72. Savre-Train, I., Piatyszek, M. A. and **Shay, J. W.** Transcription of deleted mitochondrial DNA in human adenocarcinoma cells. *Hum. Mol. Genet.*, 1:203-204, 1992.
73. Wright, W. E. and **Shay, J. W.** The two-stage mechanism controlling senescence and immortalization. *Exp. Gerontol.*, 27:383-389, 1992.
74. **Shay, J. W.**, West, M. and Wright, W. E. Re-expression of senescent markers in de-induced reversibly immortalized cells. *Exp. Gerontol.*, 27:477-492, 1992.
75. **Shay, J. W.** and Werbin, H. New evidence for the insertion of mitochondrial DNA into the human genome: Significance for cancer and aging. *Mut. Res.*, 275:227-235, 1992.
76. Van Der Haegen, B. A. and **Shay, J. W.** Immortalization of human mammary epithelial cells by SV40 large T-antigen involves a two-step mechanism. *In Vitro: Cell. Dev. Biol.*, 29:180-182, 1993.
77. **Shay, J. W.** and Werbin, H. Toward a molecular understanding of the onset of human breast cancer: a hypothesis. *Breast Cancer Res. Treat.*, 25:83-94, 1993.
78. **Shay, J. W.**, Wright, W. E., Brašiškyte, D., and Van Der Haegen, B. A. E6 of human papilloma virus 16 can overcome the M1 stage of immortalization in human mammary epithelial cells but not in human fibroblasts. *Oncogene*, 8:1407-1413, 1993.
79. Zhang, W, Funk, W. D., Wright, W. E., **Shay, J. W.**, and Deisseroth, A. B. DNA binding and transcriptional activation by mutant p53 proteins. *Oncogene*, 8:2555-2559, 1993.
80. Chen, J.-Y., Funk, W. D., Wright, W. E., **Shay, J. W.**, and Minna, J. D. Heterogeneity of transcriptional activity of mutant p53 proteins and p53 DNA target sequences. *Oncogene*, 8:2159-2166, 1993.
81. **Shay, J. W.**, Wright, W. E. and Werbin, H. Loss of telomeric DNA during aging may predispose cells to cancer. *Int. J. Oncol.*, 3:559-563, 1993.
82. Zhang, W., **Shay, J. W.**, and Deisseroth, A. Inactive p53 mutants may enhance the transcriptional activity of wild-type p53. *Cancer Res.*, 53:4772-4775, 1993.
83. **Shay, J. W.**, B. A. Van der Haegen, Y. Ying and Wright, W. E. The frequency of immortalization of human fibroblast and mammary epithelial cells transfected with SV40 large T-antigen. *Exp. Cell Res.*, 209:45-52, 1993.
84. **Shay, J. W.**, H. Werbin and Wright, W. E. Telomere shortening contributes to aging and cancer: a perspective. *Mol. Cell. Diff.*, 2(1):1-18, 1994.
85. Rainey, W. E., Sawetawan, C., **Shay, J. W.**, Michael, M. D., Mathis, J.M., Kutteh, W., Byrd, W. and Carr, B. R. Retention of differentiated function in human granulosa cells transformed with E6/E7 of human papillomavirus. *J. Clin. Endocrinol. Metab.*, 78:705-710, 1994.

## Jerry W. Shay

86. Zhang, W., Xiang-Yang G., Gui-Ying, H., Wen-Biao, L., **Shay, J. W.**, and Deisseroth, A. B. A temperature-sensitive mutant of human p53. *EMBO J.*, 13:2535-2544, 1994.
87. Tam, S.W., Theodoras, A.M., **Shay, J. W.**, Draetta, G.F., and Pagano, M. Differential expression and regulation of cyclin D1 protein in normal and tumor human cells: association with Cdk4 is required for cyclin D1 function in G1 progression. *Oncogene*, 9:2663-2674, 1994.
88. Tam, S. W., **Shay, J. W.**, and Pagano, M. Differential expression and cell cycle regulation of the Cdk4 inhibitor p16<sup>ink4</sup>. *Cancer Res.*, 54:5816-5820, 1994.
89. Nielsen, T. O., Piatyszek, M. A., **Shay, J. W.**, Pearson, C. E., Zannis-Hadjopoulos, M. and Price, G. B. Autonomous replication activity of a mitochondrial DNA sequence inserted into genomic DNA. *Int. J. Oncol.*, 5:1003-1008, 1994.
90. Kim, N-W., Piatyszek, M. A., Prowse, K. R., Harley, C. B., West, M. D., Ho, P. L. C., Coviello, G. M., Wright, W. E., Weinrich, S. L., and **Shay J. W.** Specific association of human telomerase activity with immortal cells and cancer. *Science*, 266:2011-2015, 1994.
91. Wilson, S. E., Weng, J., Chwang, E. L., Gollahon, L., Leitch, A. M., and **Shay, J. W.** Hepatocyte growth factor (HGF), keratinocyte growth factor (KGF), and their receptors in human breast cells and tissues: alternative HGF and KGF receptors. *Cell. Mol. Biol.*, 40:337-350, 1994.
92. Li, Y., Nichol, M. A., **Shay, J. W.**, and Xiong, Y. Transcriptional repression of cyclin-dependent kinase inhibitor p16 by the retinoblastoma susceptibility gene product, pRb. *Cancer Res.*, 54:6078-6082, 1994.
93. **Shay, J. W.**, G. Tomlinson, M. A. Piatyszek, and Gollahon, L. S. Spontaneous in vitro immortalization of breast epithelial cells from a Li-Fraumeni patient. *Mol. Cell. Biol.*, 15:425-432, 1995.
94. Hiyama, E., Hiyama, K., Yokoyama, T., Matsuura, Y., Piatyszek, M. A. and **Shay, J. W.** Correlating telomerase activity levels with human neuroblastoma outcomes. *Nature Med.*, 1:249-257, 1995.
95. Franch, H. A., **Shay, J. W.**, Alpern, R. J., and P. A. Preisig. Rb plays an important role in TGF-dependent renal epithelial cell hypertrophy. *J. Cell Biol.*, 129:245-454, 1995.
96. Kim, N-W., Harley, C. B., Prowse, K. R., Weinrich, S. L., Piatyszek, M. A., Wright, W. E., and **Shay J. W.** Telomeres, telomerase and cancer. *Science*, 268:1115-1117, 1995.
97. Piatyszek, M. A., Kim N. W., Weinrich S. L., Hiyama, K., Hiyama, E., Wright W. E., **Shay, J. W.** Detection of telomerase activity in human cells and tumors by a telomeric repeat amplification protocol (TRAP). *Methods Cell Sci.*, 17:1-15, 1995.
98. Wright, W. E. and **Shay, J. W.** Time, telomeres and tumours: is cellular senescence more than an anticancer mechanism? *Trends Cell Biol.*, 5:293-297. 1995.

## Jerry W. Shay

99. Hiyama, K., Hiyama, E., Ishioka, S., Yamakido, M., Inai, K., Gazdar, A. F., Piatyszek, M. A., **Shay, J. W.** Telomerase activity in small-cell and non-small-cell lung cancers. *J. Natl. Cancer Inst.*, 87:895-902, 1995.
100. **Shay, J. W.** Telomeres, telomerase and tumors. *Cope*, 11:46-48, 1995.
101. Tahara, H., Nakanishi, T., Kitamoto, M., Nakashio, R., **Shay, J. W.**, Tahara, E., Kajiyama, G., and Ide, T. Telomerase activity in human liver tissues: comparison between chronic liver disease and hepatocellular carcinomas. *Cancer Res.*, 55:2734-2736, 1995.
102. Hiyama, E., Yokoyama, T., Tatsumoto, N., Hiyama, K., Imamura, Y., Murakami, Y., Kodama, T., Piatyszek, M. A., **Shay, J. W.**, Matsuura, Y. Telomerase activity in gastric cancer. *Cancer Res.*, 55:3258-3262, 1995.
103. Allsopp, R. C., Chang, E., Kashhefi-Aazam, M., Rogaev, E. I., Piatyszek, M. A., **Shay, J. W.**, Harley, C. B. Telomere shortening associated with cell division *in vitro* and *in vivo*. *Exp. Cell Res.*, 220:194-200, 1995.
104. **Shay, J. W.**, Werbin, H., and Wright, W. E. You haven't heard the end of it: Telomere loss may link human aging and cancer. *Can. J. Aging*, 14:511-524, 1995.
105. Wright, W. E., **Shay, J. W.**, and Piatyszek, M. A. Modification of a telomeric repeat amplification protocol (TRAP) results in increased reliability, linearity and sensitivity. *Nuc. Acids Res.*, 23:3794-3795, 1995.
106. Hiyama, K., Hirai, Y., Kyoizumi, S., Akiyman, M., Hiyama, E., Piatyszek, M. A., **Shay, J. W.**, Ishioka, S., and Yamakido, M. Activation of telomerase in human lymphocytes and hematopoietic progenitor cells. *J. Immunol.*, 155:3711-3715, 1995.
107. Ohmura, H., Tahara, H., Suzuki, M., Ide, T., Shimizu, M., Yoshida, M. A., Tahara, E., **Shay, J. W.**, Barrett, J. C., Oshimura, M. Restoration of the cellular senescence program and repression of telomerase by chromosome 3. *Jpn. J. Cancer Res.*, 86:899-904 1995.
108. Langford, L. A., Piatyszek, M. A., Xu, R., Schold, S. C., and **Shay, J. W.** Telomerase activity in human brain tumors. *Lancet*, 346:1267-1268, 1995.
109. **Shay, J. W.** Aging and cancer: Are telomeres and telomerase the connection? *Mol. Med. Today*, 1:378-384, 1995. (issue cover image)
110. Zhang, W., Randawa, G. S., Gau, J., McClain, C. D., Guo, X.-Y., **Shay, J. W.**, and Deisseroth, A. B. The first intron of human H-ras is regulated by p53: Specific activation mediated by a p53-binding element and general repression by the N-terminus of p53. *Int. J. Oncol.*, 7:1021-1028, 1995.
111. Tahara, H., Kuniyasu, H., Yasui, W., Yokozaki H., **Shay, J. W.**, Ide, T., and Tahara, E. Telomerase activity in preneoplastic and neoplastic gastric and colorectal lesions. *Clin. Cancer Res.*, 1:1245-1251, 1995.

