

CURRICULUM VITAE

Samuel H. Wilson

Place of Birth: U.S.A.

Married - 2 children (grown)

Education:

1961	A.B. (Chemistry)	University of Denver
1968	M.D.	Harvard University
1968	Postdoctoral Fellowship	Dartmouth Medical School
1970	Postdoctoral Fellowship	NIH

Professional Employment:

2007 - Present	Acting Director, National Institute of Environmental Health Sciences (NIEHS), NIH, & National Toxicology Program
1996 - Present	Chief, DNA Repair and Nucleic Acid Enzymology Section, Laboratory of Structural Biology, NIEHS, NIH
1996 - 2007	Deputy Director, NIEHS, NIH, & National Toxicology Program
1991 - 1996	Founding Director, Sealy Center for Molecular Science, The University of Texas Medical Branch (UTMB) and Director, Centennial Center for Environmental Toxicology, UTMB
1986 - 1992	Chief, Nucleic Acid Enzymology Section, Laboratory of Biochemistry, National Cancer Institute (NCI), NIH
1970 - 1992	Research Scientist, Laboratory of Biochemistry, NCI, NIH
1968 - 1992	US Public Health Service Commissioned Corps, Retired (January 1992) Medical Director (06)
1968 - 1970	Postdoctoral Fellow (Research Associate) Laboratory of Biochemical Genetics (Advisor - Marshall Nirenberg), National Heart Institute, NIH
1967 - 1968	Postdoctoral Fellow, Department of Biochemistry (Advisor - Mahlon Hoagland), Dartmouth Medical School
1964 - 1966	Student Research Associate, Department of Bacteriology and Immunology (Advisor - Mahlon Hoagland), Harvard Medical School
1961 - 1962	Graduate Fellow, Department of Chemistry (Advisors - J.J. Schmidt - Colerus and J.A. Krimmel), Denver Research Institute, Univ. of Denver

Awards & Lectures: (since 2000)

2008	Robert S. Harris Lecturer, Massachusetts Institute of Technology
2008	Abelson Lecturer, Washington State University
2008	Keynote Speaker, MD Anderson Cancer Center, DNA Repair Symposium
2007	Keynote Speaker, North Carolina Regional Conference on Genome Stability
2005	NIH Merit Award (Strategic Planning)
2005	NIH Merit Award (Gulf Coast Hurricane Response)
2005	Plenary Lecturer, 9 th International Conference on Environmental Mutagens
2005	Keynote Speaker, Genetic Toxicology Gordon Research Conference
2004	NIH Merit Award (Leadership as Deputy Director, NIEHS)
2003	NIEHS "Scientist of the Year 2003" and Science Day Speaker
2003	Keynote Speaker, EU-US Conf. on DNA Damage Induced Stress Responses

2003 Keynote Speaker, Toxicogenomics Gordon Research Conference
 2003 Keynote Speaker, The American Chemistry Council Long-Range Research Initiative (ACC-LRI) First Annual Science Meeting
 2002 Keynote Speaker, Mutagenesis Gordon Research Conference
 2002 21st William B. Kinter Lecturer, Mount Desert Island Biol. Lab. Symposium
 2002 NIH Director's Award (Toxicogenomics)
 2002 Keynote Speaker, New York Medical College, Annual Research Forum
 2001 NIH Merit Award (Toxicogenomics)
 2001 Keynote Speaker, Mouse Genomics Consortium Workshop
 2001 Keynote Speaker, 11th Annual Howard Hughes Medical Institute Environmental Conference
 2001 Keynote Speaker, Genetic Toxicology Gordon Research Conference
 2001 Keynote Speaker, 3rd Annual Midwest DNA Repair Symposium
 2000 Keynote Speaker, Toxicology Gordon Research Conference
 2000 NIH Director's Award, Advanced Research Cooperation in Environmental Health (ARCH) Program

Graduate Student Advisor/Thesis Research Supervisor:

Degree in 1978 W. Zellmer, Dept. of Zoology, Auburn University
 Degree in 1978 E.W. Bohn, Dept. of Chemistry, American University
 Degree in 1985 J. Swack, Dept. of Biochemistry, George Washington University
 Degree in 1997 T. Molina, Dept. of Human Biological Chemistry and Genetics, UTMB
 Degree in 2007 N. Palma, Dept. of Cellular Biology, University of Seville, Spain

Member Ph.D. Thesis Defense or Advisory Committee:

2002, T. Fisher, Dept. of Microbiology and Immunology, Albert Einstein College of Medicine;
 2001, L. Chen, Dept. of Molecular Medicine, Institute of Biotechnology, University of Texas Health Science Center (San Antonio); 2000, B.-Q. Li, Dept. of Biochemistry and Molecular Biology, University of Miami; 1997, A.G. McNees, Dept. of Human Biological Chemistry and Genetics (HBC&G), UTMB; 1997, X.-Q. Zhou, Department of Cellular and Structural Biology, University of Texas Health Science Center (San Antonio); 1996, Q. Xie, Dept. of HBC&G, UTMB; 1996, B. Ponnaiya, Dept. of HBC&G, UTMB; 1996, T.K. Varma, Dept. of HBC&G, UTMB; 1995, S. F. Anderson, Dept. of Molecular Biophysics and Biochemistry, Yale University; 1995, N. Deane, Dept. of Microbiology, UTMB; 1992, R. Anderson, Dept. of Biochemistry, Baylor College of Medicine; 1991, M. Delahunty, Dept. of Chemistry, Univ. of Maryland Baltimore County; 1987, H. Al-Khatib, Dept. of Biochemistry, Georgetown University; 1986, B. Merrill, Dept. of Molecular Biophysics and Biochemistry, Yale University; 1985, A. Lambrianidou, Dept. of Biochemistry, Georgetown University; 1984, W. Albert, Institute of Biochemistry, University of Wurzburg; 1980, M. Vinocour, Dept. of Biochemistry, University of Arizona.

Postdoctoral Fellows and Research Associates:

2007-present, M. Heacock; 2005-present, A. Masaoka; 2003-present, Y. Liu; 2003-present, K. Asagoshi; 2002-2006, E. Braithwaite; 2005, E. Speina; 2002-2003, C. Cistulli; 1998-2003, M. Ghosh; 1993-2002, R. Sobol; 1992-1999, 2001-2002, D. Srivastava; 1997-2001, B. Vande Berg; 1999-2000, D. Kolpachtchikov; 1999-2000, G. Belova; 1997-2000, A. Robertson; 1998-1999, J.

Krahn; 1992-1999, X.-P. Yang; 1994-1996, J. Chyan; 1992-1996, R. Singhal; 1991-1996, F. He; 1991-1996, K.-H. Chen; 1991-1996, S. Narayan; 1990-1995, M. Jaju; 1991-1994, R. Prasad; 1992-1993, R. Kim; 1991-1993, H. Idriss; 1991-1993, R. Goel; 1990-1992, W. Beard; 1989-1991, J. Casas-Finet; 1989-1991, S.-J. Kim; 1989-1991, A. Kumar; 1989-1991, E. Englander; 1987-1991, J. Abbotts; 1986-1991, S. Widen; 1988-1990, C. Majumdar; 1987-1990, P. Kedar; 1985-1987, P. Kumar; 1984-1987, D. Sen Gupta; 1984-1987, F. Cobianchi; 1982-1984, A. Hazra; 1981-1984, E. Karawya; 1980-1984, P. Becerra; 1979-1984, S. Detera; 1979-1984, K. Tanabe; 1980-1983, S. Planck; 1977-1980, Y.-C. Chen; 1978-1979, T. Marshall; 1975-1976, M. Sivarajan; 1972-1975, A. Matsukage.