## **Jerry W. Shay**

112. Sommerfeld, H.-J., Meeker, A. K., Piatyszek, M. A., Bova, G. S., **Shay, J. W.**, and Coffey, D. S. Telomerase activity: A prevalent marker of malignant human prostate tissue. *Cancer Res.*, 56:218-222, 1996.
113. Hiyama, E., Gollahon, L., Kataoka, T., Kutoi, K., Yokoyama, T., Gazdar, A.F., Hiyama, K., Piatyszek, M. A., and **Shay, J. W.** Telomerase activity in human breast tumors. *J. Natl. Cancer Inst.*, 88:116-122, 1996.
114. **Shay, J.W.** and Wright, W.E. Telomerase activity in human cancer. *Curr. Opin. Oncol.*, 8:66-71, 1996.
115. Holt, S. E., Gollahon, L. S., Willingham, T., Barbosa, M. S., and **Shay, J. W.** p53 levels in human mammary epithelial cells expressing wild-type and mutant human papillomavirus type 16 (HPV-16) E6 proteins: relationship to reactivation of telomerase and immortalization. *Int. J. Oncol.*, 8:262-270, 1996.
116. Avilion, A. A., Piatyszek, M. A., Gupta, J., **Shay, J. W.**, Bacchetti, S., and Greider, C. W. Human telomerase RNA levels in immortal cell lines and tumor tissues. *Cancer Res.*, 56:645-650, 1996.
117. Wright, W. E., Piatyszek, M. A., W. E. Rainey, W. Byrd, and **Shay, J. W.**, Telomerase activity in human germline and embryonic tissues and cells. *Dev. Genet.*, 18:173-179, 1996.
118. **Shay, J. W.** and Wright, W. E. Mechanisms of escaping human cellular senescence. *Radiation Oncol. Investig.*, 3:284-289, 1996.
119. Gollahon, L. and **Shay, J. W.** Immortalization of human mammary epithelial cells transfected with mutant p53 (273his). *Oncogene*, 12:715-726, 1996.
120. Wright, W. E., Brasiskyte, D., Piatyszek, M. A., **Shay, J. W.** Experimental elongation of telomeres in immortal human cells extends the lifespan of immortal x normal cell hybrids. *EMBO J.*, 15:1734-1741, 1996.
121. Ohyashiki, J.H, Ohyashiki, K., Toyama, K., and **Shay, J.W.** A non-radioactive fluorescence-based telomeric repeat amplification protocol to detect and quantitate telomerase activity. *Trends Genet.*, 12:395-396, 1996.
122. Ohyashiki, K. Ohyashiki, J. H., Iwama, H., Hayashi, S., **Shay, J.W.** and Toyama, K. Telomerase reactivation in leukemia cells. *Int. J. Oncol.*, 8:417-421, 1996.
123. **Shay, J.W.** and Wright, W.E. The reactivation of telomerase activity in cancer progression. *Trends Genet.*, 12:129-131, 1996.
124. Taylor, R. S., Ramirez, R. D., Ogoshi, M., Chaffins, M., Piatyzsek, M. A. and **Shay, J. W.** Telomerase activity in malignant and nonmalignant skin conditions. *J. Invest. Dermatol.*, 106:759-765, 1996.

## Jerry W. Shay

125. Zhang, W., Piatyszek, M.A., Estey, E., Kobayashi, T., Andreff, M., Deisseroth, A.B., Wright, W.E., and **Shay, J.W.** Telomerase activity in acute myelogenous leukemia: Inhibition of telomerase activity by differentiation-inducing agent. *Clin. Cancer Res.*, 2:799-803, 1996.
126. West, M.D., **Shay, J.W.**, Wright, W.E., and Linksken, M.H.K. Altered expression of plasminogen activator and plasminogen activator inhibitor during cellular senescence. *Exp. Gerontol.*, 31:175-193, 1996.
127. Yan, Y., Ouellette, M.M., **Shay, J.W.**, and Wright, W.E. Age dependent alterations in *c-fos* and growth regulation in human fibroblasts expressing HPV16 E6 protein. *Mol. Biol. Cell*, 7:975-983, 1996.
128. Holt, S.E., Wright, W.E., and **Shay, J.W.** Regulation of telomerase activity in immortal cell lines *Mol. Cell Biol.*, 16:2932-2939, 1996.
129. Norton, J.C., Piatyszek, M.A., Wright, W.E., **Shay, J.W.** and Corey, D.R. Inhibition of human telomerase activity by peptide nucleic acid oligomers. *Nature Biotech.*, 14:615-619 1996.
130. Holt, S.E., **Shay, J.W.** and Wright, W.E. Refining the telomere-telomerase hypothesis of aging and cancer. *Nature Biotech.*, 14:836-839, 1996. (issue cover image)
131. Pandita, T.K., Hall, E.J., Hei, T.K., Piatyszek, M.A., Wright, W.E., Piao, C.Q., Pandita, R.K., Willey, J.C., Geard, C.R., Kastan, M.B., and **Shay, J.W.** Chromosome end-to-end associations and telomerase activity during cancer progression in human cells after treatment with  $\alpha$ -particles simulating radon progeny. *Oncogene*, 13:1423-1430, 1996.
132. Hiyama, E., Hiyama, K., Tatsumoto, N., **Shay, J.W.**, and Yokoyama, T. Telomerase activity in human intestine. *Int. J. Oncol.*, 9:453-458, 1996.
133. Mehle, C., Piatyszek, M.A., Ljungberg, B., **Shay, J.W.**, and Roos, G. Telomerase activity in human renal cell carcinoma. *Oncogene*, 13:161-166, 1996.
134. **Shay, J.W.**, Werbin, H., and Wright, W.E. Telomeres and telomerase in human leukemias. *Leukemia*, 10:1255-1261, 1996.
135. Holt, S.E., Norton, J.C., Wright, W.E. and **Shay, J.W.** Comparison of the telomeric repeat amplification protocol (TRAP) to the new TRAP-eze telomerase detection kit. *Methods Cell Sci.*, 18:237-248, 1996.
136. Langford, L.A., Piatyszek, M.A., Xu, R., Schold, S.C., Wright, W.E., and **Shay, J.W.** Telomerase activity in ordinary meningiomas predicts poor outcome. *Hum. Path.*, 28:416-420, 1997.
137. Ramirez, R.D., Wright, W.E., **Shay, J.W.** and Taylor R.S. Telomerase activity concentrates in the mitotically active segments of human hair follicles. *J. Invest. Dermatol.*, 108:113-117, 1997.

## Jerry W. Shay

138. Pandita, T.K., Benvenuto, J. A., **Shay, J.W.**, Pandita, R.K., Rakovitch, E., Geard, C.R., Antman, K.H., and Newman, R.A. Effect of penclomedine (NSC-338720) on telomere fusions, chromatin blebbing, and cell viability in human cells with and without telomerase activity and abrogated p53 function. *Biochem Pharm.*, 53:409-415, 1997.
139. Hiyama, E., Kodama, T., Shimbara, K., Ito, M. Hiyama, K., **Shay, J.W.**, Matsuura, Y., and Yokoyama, T. Telomerase activity is detected in pancreatic cancer but not in benign pancreatic lesions. *Cancer Res.*, 57:326-331, 1997.
140. Yashima, K., Piatyszek, M.A., Saboorian, H.M., Virmani, A.K., Brown, D., **Shay, J.W.** and Gazdar, A.F. Expression of telomerase activity and in situ telomerase RNA expression in malignant and non-malignant lymph nodes. *J. Clin. Path.*, 50:110-117, 1997.
141. Miura, N., Horkawa, I., Suzuki, M., Ohmura, H., Ito, H., Hirohashi, S., **Shay, J.W.**, and Oshimura, M. Progressive telomere shortening and telomerase reactivation during hepatocellular carcinoma. *Cancer Gen. Cytogen.*, 93:56-62, 1997.
142. Ohyashiki, K. Ohyashiki, J. H., Iwama, H., Hayashi, S., **Shay, J.W.** and Toyama, K. Telomerase activity and cytogenetic changes in chronic myeloid leukemia with disease progression. *Leukemia*, 11:190-194, 1997.
143. Holt, S.E, Wright, W.E., and **Shay, J.W.** Multiple pathways for the regulation of telomerase. *Eur. J. Cancer.* 33:761-766, 1997.
144. Roque, R.S., Agarwal, N., Wordinger, R. J., Brun A. M., Xue, Y., Nguyen, L. P., and **Shay, J. W.** Human papillomavirus-16 E6/E7 transfected retinal cell line expresses the Muller cell phenotype. *Exp. Eye Res.*, 64:519-527, 1997.
145. Yashima, K., Litzky, L.A., Kaiser, L., Rogers, T., Lam, S., Wistuba, I., Milchgrub, S., Srivastava, S., Piatyszek, M.A., **Shay, J.W.** and Gazdar, A.F. Telomerase expression in bronchial epithelium during multistage pathogenesis of lung carcinomas. *Cancer Res.*, 57:2373-2377, 1997.
146. Ohyashiki, J.H., Ohyashiki, K. Iwama, H., Hayashi, S., Toyama, K, and **Shay, J.W.** Clinical implications of telomerase activity levels in acute leukemia. *Clin. Cancer Res.*, 3:619-625, 1997.
147. Ohyashiki, K., Ohyashiki, J., Nishimaki, J., Toyama, K., Ebihara, Y., Wright, W.E. and **Shay, J.W.** Cytological detection of telomerase activity using an *in situ* telomeric repeat amplification protocol assay. *Cancer Res.*, 57:2100-2103, 1997.
148. Yan, Y., **Shay, J.W.**, Wright, W.E., and Mumby, M.C. Inhibition of protein phosphatase activity induces p53-dependent apoptosis in the absence of p53 transactivation. *J. Biol. Chem.*, 272:15520-15526, 1997.
149. **Shay, J.W.** and Gazdar, A.F. Telomerase in the early detection of cancer. *J. Clin. Path.*, 50:106-109, 1997.

## Jerry W. Shay

150. Iwama, H., Ohyashiki, K., Ohyashiki, J., Hayashi, S., Kawakubo, K., **Shay, J.W.**, Toyama, K. A relationship between telomere length and therapy-associated cytogenetic responses in chronic myeloid leukemia. *Cancer*, 79:1552-1560, 1997.
151. **Shay, J.W.** and Bacchetti, S.. A survey of telomerase in human cancer. *Eur. J. Cancer*, 33:787-791, 1997.
152. Faraoni, I., Turriziana, M., Giovanna, M., deVecchis, L., Bonmassar, E., **Shay, J.W.** and Graziani, G. Decline in telomerase activity as a measure of tumor cell killing by antineoplastic agents *in vitro*. *Clin. Cancer Res.*, 3:579-585, 1997.
153. Kobayashi, T., Clodi, K., Yang, Y., Ruan, S., Shiku, H., **Shay, J.W.**, Andreef, M. and Zhang, W. Inhibition of telomerase activity correlates with a decrease in the RNA component of telomerase during differentiation. *Int. J. Oncol.*, 11:13-17, 1997.
154. Ahmadian, M., Wistuba, I.I., Fong, K.M., Behrens, C., Kodagoda, D.R., Saboorian, M.H., **Shay, J.W.**, Tomlinson, G.E., Blum, J., Minna, J.D., Gazdar, A.F. Analysis of the *FHIT* gene and *FRA3B* region in sporadic breast cancer, preneoplastic lesions and familial breast cancer probands. *Can. Res.*, 57:3664-3669, 1997.
155. Holt, S.E., Aisner, D.L., **Shay, J.W.**, and Wright, W.E. Lack of cell cycle regulation of telomerase activity in human cells. *Proc. Natl. Acad. Sci. USA*, 94:10687-10692, 1997.
156. Hiyama, E., Hiyman, K., Ohtsu, K., Yamaoka, H., Ichikawa, T., **Shay, J.W.**, Yokoyama, T. Telomerase activity in neuroblastoma: Is it a prognostic indicator of clinical behavior? *Eur. J. Cancer*, 33:1932-1936, 1997.
157. Coursen, J.D., Bennett, W.P., Gollahon, L., **Shay, J.W.**, and Harris, C.C. Genomic instability and telomerase activity in human bronchial epithelial cells during immortalization by human papillomavirus-16 E6 and E7 genes. *Exp. Cell Res.*, 235:245-253, 1997.
158. Wright, W.E., Tesmer, V.M., Hoffman, K.E., Levene, S.D. and **Shay, J.W.** Normal human chromosomes have long G-rich telomeric overhangs at one end. *Genes and Devel.*, 11:2801-2809, 1997.
159. **Shay, J.W.** Telomerase in human development and cancer. *J. Cell. Physiol.*, 173:266-270, 1997.
160. Iwao, T., Hiyama, E., Yokoyama, T., Tsuchida, A., Hiyama, K., Sasaki, T., Shimamoto, F., **Shay, J.W.**, Gajiyama, G. Telomerase activity for the preoperative diagnosis of pancreatic cancer. *J. Natl. Cancer Inst.*, 89:1621-1623, 1997.
161. Hamilton, S.E., Pitts, A., Katipally, R., Jia, X., Rutter, J., Davis B.A., **Shay, J.W.**, Wright, W.E. and Corey, D.R. Identification of determinants for inhibitor binding within the RNA active site of human telomerase using PNA scanning. *Biochem.*, 36:11873-11880, 1997.

## Jerry W. Shay

162. Rushing, E.J., Yashima, K., Brown, D.F., White, C.L., **Shay, J.W.**, Risser, R.C., Gazdar, A.F. Expression of telomerase RNA component correlates with the MIB-1 index in ependymomas. *J. Neuropath. Exp. Neur.*, 56:1142-1146, 1997.
163. Brown, D.F., Gazdar, A.F., Dababo, M.A., Yashima, K., **Shay, J.W.**, White, C.L., Eagan, K.P., Hladik, C.L., Rushing, E.J. Human telomerase RNA expression and MIB-1 (Ki-67) proliferation index distinguish hemangioblastomas from metastatic renal cell carcinoma. *J. Neuropath. Exp. Neur.*, 56:1349-1355, 1997.
164. Weinrich, S.L., Pruzan, R., Ma, L., Ouelette, M., Tesmer, V.M., Holt, S.E., Bodnar, A., Lichtsteiner, S., Trager, J., Taylor, R.D., Carlos, R., Andrews, W. H., Wright, W.E., **Shay, J.W.**, Harley, C.B., Morin, G.B. Reconstitution of human telomerase with the catalytic protein subunit hTERT. *Nature Gen.* 17:498-502, 1997.
165. Simmons, C.G., Pitts, A.E., Mayfield, L.D., **Shay, J.W.**, Corey, D. R. Synthesis and membrane permeability of PNA-peptide conjugates. *Bioorganic Med. Chem.*, 7:3001-3006, 1997.
166. Yamanishi, Y., Hiyama, K., Maeda, H., Ishioka, S., Murakami, T., Hiyama, E., Kurose, Y., **Shay, J.W.**, and Yamakido, M. Telomerase activity in rheumatoid synovium correlates with the mononuclear cell infiltration level and disease aggressiveness of rheumatoid arthritis. *J. Rheumatol.*, 25:214-220, 1998.
167. Bodnar, A.G., Ouellete, M., Frolkis, M., Holt, S.E., Chiu, C-P., Morin, G.B., Harley, C.B., **Shay, J.W.**, Lichtsteiner, S., and Wright, W.E. Extension of lifespan by introduction of telomerase in normal human cells. *Science*, 279:349-352, 1998.
168. Yashima, K., Milchgrub, S., Gollahon, L., Maitra, A., Saboorian, H., **Shay, J.W.**, Gazdar, A.F. Telomerase expression during multistage pathogenesis of breast carcinoma. *Clin. Can. Res.*, 4:229-234, 1998.
169. Yashima, K., Maitra, A., Timmons, C.F., Rogers, B.B., Pinar, H., **Shay, J.W.**, Gazdar, A.F. Expression of the RNA component of telomerase in Wilm's tumor and its precursor lesion recapitulates renal embryogenesis. *Hum. Path.*, 28:536-542, 1998.
170. Yashima, K., Ashfaq, R., Nowak, J., Von Gruenigen, V., Milchgrub, S., Rathi, A., Albores-Saavedra, J., **Shay, J.W.**, Gazdar, A.F. Telomerase activity and expression of its RNA component in cervical lesions. *Cancer*, 82:1319-1327, 1998.
171. Norton, J.C., Gollahon, L.S., Holt, S.E., Wright, W.E. **Shay, J.W.** Enhanced detection of telomerase activity in tumor derived human cell lines. *DNA and Cell Biol.*, 17:217-219, 1998.
172. Iwama, H., Ohyashiki, K., Ohyashik, J., Hayashi. S., Yahata, N., Ando, K., Toyama, K., Hoshika, A., Takasaki, M., **Shay, J.W.** Telomere length and telomerase activity vary with age in peripheral blood cells obtained from normal individuals. *Human Gen.*, 102:397-402, 1998.
173. Egan, C.A., Savre-Train, I., **Shay, J.W.**, Wilson, S.E., Bourne, W.M. Analysis of telomere lengths in human corneal endothelial cells from donors of different ages. *Invest. Ophthalmol. Vis. Sci.*, 39:648-653, 1998.

## Jerry W. Shay

174. Yahata, N., Ohyashiki, K., Ohyashiki, J., Iwama, H., Hayashi, S., Ando, K., Hirano, T., Tsuchida, T., Kata, H., **Shay, J.W.**, Toyama, K. Telomerase activity is detected in lung cancer cells obtained from bronchial washings. *J. Natl. Cancer Inst.*, 90:684-690, 1998.
175. Pearson, A.S., Gollahon, L.S., O'Neal, N.C., Saboorian, H., **Shay, J.W.**, and Fahey, T.J. Detection of telomerase activity in breast masses by fine needle aspiration. *Ann. Surg.*, 5:186-193, 1998.
176. Hiyama, K., Ishioka, S., **Shay, J.W.**, Taooka, Y., Maeda, A., Isobe, T., Hiyama, E., Maeda, H., Yamakido, M. Telomerase activity as a novel marker of lung cancer and immune-associated lung disease. *Int. J. Mol. Medicine*, 1:545-549, 1998.
177. Ogoshi, M., **Shay, J.W.**, Taylor, R. S. *In situ* hybridization analysis of the expression of human telomerase RNA in normal and pathological conditions of the skin. *J. Invest. Dermatol.*, 110:818-823, 1998.
178. Morales, C.P., Lee, E.L., **Shay, J.W.** *In situ* hybridization for the detection of telomerase RNA in the progression from Barrett's esophagus to esophageal adenocarcinoma. *Cancer*, 83:652-659, 1998.
179. Muller, M., Krause, H., Heicappell, R., Tischendorf, J., **Shay, J.W.**, Miller, K. Detection of human telomerase RNA (hTR) and telomerase activity in urine for diagnosis of bladder cancer. *Clin. Can. Res.*, 4:1949-1954, 1998.
180. Tomlinson, G.E., Chen, T., Stastny, V.A., Virmani, A.K., Spillman, M.A., Tonk, V., Blum, J.L., Schneider, N.R., Wistuba, I.I., **Shay, J.W.**, Minna, J.D., Gazdar, A.F. Characterization of a breast cancer cell line derived from a germline BRCA1 mutation carrier. *Cancer Res.*, 58:3237-3242, 1998.
181. Gollahon, L.S., Kraus, E., Wu, T-A., Yim, S.O., Wright, W.E., Strong, L.C., **Shay, J.W.**, Tainsky, M.A. Telomerase activity status during spontaneous immortalization of Li-Fraumeni skin fibroblasts. *Oncogene*, 17:709-718, 1998.
182. Gazdar, A.F., Kurvari, V., Virmani, A.K., Gollahon, L.S., Sakaguchi, M, Westerfield, M., Kodagoda, D., Stasny, V., Cunningham, T., Wistuba, I., Tomlinson, G., Tonk, V., Ashfaq, R., Minna, J.D., and **Shay, J.W.** Characterization of paired tumor and non-tumor cell lines established from patients with breast cancer. *Intern. J. Can.*, 78:766-774, 1998.
183. Yashima, K., Maitra, A., Timmons, C.F., Rogers, B.B., Pinar, H., Milchgrub, S., Wright, W.E., **Shay, J.W.**, Gazdar, A.F. Expression of the RNA component of human telomerase during development and differentiation. *Cell Growth and Diff.*, 9:805-813, 1998.
184. Morales, C.P., Burdick, J.S., Saborrian, M. H., Wright, W. E., and **Shay, J. W.** Telomerase RNA by *in situ* hybridization in routine cytological brushings for the diagnosis of pancreaticobiliary malignancies. *Gastro. Endoscop.*, 48:402-405, 1998.