Sabbatical/Senior Laboratory Associates:

2006-present, M. Carrozza; 2002-present, V. Poltoratsky; 2001-present, V. Batra; 1999-present, P. Kedar; 1997-present, J. Horton; 1994-present, R. Prasad; 1992-present, W. Beard; 2006-2007, Z. Zhang; 1994-1995, 1999-2000, 2001-2002, O. Lavrik; 1995-1996, and 2002, P. Strauss; 2000-2002, S.-J. Kim; 2001, H. Idriss; 1999, 2000, S. DeLauder; 1997, A. Slesarev; 1990, F. Cobianchi; 1985, K. Tanabe; 1984-1990, B.Z. Zmudzka.; 1984 and 1988, A. Matsukage.

Sabbatical Administrative Associates:

2001-2002, M. Yudell (graduate student); 2000-2001, C. Miller; 1997, G. LeMasters

National Peer-Review Activities: (excluding journal reviews, since 2000)

2008 - 2011	Editorial Board, <i>Nucleic Acids Research</i>
2006 - present	Editorial Board, <i>Mechanisms of Ageing and Development</i>
2003 - 2008	Associate Editor, <i>DNA Repair</i>
2001 - 2003	Editorial Board, <i>DNA Repair</i>
1999 - 2006	Editorial Board, <i>Annual Review of Medicine</i>
1997 - 2008	Editorial Board, <i>Environmental Health Perspectives</i>
1996 - 2002	Editorial Board, <i>The Journal of Biological Chemistry</i>

National Committees and Other Activities Outside NIH: (since 2000)

2007 - 2008	Co-Chair, 3 rd Biannual US-EU/EU-US DNA Repair Meeting
2007	Organizing Committee NAS/IOM Roundtable on Environmental Health Sciences, Research, and Medicine (EHSRT) Workshop, Environmental Health, Energy, and Transportation, Washington, DC
2007	Co-Chair, 3 rd Biannual Japan-US/US-Japan DNA Repair Meeting
2006	Organizing Committee NAS/IOM EHSRT Workshop, From Exposure to Human Disease, Washington, DC
2005	Co-Chair, 2 nd Biannual EU-US DNA Repair Meeting, Erice, Sicily
2004 - present	Member, Scientific Advisory Board, Flight Attendant Medical Research Institute (FAMRI) Center, Weizmann Institute of Science, Rehovot, Israel
2004	Organizing Committee NAS/IOM EHSRT Workshop, Global Environmental Health in the 21 st Century, Washington, DC
2004	Co-Chair, 2 nd Biannual Japan-US/US-Japan DNA Repair Meeting, Honolulu, HI
2003 - 2009	Vice-Chair and Chair, respectively, Genetic Toxicology Gordon Research Conference, Oxford, UK

- 2003 - 2007 Director (2003), Scientific Advisory Board (2004-2007), Radiation Effects Research Foundation (Cooperative Japan-United States Research Organization), Hiroshima, Japan
- 2003 - 2005 Program Committee, 9th International Conference on Environmental Mutagens, San Francisco, CA
- 2003 Co-Chair, Biannual US-EU/EU-US DNA Repair Meeting, Leesburg, VA
- 2003 Annual Meeting Environmental Mutagen Society (EMS), Miami, FL, May 2003, Symposium Co-Chair
- 2003 Co-Organizer, Symposium on Gene-Environment Interaction, Masur Auditorium, NIH, Bethesda, MD
- 2002 - present Member (Liaison), NAS/IOM, Board on Health Sciences Policy, Washington, DC
- 2002 - 2006 Chair, Federal Liaison Group to the NRC/NAS Committee on Emerging Issues and Data on Environmental Contaminants, Washington, DC
- 2002 Scientific Advisory Board – Program on Structural and Cell Biology of DNA Repair, Lawrence Berkeley National Laboratory, Berkeley, CA
- 2002 Scientific Advisory Committee (*ad hoc*), CIIT, RTP, NC
- 2002 Co-Chair, Marshall Nirenberg Symposium, Natcher Center, NIH, Bethesda, MD
- 2002 Co-Chair, 1st Biannual Japan-US/US-Japan DNA Repair Meeting, Sendai, Japan
- 2001 Organizing Committee NAS/IOM EHSRT Workshop, Environmental Hazards in Premature Birth, Washington, DC
- 2000 - 2001 Organizing Committee NAS/IOM EHSRT Workshop, Cancer and the Environment, Washington, DC
- 2000 - 2001 Member, American Society for Biochemistry and Molecular Biology (ASBMB) Council
- 2000 Co-Organizer, International Conference on Arctic Development, Pollution, and Biomarkers of Human Health in Conjunction with the Arctic Monitoring and Assessment Programme, Anchorage, AK
- 2000 Organizing Committee NAS/IOM EHSRT Workshop, Rebuilding the Unity of Health and the Environment, Washington, DC
- 1999 - 2003 Member, NCEH/CDC National Advisory Committee, Atlanta, GA
- 1998 - present Member, NAS/IOM Roundtable on EHSRT, Washington, DC
- 1997 - 2001 Vice-Chair and Chair, respectively, Mammalian DNA Repair Gordon Research Conference
- 1997 - 2000 Co-Organizer and Co-Chair, Base Excision Repair 2000 Workshop, Galveston, TX
- 1994 - 2000 Scientific Advisory Panel - The Flinn Foundation, Phoenix, AZ