## Jerry W. Shay

185. Maitra, A., Yashima, K., Rathi, A, Timmons, C.F., Rogers, B.B., **Shay, J.W.**, Gazdar, A. F. The RNA component of telomerase as a marker of biologic potential and clinical outcome in neuroblastic tumors. *Cancer*, 85:741-749, 1999.
186. Liu, J.J., **Shay, J.W.**, and Wilson, S.E. Expression and characterization of a soluble KGF receptor cDNA isolated from human corneal and breast epithelial cells. *Invest. Ophthalmol. Vis Sci.*, 39:2584-2593, 1998.
187. Morales, C.P., Holt, S.E., Ouellette, M., Kaur, K.J., Wilson, K.S., White, M.A., Wright, W. E. and **Shay, J.W.** Lack of cancer-associated changes in human fibroblasts after immortalization with telomerase. *Nature Gen.*, 21:115-118, 1999.
188. **Shay, J.W.** Toward identifying a cellular determinant of telomerase repression. *J. Natl. Can. Instit.*, 91:4-6, 1999.
189. Ramirez, R.D., D'Atri, S., Pagani, E., Faraggiana, T., Lacal, P.M., Taylor, R.S., and **Shay, J.W.** Progressive increase in telomerase activity from benign melanocytic conditions to malignant melanoma. *Neoplasia*, 1:42-49, 1999.
190. Ouellette, M.M., Aisner, D.L., Savre-Train, I., Wright, W.E., **Shay, J.W.** Telomerase activity does not always imply telomere maintenance. *Biochem. Biophys. Res. Comm.*, 254:795-803, 1999.
191. Holt, S.E., Aisner, D.L., Baur, J., Tesmer, V.M., Dy, M., Ouellette, M., Trager, J., Morin, G.B., Toft, D.O., **Shay, J.W.**, Wright, W.E., White, M. Functional requirement of p23 and hsp90 in telomerase complexes. *Genes and Dev.*, 13:817-826, 1999.
192. Hiyama, E., Hiyama, K., Yokoyama, T., Fukuba, I., Yamaoka, H., **Shay, J.W.**, Matsuura, Y. Rapid detection of *MYCN* gene amplification and telomerase expression in neuroblastoma. *Clin. Can. Res.*, 5:601-609, 1999.
193. Yi, X., Tesmer, V.M., Savre-Train, I., **Shay, J.W.**, Wright W. E. Both transcriptional and post-transcriptional mechanisms regulate telomerase template RNA (hTR) levels. *Mol. Cell Biol.*, 19:3989-3997, 1999.
194. Holt, S.E. and **Shay, J.W.** Role of telomerase in cellular proliferation and cancer. *J. Cell. Physiol.*, 180:10-18, 1999.
195. Ohyashiki, J.H., Iwama, H., Yahata, N., Ando, K., Hayashi, S., **Shay, J.W.**, Ohyashiki, K. Telomere stability is frequently impaired in high risk groups of patients with myelodysplastic syndromes. *Clin. Can. Res.*, 5:1155-1160, 1999.
196. Tesmer, V.M., Ford, L.P., Holt, S.E., Frank, B.C., Yi, X., Aisner, D.L., Ouellette, M.M., **Shay, J.W.**, Wright, W.E. Two inactive fragments of the integral RNA cooperate to assemble active telomerase with the human protein catalytic subunit (hTERT) in vitro. *Mol. Cell. Biol.*, 19:6207-6216, 1999.

## **Jerry W. Shay**

197. Larranos, T.C., Mathis, J.M., Latham, S.E., Kalionis, B., **Shay, J.W.**, Rodgers, R.J. Telomerase activity and localization of the telomerase RNA component of bovine ovarian follicle. *Biol. Reproduction*, 61:358-366, 1999.
198. Wright, W.E., Tesmer, V., Liao, M., **Shay, J.W.** Normal human telomeres are not late replicating. *Exp. Cell Res.*, 251:492-499, 1999.
199. Herbert, B-S, Pitts, A.E., Baker, S.I., Hamilton, S.E., Wright, W.E., **Shay, J.W.**, Corey, D.R. Inhibition of human telomerase in immortal human cells leads to progressive telomere shortening and cell death. *Proc. Nat. Acad. Sci.*, 96:14276-14281, 1999.
200. **Shay, J.W.** At the end of the millennium a view of the end. *Nature Genet.*, 23:382-383, 1999.
201. Itoi, T, Ohyashiki, K., Yahata, N., Shinohara, Y., Takeda, K., Takei, K., Nagao, K., Hisatomi, H., Ebihara, Y., **Shay, J.W.**, Saito, T. Detection of telomerase in exfoliated cancer cells obtained from bile. *Int. J. Oncology*, 15:1061-1067, 1999.
202. **Shay, J.W.** and Wright, W.E. Mutant dyskerin ends relationship with telomerase. *Science*, 286:2284-2285, 1999.
203. **Shay, J.W.** and Wright W.E. The use of “telomerized” cells for tissue engineering. *Nature Biotech.*, 18:22-23, 2000.
204. Ouellette, M.M., McDaniel, L., Wright, W.E., **Shay, J.W.**, and Shultz, R. The establishment of telomerase immortalized cell lines representing human chromosome instability syndromes. *Human Mol. Genetics*, 9:403-411, 2000.
205. Ouellette, M.M., Liao, M., Herbert, B-S., Johnson, M., Holt, S.E., Liss, H.S., **Shay, J.W.** and Wright, W.E. Sub-senescent telomere lengths in fibroblasts immortalized by limiting amounts of telomerase *J. Biol. Chem.*, 275:10072-10076, 2000.
206. **Shay, J.W.** and Wright W.E. Implications of mapping the human telomerase genes (hTERT) as the most distal gene on chromosome 5p. *Neoplasia*, 2:195-196, 2000.
207. Zhao, S., Weng, Y.-C., Yuan, S.-S., Lin, Y.-T., Hsu, H.-C., Lin, S.-C, Gerbino, E., Song, M.-H., Zdienicka, M.Z., Gatti, R., **Shay, J.W.**, Ziv, Y., Shiloh, Y., Lee, E.Y.-H. Functional link between ataxia-telangiectasia and Nijmegen breakage syndrome gene products. *Nature*, 405:473-477, 2000.
208. Tatsumoto, N. Hiyama, E., Murakami, Y., Imamura, Y., **Shay, J.W.**, Matsuura, Y., Yokoyama, T. High telomerase activity is an independent prognostic indicator of poor outcome in colorectal cancer. *Clinical Cancer Res.*, 6:2696-2701, 2000.
209. Huffman, K.E., Levene, S.D., Tesmer, V.M., **Shay, J.W.**, and Wright W.E. Telomere shortening is proportional to the size of the 3' G-rich telomeric overhang. *J. Biol. Chem.*, 275:19719-19722, 2000.

## **Jerry W. Shay**

210. Wright, W.E. and **Shay, J.W.** Fundamental differences in human and mouse telomere biology. *Nature Medicine*, 6:849-851, 2000.
211. Steinert, S., **Shay, J.W.** and Wright W.E. Transient expression of human telomerase (hTERT) extends the life span of normal human fibroblasts. *Biochem. Biophys. Res. Com.*, 273:1095-1098, 2000.
212. Hiyama, E., Saeki, T., Hiyama, K., Takashima, S. **Shay, J.W.**, Matsuura, Y, Yokayama, T. Telomerase activity as a marker of breast carcinoma in fine-needle aspirated samples. *Cancer Cytopathology*, 90: 235-238, 2000.
213. **Shay, J.W.** and Wright, W.E. Hayflick, his limit and cellular ageing. *Nature Reviews: Molecular Cell Biol.*, 1:72-76, 2000.
214. Ford, L.P., Suh, M.J. Wright, W.E., and **Shay, J.W.** Heterogeneous nuclear ribonucleoproteins C1 and C2 associate with human telomerase *Mol. Cell Biol.*, 20: 9084-9091, 2000.
215. McChesney, PA., Aisner, D.L., Ford, L.P., Wright, W.E., and **Shay, J.W.** Telomere dynamics in cells with introduced telomerase: a rapid assay for telomerase on telomeres. *Mol. Cell Biol. Res. Com.*, 3:312-318, 2000.
216. Yi, X., White, D. M., Aisner, D. L, Baur, J. A., Wright, W.E., and **Shay, J.W.** An alternate splicing variant of the human telomerase catalytic subunit inhibits telomerase. *Neoplasia*, 2:433-440, 2000.
217. Herbert, B.-S., Wright, A.C., Passons, C.M., Ali, I., Wright, W. E., Kopelovich, L, and **Shay, J.W.** Inhibition of the spontaneous immortalization of breast epithelial cells from individuals predisposed to breast cancer: Effects of chemopreventive and anti-telomerase agents. *J. Nat. Can. Inst.*, 93:39-45, 2001.
218. **Shay, J.W.** and Wright W.E. Telomeres and telomerase: implications for cancer and aging. *Radiation Res.*, 155:188-193, 2001.
219. Wood, L.D. Halvorsen, T.L., Dhar, S, Baur, J.A., Pandita, R.K., Wright, W.E., Hande, M. P. Calaf, G, Levine, F, **Shay, J.W.**, Wang, J.Y., and Pandita, T.K. Characterization of ataxia telangiectasia fibroblasts with extended life-span through telomerase expression. *Oncogene*, 20:278-288, 2001.
220. Nishimoto, A., Miura, N., Horikawa, I., Kugoh, H., Murakami, Y., Hirohashi, S., Kawasaki, H., Barrett, C.J. Gazdar, A.F., **Shay, J.W.**, and Oshimura, M. Evidence for a telomerase repressor gene on human chromosome 10p15.1 *Oncogene*, 20: 828-835, 2001.
221. Wright, W.E. and **Shay, J.W.** Cellular senescence as a tumor-protection mechanism: the essential role of counting. *Cur. Opin. Gen. Dev.*, 11:98-103, 2001.
222. Ramirez, R.D., Passons, C., Rohde, J., Morales, C.P., Herbert, B-S., **Shay, J.W.** and Wright, W.E. Putative telomere-independent mechanisms of replicative aging reflect inadequate growth conditions. *Genes and Dev.*, 15:398-403, 2001.

## Jerry W. Shay

223. Hiyama, E., Hiyama, K., Yokoyama, T. and **Shay, J.W.** Immunohistochemical detection of telomerase (hTERT) protein in human cancer tissues and a subset of cells in normal tissues. *Neoplasia*, 3:17-26, 2001. (issue cover image)
224. Ford, L.P., **Shay, J.W.** and Wright, W.E. The La antigen associates with the human telomerase ribonucleoprotein and influences telomere length *in vivo*. *RNA*, 7:1068-1075, 2001.
225. **Shay, J.W.** and Wright, W.E. When do telomeres matter? *Science*, 291:839-840, 2001.
226. **Shay, J.W.**, Zou, Y., Hiyama, E. and Wright, W.E. Telomerase and cancer *Human Mol. Gen.*, 10:677-685, 2001.
227. Komata, T, Kondo, Y., Hirohata, S., Koga, S., Srinivasa, M., Barna, B.P., Takakura, M., Inoue, M., Alnemri, E.S., Kyo, S, **Shay, J.W.**, and Kondo, S. Treatment of malignant glioma cells with the transfer of constitutively active caspase-6 using the human telomerase catalytic subunit (hTERT) gene promoter. *Cancer Res.*, 61:5796-5802, 2001.
228. Baur, J.A., Zou, Y., **Shay, J.W.** and Wright W.E. Telomere position effect in human cells *Science*, 292:2075-2077, 2001.
229. Ford, L.P., Zou, Y., Pongracz, K, Gryaznov, S.M., **Shay, J.W.** and Wright W.E. Telomere maintenance by telomerase can inhibit the ALT pathway in human cells *J. Biol. Chem.*, 276: 32198-32203, 2001.
230. Yang, L, Suwa, T., Wright. W.E., **Shay, J.W.** and Hornsby, P.J. Telomere shortening and decline in replicative potential as a function of donor age in human adrenocortical cells *Mech Ageing Dev.*, 122:1685-1694, 2001.
231. Gryaznov, S, Pongracz, K., Matray, T., Schultz, R., Pruzan, R., Aimi, J. Chin, A., Harley, C. B. Shea-Herbert, **Shay, J.W.**, Oshima, Y., Asai, A., and Yamashita, Y. Telomerase inhibitors – oligonucleotide phosphoramidates as potential therapeutic agents. *Nucleosides, Nucleotides, and Nucleic Acids*, 20:401-410, 2001.
232. Yi, X., **Shay, J. W.** and Wright, W.E. Quantitation of telomerase components and hTERT mRNA splicing patterns in immortal human cells. *Nucleic Acids Res.*, 29:4818-4825, 2001.
233. Herbert, B-S., Pongracz, K. **Shay, J.W.** and Gryaznov, S.M. Oligonucleotide N3'-P5' phosphoramidates as efficient telomerase inhibitors *Oncogene*, 21: 638-642, 2002.
234. Ford, L., Wright, W.E. and **Shay, J.W.** A model for heterogeneous nuclear ribonucleoproteins in telomere and telomerase regulation *Oncogene*, 21: 580-583, 2002.
235. Steinert, S., White, D.M., Zou, Y., **Shay, J.W.** and Wright, W.E. Telomere biology and cellular aging in non-human primate cells *Exp. Cell Res.*, 272:146-152, 2002.
236. Aisner, D.L., Wright. W.E. and **Shay, J.W.** Telomerase regulation: Not just flipping the switch *Cur. Opin. Gen. Dev.*, 12:80-85, 2002. (issue cover image)

## **Jerry W. Shay**

237. Forsyth, N.R, Wright. W.E., and **Shay, J.W.** Telomerase and differentiation in multicellular organisms: Turn it off, turn it on, and turn it off again *Differentiation*, 69:188-197, 2002. (issue cover image)
238. Condon, J, Yin, S., Mayhew, B., Word, R.A., Wright, W.E., **Shay, J.W.** and Rainey, W. E. Telomerase immortalization of human myometrial cells, *Biol. Reprod.*, 67:506-514, 2002.
239. **Shay, J.W.** and Wright. W.E. Historical claims and current interpretations of replicative aging. *Nature Biotech.*, 20:682-688, 2002.
240. Zou, Y., Xiaoming, Y. Wright, W.E. and **Shay J.W.** Human telomerase can immortalize Indian muntjac cells. *Exp. Cell Res.*, 281:63-76, 2002. (issue cover image)
241. Herbert, B-S., Wright, W.E. and **Shay J.W.** p16<sup>ink4a</sup> inactivation is not required to immortalize human mammary epithelial cells *Oncogene*, 21:7897-7900, 2002.
242. **Shay, J.W.** and Wright, W. E. Telomerase: a target for cancer therapy *Cancer Cell*, 2:257-265, 2002.
243. Granger, M.P., Wright, W.E., and **Shay, J.W.** Telomerase in cancer and aging *Critical Reviews in Oncology/Hematology* 41:29-40, 2002.
244. Chai, W., Ford, L.P., Lenertz, L., Wright, W.E. and **Shay, J.W.** Human Ku70/80 physically associates with telomerase through interaction with hTERT *J. Biol.Chem.* 277:47242-47247, 2002.
245. Sharma, G.G., Gupta, G., Wang, H., Scherthan, H., Dhar, S., Gandhi, V., Iliakis, G., **Shay, J.W.**, Young, C.H., and Pandita, T.K., hTERT associates with human telomeres and enhances genomic stability and DNA repair *Oncogene* 22:131- 146, 2003.
246. Ramirez, R.D, Herbert, B-S., Vaughn, M.B, Zou, Y., Gandia, K., Morales, C.P., Wright, W.E. and **Shay J.W.** Bypass of telomere-dependent replicative senescence (M1) upon over expression of CDK4 in normal human epithelial *Oncogene*, 22:433-444, 2003.
247. Jester, J.V., Huang, J., Fisher, S., Spiekerman, J., Chang, J.H., Wright, W.E. and **Shay, J.W.** Myofibroblast differentiation of normal human keratocytes and hTERT, extended-life, human corneal fibroblasts *Investigative Ophthalmology & Visual Science* 44:1850-1858, 2003.
248. Morales, C.P., Gandia, K.G., Ramirez, R.D., Wright, W.E., **Shay, J.W.**, and Spechler, S.J. Characterization of telomerase-immortalized normal squamous human esophageal cells *GUT* 52:327-333, 2003.
249. Sengupta, S., Linke, S.P., Pedoux, R., Yang, Q., Farnsworth, J., Garfield, S., Valerie, K., **Shay, J.W.**, Ellis, N.A., Wasyluk, B., Harris, C.C. BLM helicase dependent transport of p53 to collapsed replication forks modulates homologous recombination *EMBO J* 22:1210-1222, 2003.

## **Jerry W. Shay**

250. Zhang, X., Multani, A.S., Zhou, J-H, **Shay, J.W.**, McConkey, D.M., Dong, L., Kim, C-S, Rosser, C.J., Pathak, S., and Benedict, W.F. Ad-RB94 produces rapid telomere erosion, chromosomal crisis and caspase dependent apoptosis in bladder cancer and immortalized human urothelial cells, but not in normal urothelial cells *Cancer Res.* 63:760-765, 2003.
251. Herbert, B-S., Pearce, V.P., Hynan, L.S., LaRue, D.M., Wright, W.E., Kopelovich, L., and **Shay, J.W.** A peroxisome proliferator-activated receptor-gamma agonist and the p53-rescue drug CP-31398 inhibit the spontaneous immortalization of breast epithelial cells *Cancer Res.* 63:1914-1919, 2003.
252. Wu, X., Amos, C.I., Zhu, Y., Zhao, H, Grossman, B.H., **Shay, J.W.**, Swan, G.E., Benowitz, N.L., Luo, S., and Spitz, M.R. Heritability of telomere length and its role in cancer predisposition. *J. Natl. Cancer Inst.*, 95:1211-1218, 2003.
253. Forsyth, N.R., **Shay, J.W.**, and Wright, W.E. WI-38 fibroblasts do not exhibit telomere-based replicative senescence under conventional growth conditions *Aging Cell*, 2:235-243, 2003.
254. Velicescu, M., Yu, J., Herbert, B-S, **Shay, J.W.**, Granada, E, and Dubeau, L. Aneuploidy and telomere attrition are independent determinants of crisis in SV40-transformed epithelial cells *Cancer Res*, 63:5813-5820, 2003.
255. **Shay, J.W.** Telomerase therapeutics: telomeres recognized as a DNA damage signal *Clinical Can Res*, 9:3521-3525, 2003 (issue cover image).
256. Pongracz K., Li S., Herbert B.S., Pruzan R., Wunder E., Chin A., Piatyszek M., **Shay J.W.**, Gryaznov S.M. Novel short oligonucleotide conjugates as inhibitors of human telomerase. *Nucleosides Nucleic Acids.* 22:1627-1629, 2003.
257. Bechter, O.E., Zou, Y., **Shay, J.W.** and Wright, W.E. Homologous recombination in human telomerase positive and ALT cells occurs with the same frequency. *EMBO Reports*, 4:1138-1143, 2003.
258. Hiyama, E., Hiyama, K., Nishyama, M., Reynold, C.P., **Shay, J.W.** and Yokoyama, T. Differential gene expression profiles between neuroblastomas with high telomerase activity and low telomerase activity. *J. Pediatric Surgery* 38:1730-1734, 2003.
259. Baur, J.A, **Shay, J.W.**, and Wright, W.E. Spontaneous reactivation of a silent telomeric transgene *Chromosoma: Biology of the Nucleus* 112:240-246, 2004.
260. **Shay, J.W.** and Roninson, I.B. Hallmarks of senescence in carcinogenesis and cancer therapy *Oncogene*, 23:2919-2933, 2004.
261. Forsyth, N.R., Morales, C.P., Damle, S., Boman, B., Wright, W.E., Kopelovich, L. and **Shay J.W.** Spontaneous immortalization of clinically normal colon-derived fibroblasts from a familial adenomatous polyposis (FAP) patient *Neoplasia*, 6:265-272, 2004. (issue cover image)
262. Steinert, S., **Shay, J.W.**, and Wright, W.E. Modification of subtelomeric DNA *Mol Cell Biology* 24:4571-4580, 2004.

## Jerry W. Shay

263. Bechter, O.E., **Shay, J.W.** and Wright, W.E. The frequency of homologous recombination in human ALT cells *Cell Cycle* 3:5-49-51, 2004.
264. Vaughn, M.B., Ramirez, R.D., Brown, S. Yang, J.C., Wright, W.E., and **Shay, J.W.** A reproducible laser-wounded skin equivalent model to study the effect of aging in vitro *Regeneration Medicine* 2:99-110, 2004.
265. Nishi, H., Nakada, T., Kyo, S., Inoue, M., **Shay, J.W.**, and Isaka, K. Hypoxia inducible factor (HIF)-1 mediates upregulation of telomerase (hTERT) *Mol. Cell Biology* 24:6076-6083, 2004.
266. Bechter, O, Zou, Y., Walker, W., Wright, W.E. and **Shay, J.W.** Telomeric recombination in MSH6 deficient human colon cancer cells following telomerase inhibition *Cancer Research*, 64:3444-3451 2004) (issue cover image).
267. **Shay, J.W.** and Wright, W. E. Telomeres in dyskeratosis congenita *Nature Genetics*, 36:437-438, 2004.
268. Walter, M. Forsyth, N.R., Wright, W.E., **Shay, J.W.**, Roth, M.G. The establishment of telomerase-immortalized Tangier disease cell lines indicates the existence of an apolipoprotein A-I-inducible but ABCA1-independent cholesterol efflux pathway *J Biol Chem*, 279:20866-20873, 2004.
269. Zou, Y., Sfeir, A., **Shay, J.W.**, and Wright, W.E. Does a sentinel or groups of short telomeres determine replicative senescence? *Mol. Biology Cell*, 15:3709-3718, 2004.
270. Troester, M.A., Hoadley, K.A., Sorlie, T., Borresen-Dale, A-L., Lonning, P.E., Herbert, B.-S. , **Shay, J.W.**, and Perou, C.M. Cell-type specific responses to chemotherapeutics in breast cancer *Cancer Research*, 64:4218-4226, 2004.
271. **Shay, J.W.** and Wright, W.E. Telomeres are double-strand DNA breaks that are hidden from DNA damage responses *Mol Cell*, 14:420-421, 2004.
272. Zhang, H., Herbert, B-S, Pan, K-H, **Shay, J.W.** and Cohen, S.N. Disparate effects of telomere attrition on gene expression during replicative senescence of human mammary epithelial cells cultured under different conditions *Oncogene* 23:6193-6198, 2004.
273. Zou, Y. Gryaznov, S., **Shay, J.W.**, Wright, W.E. and Cornforth, M.N. Asynchronous replication timing of telomeres at opposite arms of mammalian chromosomes *Proc Natl Acad Sci. USA* 101:12928-12933, 2004.
274. Sunaga, N, Miuajima, K., Suzuki, M., White, M.A., Ramirez, R.D., **Shay, J.W.**, Gazdar, A.F. and Minna, J.D. Dramatically different roles for caveolin-1 (CAV1) in the development of non-small cell lung cancer versus small cell lung cancer. *Cancer Research*, 64:4277-4285, 2004.
275. **Shay, J.W.** and Wright, W.E. Senescence and immortalization: role of telomeres and telomerase. *Carcinogenesis* 25:1-8, 2004.