Invited Laboratory Research Presentations (since 2000):

- 3rd Biannual US-EU DNA Repair Meeting, Galveston, TX, November 2008
- Targeting DNA Replication in Cancer Cells Meeting, Bethesda, MD, September 2008
- Gordon Research Conference, Oxford, UK, July 2008
- 2nd International Genome Dynamics in Neuroscience Conference, Pacific Grove, CA, June 2008
- Washington State University, Pullman, WA, April 2008

R.D. Wells Symposium, Houston, TX, April 2008
NIH Videoconference on the History of DNA Repair, Transforming Technologies Along the Way: A Story About Pol β and BER, Research Triangle Park, NC, June 2007
Gordon Research Conference, Oxford, UK, August 2007
3rd Japan-US DNA Repair Meeting, Sendai, Japan, May 2007
Rutgers University, Piscataway, NJ, March 2007
Gordon Research Conference, Ventura, CA, February 2007
Conference on Xeroderma Pigmentosum and Other Diseases of Human Premature Aging and DNA Repair: Molecules to Patients, National Conferences Center, Landsdowne, VA, September 2006
XIII International Congress of the Free Radical Society International Meeting, Davos, Switzerland, August 2006
Erling Seeberg Symposium on DNA Repair, Bodø and Henningsvær, Lofoten, Norway, May 2006
American Society Biochemistry and Molecular Biology Annual Meeting, San Francisco, CA, April 2006
Mayo Clinic, Rochester, MN, February 2006
2nd Biannual EU-US DNA Repair Meeting, Erice, Sicily, November 2005
NIEHS Center for Rodent Genetics Conference, Research Triangle Park, NC, October 2005
Ohio State University, Columbus, OH, October 2005
Gordon Research Conference, Newport, RI, June 2005
FAMRI Symposium, Weizmann Institute, Rehovot, Israel, March 2005
Keystone Symposium, Taos, NM, March 2005
American Society of Microbiology Conference on DNA Repair and Mutagenesis, Bermuda, November 2004
Dale W. Mosbaugh Symposium on Genetic Toxicology and DNA Repair, Corvallis, OR, October 2004
American Chemical Society National Meeting, Philadelphia, PA, August 2004
Forbeck Forum, Hilton Head Island, SC, November 2003
Sixth Annual Jack B. Little Symposium, Boston, MA, October 2003
1st Biannual US-EU DNA Repair Meeting, Leesburg, VA, October 2003
Gordon Research Conference, Oxford, UK, August 2003
Cincinnati Comparative Mouse Genomics Centers (CMGCC) Symposium, Boston, MA, June 2003
Gordon Research Conference, Newport, RI, June 2003
University of Nebraska, Omaha, NE, May 2003
Gordon Research Conference, Ventura, CA, January 2003
55th Annual Symposium on Fundamental Cancer Research, M.D. Anderson Cancer Center, Houston, TX, October 2002
University of California, San Diego, CA, October 2002
32nd Annual Meeting of European Environmental Mutagen Society, Warsaw, Poland, September 2002
University of Pittsburgh, Pittsburgh, PA, May 2002
American Chemical Society 223rd National Meeting, Orlando, FL, April 2002
SUNY-Stony Brook, Long Island, NY, April 2002
Gordon Research Conference, Ventura, CA, March 2002