## Jerry W. Shay

276. Ramirez, R.D., Peyton, M., Girard, L., Zou, Y., Kurie, J.M., DiMaio, M., Milchgrub, S, Smith, A.L., Souza, R.F., Gilbey, L., Zhang, X., Sheridan, S., Gandia, K., Pollack, J. Vaughan, M.B., Wright, W. E., Gazdar, A.F., **Shay, J.W.**, and Minna, J.D. Immortalization of human bronchial epithelial cells in the absence of viral oncoproteins *Cancer Research*, 64:9027-9034, 2004.
277. **Shay, J.W.** and Wright, W.E. Mechanism-based combination telomerase inhibition therapy *Cancer Cell* 7:1-2, 2005.
278. Wright, W.E. and **Shay, J.W.** Telomere-binding factors and general DNA repair. *Nature Genetic* 37: 116-118, 2005.
279. Robertson, D.M., Li, L, Fisher, S, Pearce, V.P., **Shay, J.W.**, Wright, W.E., Cavanagh, H.D., and Jester, J.V. Characterization of growth and differentiation in a telomerase-immortalized human corneal epithelial cell line. *Investigative Ophthalmology and Visual Science* 46:470-478, 2005.
280. Chai, W., **Shay, J.W.** and Wright, W.E. Human telomeres maintain their overhang length at senescence *Mol. Cell Biol.* 25: 2158-2168, 2005.
281. Sfeir, A.J., Chai, W., **Shay, J.W.** and Wright, W.E. Telomere-end processing; the terminal nucleotides of human chromosome *Mol. Cell*, 18:131-138, 2005.
282. Forsyth, N.R, Elder, F.E., **Shay, J.W.** and Wright, W.E. Lagomorphs (rabbits, pikas and hares) do not use telomere-directed replicative aging in vitro. *Mechanism of Ageing and Development*, 126: 685-691, 2005.
283. Ohyashiki, K. **Shay, J.W.** and Ohyashiki, J.H. Lack of mutations in the human telomerase RNA gene (hTERC) in myelodysplastic syndromes. *Haematologica*, 90:691 2005.
284. Herbert, B.-S., Gellert, G.C., Hochreiter, A, Pongracz, K., Wright, W.E., Zielinska, D., Chin, A.C., Harley, C.B., **Shay, J.W.** and Gryaznov, S.M. Lipid modification of oligonucleotide N3'→P5' – thio-phosphoramidates enhances the potency of telomerase inhibition *Oncogene.*, 24:5262-5268, 2005.
285. Michaloglou, C. Vredeveld, L.C.W., Soegas, M.S., Denoyelle, van der Horst, C., Majoor, D.M., **Shay, J.W.**, Mooi, W.J. and Peeper, D.S. BRAFE600-associated senescence-like cell cycle arrest of human nevi. *Nature* 436: 720-724, 2005.
286. Dikmen, Z.G., Gellert, G.C., Jackson, S., Gryaznov, S., Tressler, R., Dogan, P., Wright, W.E. and **Shay, J.W.** In vivo inhibition of lung cancer by GRN163L – a novel human telomerase inhibitor. *Cancer Research.* 65: 7866-7873, 2005.
287. Hockemeyer, D. Sfeir, A.J., **Shay, J.W.**, Wright, W.E., and deLange, T. POT1 protect telomeres from a transient DNA damage response and determine how human chromosomes end. *EMBO J.*, 24:2667-2678, 2005.
288. Takakura, M., Kyo, S, Inoue, M., Wright, W.E, and **Shay, J.W.** The function of AP-1 on transcription of the telomerase reverse transcriptase gene (TERT) in human and mouse cells *Mol Cell Biol.* 25: 8037-8043, 2005.

## Jerry W. Shay

289. Heuz'e-Vourc'h N., Liu, M., Dalwadi, H., Baratell, F.E., Zhu, L., Goodglick, L. Pold, M., Sharma, S. Ramirez, R., **Shay, J.**, Minna, J.D., Stieter, R.M., Dubinett, S. M. IL-20, an anti-angiogenic cytokine that inhibits COX-2 expression. *BBRC* 333: 470-475, 2005.
290. Sashida, G, Ohyashiki, J.H., Kubota, N., Shoji, N., Ishii, Y., Tauchi, T., Kimura, Y. **Shay, J.W.**, Ohyashiki, K. Marked telomere fluctuation of leukocytes during graft-versus-host disease in allogeneic stem cell transplantation. *International J. Mol. Med.* 16: 883-888, 2005.
291. Alonso, M.M., Fueyo, J, **Shay, J.W.**, Aldape, K.D., Xian,H., Lee, O-H., Johnson, D.G, Xu, J., Kondo, Y. Kanzawa, T. Kyo, S., Bekele, B.N. Zhou, X., Nigro, McDonald, M., J. Yung, W.K. A., and Gomer-Manzano, C. Expression of transcription factor E2F and telomerase in glioblastoma: Mechanistic linkage and prognostic significance. *JNCI* 97:1589-1600, 2005.
292. Sfeir, A.J., **Shay, J.W.**, and Wright. W.E. Fine-tuning the chromosome ends: The last base of human telomeres. *Cell Cycle*, 4: 108-111, 2005.
293. Aviv, A, **Shay, J.W.**, Christensen, K, Wright. W.E. The longevity gender gap: Are telomeres the explanation? *Sci. Aging. Knowl. Environ.* 23: pe16 2005.
294. Fujimoto, N., Wislez, M., Zhang, J., Iwanaga, K., Dackor, J., Hanna, A.E., Kalyankrishna, S., Cody, D.D., Price, R.E., Sato, M., **Shay, J.W.**, Minna, J.D., Peyton, M., Tang, X., Massarelli, E., Herbst, R., Threadgill, D.W., Wistuba, I.I., Kurie, J.M. High expression of ErbB family members and their ligands in lung adenocarcinomas that are sensitive to inhibition of epidermal growth factor receptor. *Cancer Res.* 65: 11478-11485, 2005.
295. Hofer, A.C, Tran, R.T., Aziz, O.Z. Wright, W. Novelli, G, **Shay, J.W.** and Lewis, M. Shared phenotypes among segmented progeroid syndromes suggest underlying pathways of aging. *Journal of Gerontology* .60:10-20, 2005.
296. Chai, W. Sfeir, A.J., Hoshiyama, H, **Shay, J.W.**, and Wright W.E. The MRN complex is required for the generation of proper G-overhangs at human telomeres *EMBO Reports*, 7: 225-230, 2006.
297. Chai, W., Du, Q., **Shay, J.W.**, and Wright, W.E. Human telomeres have different overhang sizes at leading versus lagging strands *Mol. Cell*, 21, 427-435, 2006.
298. Sato, M., Vaughan, M.B., Girard, L, Peyton, M., Lee, W, Shames, D.S., Ramirez, R.D. Sunaga, N., Gazdar, A.F., **Shay, J.W.**, and Minna, J.D. Multiple oncogenic changes (K-ras<sup>V12</sup>, p53 knockdown, mutant EGFRs, p16 bypass, telomerase) are not sufficient to confer a full malignant phenotype on human bronchial epithelial cells. *Cancer Res.*, 66: 2116-2128, 2006.
299. Gellert, G.C., Dikmen, Z.G., Wright, W.E., Gryaznov, S. and **Shay, J.W.** Effects of a novel telomerase inhibitor, GRN163L, in human breast cancer. *Breast Cancer Research and Treatment*, 96: 73-81, 2006.
300. **Shay, J.W.** and Wright. W. E. Telomerase therapeutics for cancer: challenges and new directions. *Nature Reviews in Drug Discovery*, 5:477-584, 2006.

## **Jerry W. Shay**

301. Moshnikova, A., Frye, J., **Shay, J.W.**, Minna, J.D., and Khokhlatchev, A.V. The Growth and Tumor Suppressor NORE1A Is A Cytoskeletal Protein that Suppresses Growth by Inhibition ERK Pathway *Journal Biological Chemistry*, 281:8143-8152, 2006.
302. Canales, B.K., Li, Y., Thompson, M.G., Gleason, J.M., Chen, Z., Malaeb, B., Corey, D.R., Herbert, B-S., **Shay, J.W.** and Koeneman, K.S. Small molecule, oligonucleotide-based telomerase template inhibition in combination with cytolytic therapy in an in-vitro androgen-independent prostate cancer model. *Urologic Oncology*, 24, 141-151, 2006.
303. Liu, Z., Widlak, P., Zou, Y., Oh. M., Chang, M.Y., **Shay, J.W.** and Garrard, W.T. A recombination silencer that specifies heterochromatin positioning and Ikaros association in the immunoglobulin kappa locus, *Immunity*, 24: 405-415, 2006.
304. Vaughan, M.B, Ramirez, R.D, Wright, W.E., Minna, J.D. and **Shay, J.W.** A three-dimensional model of differentiation of immortalized human bronchial epithelial cells. *Differentiation*, 74:141-148, 2006.
305. Lewis, C.M., Herbert, B-S., Bu, D., Holloway, S., Beck, A., Shaeo, A., Zhang, C., Ashfaq, R., **Shay, J.W.**, Euhus, D.M. Telomerase immortalization of human mammary epithelial cells derived from a BRCA2 mutation carrier, (in press, *Breast Cancer Research and Treatment*, 2006).
306. Fujimoto, N, Wislez, M., Zhang, J., Iwagaga, K., Dackor, J., Hanna, A.E., Cody, D.D., Price, R.E., Sato, M., **Shay, J.W.**, Minna, J.D., Tang, X., Massarelli, E., Herbst, R., Threadgill, D.W., Wistuba, I. and Kurie, J.M. Gefitinib suppresses alveolar epithelial neoplasia by oncogenic Kras: evidence that high expression of ErbB3 and ErbB ligands confers gefitinib sensitivity to lung adenocarcinoma cells *Cancer Research*, 65: 11478-11485, 2006.
307. Liu, M., Yang, S.-C., Sharma, S., Luo, J. Cui. X., Huang, M. Ramirez, R., **Shay, J.W.**, Minna, J.D., and Dubinett, S.M. TGF-beta1 and EGF modulate transcriptional and post-transcriptional expression of cyclooxygenase-2 in immortalized human bronchial epithelial cells (in press, *Cancer Res.*, 2006).
308. Richer, E., Slavine, N., Lewis, M.A, Tsyganov, E, V. Bhagwhandin, **J.W. Shay**, Mason, R. Light emission tomography (LET): Visualizing small animal biology in three-dimensions (in review, *Nature Methods*, 2006).
309. Shames, D.S., Girard, L., Gao, B., Sato, M., Perou, C.M., Pollack, J.R., Fong, K. Lam, C-L., Wong, M., Gerald, w., Jiang, A., Shyr, Y., **Shay, J.W.**, Gazdar, A.F., and Minna, J.D. A common pattern of promoter hypermethylation in breast and lung tumors (in press, *PLOS Medicine*, 2006).
310. Herbert. B-S., Hochreiter, A.E. Wright, W.E. and **Shay, J.W.** Non-radioactive detection of telomerase activity using the Telomeric Repeat Amplification Protocol (TRAP). (in press, *Nature Protocols*, 2006).
311. Nomura, M., Shigematsu H. , Li L., Suzuki M., Takahashi T. , Estess, P., Siegelman, M., Feng, Z., Kato, H , Marchetti, A., **Shay, J.W.** Spitz, M, Wistuba, I., Minna, J., Gazdar, A. Polymorphisms, mutations and amplification of the EGFR gene in non-small cell lung cancers *PLOS medicine* (in review, 2006).

## **Jerry W. Shay**

312. Das, A.K., Sato, M., Story, M.D., Peyton, M., Graves, R., Redpath, S., Girard, L., Gazdar, A.F. **Shay, J.W.**, Minna, J.D, and Nirodi, C.S. Non-small cell lung cancers with mutations in the tyrosine kinase domain of the epidermal growth factor receptor are sensitive to ionizing radiation. (in review, 2006).
313. Zou, Y., Pandita, T, **Shay, J.W.**, and Wright, W.E. Telomere transition states and the two-stage mechanism of replicative aging (in review, 2006).
314. Zou, Y.S, **Shay, J.W.** and Wright, W.E. The telomere sister chromatid exchange (T-SCE) damage response pathway (in review, 2006).

## **II. Other publications:**

1. Gershenbaum, M.R., **Shay, J.W.** and Porter, K.R. "The effects of cytochalasin B on Balb/3T3 mammalian cells cultured in vitro as observed by scanning and high voltage electron microscopy." *In: Scanning Electron Microscopy, Proceedings of the 7th Annual Scanning Electron Microscopy Symposium, (O. Johari and I. Corvin, eds.) I.I.T. Research Institute, pp. 589-597, 1974.*
2. **Shay, J.W.** and Gershenbaum, M.R. "Ultrastructural observations on CHO cells enucleated with cytochalasin B." *In: Electron Microscopy, vol. II, Proceedings of the 7th International Congress on Electron Microscopy, pp. 336-338, 1974.*
3. **Shay, J.W.** "Ultrastructural observations on spermiogenesis in the fungus gnat, *Rhynchosciara sp.*" *In: The Functional Anatomy of the Spermatozoan, (B. A. Afzelius, ed.) Pergamon Press, Ltd., Oxford, pp. 223-236, 1975.*
4. **Shay, J.W.** and Clark, M.A. "Enucleation of colchicine treated mammalian cells." *In: Proceedings, 33rd Meeting of the Electron Microscopy Society of America, (G. W. Bailey, ed.) Claitors Publishing Div., pp. 306-307, 1975.*
5. **Shay, J.W.** "High voltage electron microscopy of cultured muscle cells." *In: Proceedings, 34th Meeting of the Electron Microscopy Society of America, (G. W. Bailey, ed.) Claitors Publishing Div., pp. 76-77, 1976.*
6. **Shay, J.W.** "High-voltage electron microscopy in biomedical research." *In: Proceedings, 7th Annual T.S.E.M./L.S.E.M. Joint Symposium, San Antonio, Texas, 9: 15-22, 1978.*
7. Clark, M.A. and **Shay, J.W.** "Scanning electron microscopic observation on the mechanism of somatic cell fusion using polyethylene glycol." *In: Scanning Electron Microscopy, vol. II, (O. Johari and I. Corvin, eds.) pp. 327-332, 1978.*
8. Porterfield, R.R., Kagan, T.M., Bollon, A.P. and **Shay, J.W.** "Scanning electron microscopic observations on normal and drug treated primary heart cell cultures." *In: Scanning Electron Microscopy, vol. II, (O. Johari and I. Corvin, eds.) pp. 465-470, 1978.*

## **Jerry W. Shay**

9. Clark, M.A. and **Shay, J.W.** "The response of whole and enucleated adrenal cortical tumor cells (Y-1 cells) to ACTH treatment." *In: Scanning Electron Microscopy*, vol. III, (O. Johari and I. Corvin, eds.) pp. 527-535, 1979.
10. Triplett, R. and **Shay, J.W.** "Morphological observation of differentiation of the teratocarcinoma cell PCC AZA in vitro." *In: Proceedings, 37th Meeting of the Electron Microscope Society of America*, (G. W. Bailey, ed.) Claitor Publishing Div., pp. 144-145, 1979.
11. **Shay, J.W.** and Clark, M.A. "Nuclear control of tumorigenicity in reconstructed cells by PEG-induced fusion of cell fragments." *In: Progress in Clinical and Biological Research: Tumor Cell Surfaces and Malignancy*, (R. O. Hynes and C. F. Fox, eds.) Alan Liss, Pub., Vol. 41, pp. 9-25, 1979.
12. **Shay, J.W.** and Walker, C. "Cells in cultures as studied by scanning electron microscopy." *In: Scanning Electron Microscopy*, vol. II, (R. Becker and O. Johari, eds.) pp. 171-178, 1980.
13. **Shay, J.W.** and Stauver, M.G. "Muscle ultrastructure and histochemistry of avian muscular dystrophy following Isaxonine treatment." *Proceedings, 38th Meeting of the Electron Microscope Society of America*, (G. W. Bailey, ed.) Claitor Pub. Div., pp. 448-449, 1980.
14. **Shay, J.W.**, Feit, H. and Neudeck, U. "Microtubules and avian muscular dystrophy." *In: Microtubules and Microtubule Inhibitors*, (M. deBrabander and J. DeMey, eds.) Elsevier/North Holland Biomedical Press, pp. 545-553, 1980.
15. Fuseler, J.W., **Shay, J.W.** and Feit, H. "Role of intermediate (10 nm) filaments in the development and integration of the myofibrillar contractile apparatus in the embryonic mammalian heart." *In: Cell and Muscle Motility*, vol. I, (R. M. Dowben and J. W. Shay, eds.) Plenum Press, New York, pp. 205-259, 1981.
16. Clark, M.A. and **Shay, J.W.** "The role of tubulin in steroidogenesis of mouse adrenal Y-1 cells and rat Leydig CCL43 cells." *In: Cell and Muscle Motility*, vol. II, (R. M. Dowben and J. W. Shay, eds.) Plenum Press, New York, pp. 53-61, 1982.
17. Bollon, A.P., Porterfield, R.R., Fuseler, J.W. and **Shay, J.W.** "Microtubules and heart cell contraction." *In: Cell and Muscle Motility*, vol. II, (R. M. Dowben and J. W. Shay, eds.) Plenum Press, New York, pp. 93-101, 1982.
18. Fuseler, J.W., Eckert, B.S., Koon, S.J. and **Shay, J.W.** "The association of creatine phosphokinase with the mitotic spindle." *In: Cell and Muscle Motility*, vol. II, (R. M. Dowben and J. W. Shay, eds.) Plenum Press, New York, pp. 103-119, 1982.
19. **Shay, J.W.**, Fuseler, J.W., Neudeck, U., Lorkowski, G., Stauver, M. and Feit, H. "Cytoskeletal defects in Avian muscular dystrophy." *In: Cell and Muscle Motility*, vol. II, (R. M. Dowben and J. W. Shay, eds.) Plenum Press, New York, pp. 121-140, 1982.
20. **Shay, J.W.**, Thomas, L. E. and Fuseler, J. W. "Altered mononuclear cell spreading and microtubules in Duchenne muscular dystrophy patients and carriers." *In: Disease of the Motor Unit*, (D. L. Schotland, ed.) John Wiley & Sons, New York, pp. 789-801, 1982.

## **Jerry W. Shay**

21. **Shay, J.W.**, Lorkowski, G. and Clark, M.A. "Suppression of tumorigenicity in cybrids." *In: Mechanisms of Chemical Carcinogenesis*, (C. C. Harris and P. A. Cerutti, eds.) Alan R. Liss, Inc., New York, pp. 1-8, 1982.
22. Weide, L.G., Clark, M.A. and **Shay, J.W.** "Techniques for isolating nuclear hybrids." *In: Techniques in Somatic Cell Genetics* (J. W. Shay, ed.) Plenum Press, New York, pp. 281- 290, 1982.
23. Clark, M.A. and **Shay, J.W.** "Techniques for purifying L-cell karyoplasts with minimal amounts of cytoplasm." *In: Techniques in Somatic Cell Genetics* (J. W. Shay, ed.) Plenum Press, New York, pp. 269-280, 1982.
24. Clark, M.A., Reudelhuber, T.L. and **Shay, J.W.** "Transformation of mitochondrially coded genes into mammalian cells using intact mitochondria." *In: Techniques in Somatic Cell Genetics* (J. W. Shay, ed.) Plenum Press, New York, pp. 203-210, 1982.
25. Walker, C. and **Shay, J.W.** "Epigenetic suppression of tumorigenesis mediated by 5-azacytidine." *In: Genes and Cancer*, (M. Bishop *et al.*, eds.) Alan R. Liss, New York, pp. 569-582, 1984.
26. **Shay, J.W.** and Cram, L.S. "Cell fusion and chromosome sorting." *In: Molecular Cell Genetics*, (M. M. Gottesman, ed.) Wiley & Sons, Inc., New York, pp. 155-179, 1985.
27. **Shay, J.W.** "Human hybridomas and monoclonal antibodies: The biology of cell fusion." *In: Human Hybridomas and Monoclonal Antibodies*, (E. G. Engelman, S. Foug, J. Larrick and A. Raubitschek, eds.) Plenum Press, New York, pp. 5-20, 1985.
28. Rainey, W.E., **Shay, J.W.** and Mason, I. J. "ACTH induction of cholesterol biosynthesis and steroidogenesis in primary cultures of bovine adrenocortical cells." *In: Lipoprotein and Cholesterol Metabolism in Steroidogenic Tissues*, (K. M. J. Menon and J. F. Strauss, eds.) George F. Strickley Co., Philadelphia, pp. 97-101, 1985.
29. **Shay, J.W.** "Cytoplasmic factors regulating cellular differentiation." *In: Cellular Endocrinology*, (G. Serrero and J. Hayashi eds.) Alan R. Liss, New York, pp. 417-431, 1986.
30. **Shay, J.W.** "Mechanisms of cell fusion and selection in the generation of hybridomas." *In: Hybridoma Formation*, (A. H. Bartol and Y. Hirshaut, eds.) Humana Press, Inc., New York, pp. 63-75, 1987.
31. **Shay, J.W.** and Werbin, H. "Cytoplasmic regulation of cellular differentiation: A role for mitochondria in carcinogenesis." *In: Mechanisms of Differentiation*, vol. I, (P. B. Fisher, ed.) CRC Press, Inc. Boca Raton, Florida, pp. 135-159, 1990.
32. **Shay, J.W.** and Wright, W.E. "Both Rb and p53 are potential regulators of human cellular senescence." *In: Hereditary Tumors*, (M. L. Brandi and R. White, eds.) Serono Symposia Publications, Raven Press, 83:173-182, 1991.

## **Jerry W. Shay**

33. Harley, C.B., Kim, N.W., Prowse, K.R., Weinrich, S.L., Hirsch, K., West, M.D., Bacchetti, S., Hirte, H.W., Counter, C.M., Greider, C.W., Piatyszek, M.A., Wright, W.E., and **Shay, J.W.** "Cell immortality, telomerase and cancer" In: Cold Spring Harbor Symposium, 59:307-315, 1994.
34. **Shay, J.W.**, Brašiškytė, D., Ouellete, M., Piatyszek, M.A., Werbin, H., Ying, Y., and Wright, W. E. Methods for analysis of telomerase and telomeres. In: *Methods in Molecular Genetics*, Ed, K. W. Adolph, Vol. 5, 263-280, 1994.
35. Wallace, D.C., Richter, C., Bohr, V.A., Cortopassi, G., Kadenbachm B., Linn, S., Linnane, A.T., and **Shay, J.W.** "The role of bioenergetics and mitochondrial DNA mutations in aging and age related disease". In: Dahlem Workshop on Molecular Aspects of Aging, (K. Esser and G.M. Martin, eds.) Wiley & Sons, Inc., 56:199-226, 1995.
36. **Shay, J.W.**, Werbin, H., and Piatyszek, M.A. "Does aging favor translocation of mitochondrial DNA fragments to the nuclear genome". In: Dahlem Workshop on Molecular Aspects of Aging, (K. Esser and G.M. Martin, eds.), Wiley & Sons, Inc., 56:179-190, 1995.
37. Wright, W.E. and **Shay, J.W.** "Mechanisms of escaping senescence in human diploid cells" In: Modern Cell Biology Series, "Cellular Aging and Cell Death" (Eds. J. J. Holbrook, G. R. Martin and R. A. Lockshin), Wiley & Sons, Inc., pp. 153-167, 1996.
38. Hiyama, E., Gollahon, L., Kataoka, T., Kutoi, K., Yokoyama, T., Gazdar, A.F., Hiyama, K., Piatyszek, M.A., and **Shay, J.W.** Telomerase activity in human breast tumors (correspondence). *J Natl. Cancer Inst.*, 88:839-840 1996.
39. **Shay, J.W.** Telomerase and cancer (meeting review). *Trends Gen.*, 12:486-487, 1996.
40. **Shay, J.W.** "Telomerase in human development and cancer" In: Proceedings of the International Conference of the International Society of Differentiation, Inc. In: "Development, Cell Differentiation, and Cancer" *J. Cell Physiol.* Wiley & Sons, Inc. 1997.
41. Breslow, R.A., **Shay, J.W.**, Gazdar, A.F., and Srivastava, S. Telomerase and Early Detection of Cancer: A National Cancer Institute Workshop. *J. Natl. Cancer Inst.*, 89:618-623, 1997.
42. **Shay, J.W.** Molecular pathogenesis of aging and cancer: Are telomeres and telomerase the connection? (editorial). *J. Clin. Path.*, 50:799-800, 1997.
43. **Shay, J.W.**, Werbin, H. and Wright, W. E. Telomerase assays in the diagnosis and prognosis of cancer. In: Telomeres and Telomerase (Ciba Foundation Symposium 211) John Wiley & Sons, Chichester, 211:148-160, 1997.
44. **Shay J.W.**, and Wright, W.E. Telomeres, telomerase and tumors. *Amer. Soc. Clin. Oncol.* 49-56, 1997.
45. **Shay, J.W.** Accelerated telomere shortening in recipients of bone marrow transplant. *The Lancet (commentary)*, 351:153-154, 1998.

## **Jerry W. Shay**

46. **Shay, J.W.** Telomerase in cancer: Diagnostic, prognostic and therapeutic implications. *Cancer J. Scientific Amer.*, 4:26-34, 1998.
47. **Shay, J.W.** Telomerase and Cancer. In: *Molecular Pathology of Early Cancer* (Eds. S. Srivastava, D. E. Henson, A. Gazdar) IOS Press, Amsterdam, 425-433,1999.
48. **Shay, J.W.** and Wright, W.E. Telomeres and telomerase in the regulation of human cellular aging. In: *Molecular Biology of Aging* (Eds. V.A. Bohr, B.F.C. Clark, T. Stevnsen), Alfred Benzon Symposium 44:148-158, 1999.
49. **Shay, J.W.** Pieces of the Puzzle: An interview with Jerry W. Shay. *J. Anti-Aging Medicine* 2:7-13, 1999.
50. Ramirez, R.D., D-Atri, S., **Shay, J.W.** Telomerase and melanoma. In: *Proc. 1st International Symposium on Melanoma* 1999.
51. **Shay, J.W.** Cell Senescence. In: *2000 Yearbook of Science & Technology*, (McGraw-Hill, Inc., New York, 52-55, 1999.
52. **Shay, J.W.** Telomerase. In: *Cancer Research, An Encyclopedic Reference* (Eds: M Schwab) Springer-Verlag, Germany 1999.
53. **Shay, J.W.** Telomeres, Aging and Tumorigenesis *Advances in Oncology*, 16:2-9, 2000.
54. **Shay, J.W.**, Wright, W.E., and Schultz, R.A. Role of telomeres and telomerase in aging and cancer. *Molecular Genetics of Cancer*, Second Edition 2000.
55. **Shay, J.W.** and Wright, W.E. Ageing and cancer: the telomere and telomerase connection. In: *Aging vulnerability: causes and interventions* (Novartis Foundation Symposium 235) John Wiley & Sons, Chichester 116-125, 2001.
56. Morales, C.P., Wright, W.E., and **Shay, J.W.** Telomerase. In: *Cancer Handbook* (ed. Gullick and Saloman) MacMillan Publishers Ltd., 2001.
57. **Shay, J.W.** and Wright, W.E. Classic Experiments "Immortalizing human cells with telomerase (Ed. B. Lewin) <http://www.ergito.com/docs/gtexpts/shay.htm>, 2001.
58. White, L., Wright, W.E. and **Shay, J.W.** Telomerase inhibitors, *Trends in Biotechnology* 19:114-120, 2001.
59. Herbert, B.-S., Wright, W.E. and **Shay, JW.** Telomerase and breast cancer, *Breast Cancer Research*, 3: 146-149, 2001.
60. **Shay, J.W.** and Wright, W.E. Aging and cancer: Are telomeres and telomerase the connection? In: *Telomerase Aging and Disease* (Eds. M.P. Mattson and T.K. Pandita) Elsevier Science, 1-13, 2001.

## **Jerry W. Shay**

61. Cong, Y. Wright, W.E., and **Shay J.W.** Human telomerase and its regulation, *Microbiology Mol. Biol. Rev.*, 66: 407-425, 2002.
62. Wright, W.E. and **Shay, J.W.** Telomere shortening and replicative aging, In: Chromosomal Instability and Aging: Basic Science and Clinical Implications (Eds. F.M. Hisama, S. M. Weissman, and G.M. Martin), Marcel Dekker, Inc New York 51-72, 2003.
63. Wright, W.E., **Shay, J.W.**, Herbert, B-S. Analysis of telomeres and telomerase, *Methods in Molecular Biology*, 2003.
64. **Shay, J.W.**, and Wright, W.E. Does telomerase moonlight? *The Scientist*, Feb 18-19, 2005.
65. **Shay, J.W.** Meeting Report: The role of telomeres and telomerase in cancer. *Cancer Res.* 65:3513-3517, 2005.
66. Gellert, G.C., Jackson, S.R. Dikmen, G., Wright, W.E. and **Shay, J.W.** Telomerase as a therapeutic target in cancer. *Drug Discovery Today* 2: 159-164, 2005.
67. **Shay, J.W.** and Wright W.E. Telomerase and Human Cancer. In: *Telomeres 2<sup>nd</sup> Edition*, (Eds. T. deLange, V. Lundblad, and E. Blackburn) Cold Spring Harbor Laboratory Press, NY pp81-108, 2005.
68. **Shay, J.W.** and Wright, W.E. Use of telomerase to create bioengineered tissues. In: Ann. N.Y. Acad. Sci. Vol 1057 Reversal of Aging (Ed. W Pierpaol,) pp.479-491 2006.
69. Finkel, T., Vijg, J., and **Shay, J.W.** Time, tumours, and telomeres - meeting on cancer and aging *EMBO Report*, 7:479-483, 2006.
70. Wright, W.E., and **Shay, J.W.** Telomerase. In: Cancer Handbook (ed. Alison, M.R. ed) John Wiley & Sons Publishers Ltd., 2006.
71. **Shay, J.W.** and Wright, W.E. Hallmarks of Telomeres in Ageing Research, *J. of Pathology*, in press Jan 2007.

**Jerry W. Shay**

**III. Books/Special Volumes Edited**

1. Cell and Muscle Motility, volumes I-IV, R.M. Dowben and **J.W. Shay**, editors, Plenum Press, New York, 1981-1983.
2. Techniques in Somatic Cell Genetics, **J.W. Shay** editor, Plenum Press, New York, 1982.
3. Cell and Muscle Motility (The Cytoskeleton), volume V, **J.W. Shay** editor, Plenum Press, New York, 1984.
4. Cell and Muscle Motility, volume VI, **J.W. Shay** editor, Plenum Press, New York, 1985.
5. Cell and Molecular Biology of the Cytoskeleton, **J.W. Shay** editor, Plenum Press, New York, 1986.
6. Telomeres and Telomerase, J.W. Shay and W.E. Wright, Guest Editors, *Oncogene Reviews*, 2002.