Albert Einstein College of Medicine, New York, NY, February 2002
University of Southern California, Los Angeles, CA, November 2001
University of North Carolina, Chapel Hill, NC, September 2001
University of Rochester, Rochester, NY, April 2001
University of North Carolina, Chapel Hill, NC, March 2001
Gordon Research Conference, Ventura, CA, January 2001
Intramural AIDS Targeted Antiviral Program (IATAP) Symposium, NIH, Bethesda, MD,
October 2000
Gordon Research Conference, Oxford, UK, August 2000
65th Cold Spring Harbor Symposium on Quantitative Biology, Cold Spring Harbor, NY, June
2000
Curriculum in Toxicology, University of North Carolina Graduate Program, Chapel Hill, NC,
March, 2000
BER Workshop 2000, Galveston, TX, March, 2000
Gordon Research Conference, Ventura, CA, March 2000
AACR Special Conference on DNA Repair, San Diego, CA, January 2000

Books: Editor or Co-Editor (Reference Volumes):

The Eukaryotic Nucleus: Molecular Biochemistry and Macromolecular Assemblies, Vol. 1-2.
Strauss, P.R., Wilson, S.H. (eds.), The Telford Press/CRC Press, 1990.
Cancer Biology and Biosynthesis. Wilson, S.H. (ed.), CRC Press, 1991.
Base Excision Repair, Progress in Nucleic Acids Research and Molecular Biology. Mitra, S.,
McCullough, A., Lloyd, R.S., and Wilson, S.H. (eds.), Academic Press, 2001.
Biomarkers of Environmentally Associated Disease: Technologies, Concepts, and Perspectives.
Wilson, S.H., and Suk, W. (eds.), CRC Press, 2002.

Patent:

Wilson, S.H. and Kronick, M.N. "An assay technique for reactions that produce radioactive
gases."

Environmental Health Research Articles Since 2000:

Volkow, N., Wilson, S.H., Battey, J., Weis, B.K., Satterlee, J., Rutter, J., Wilder, E., and
Krensky, A. The Epigenome in the NIH Roadmap: Why Now? (Submitted).

Wilson, S.H. Genes, environment, and health disparities: Risks and benefits of gene-
environment interactions research. Special Issue, Health Disparities and Social Justice,
Californian Journal of Health Promotion, 5:147-163, 2007.

Schwartz, D.A., Weis, B.K., and Wilson, S.H. Chapter 121: New frontiers in environmental
health research. **IN: Rom, W.N. (ed.), Environmental and Occupational Medicine**, 4th
Edition, Lippincott Williams & Wilkins, 2007, pp. 1814-1818.

Weis, B.K., Van Houten, B., Omenn, G.S., and Wilson, S.H. Chapter 60: Toxicogenomics and
exposure assessment. **IN: Rom, W.N. (ed.), Environmental and Occupational Medicine**, 4th
Edition, Lippincott Williams & Wilkins, 2007, pp. 943-953.

- Wilson, S.H.** and Schwartz, D.A. Disease-first: A new paradigm for environmental health research. **Environmental Health Perspectives**, 114:A398, 2006.
- Schwartz, D.A.**, Weis, B.K., and Wilson, S.H. The need for exposure health sciences. **Environmental Health Perspectives**, 113:A650, 2005.
- Wilson, S.H.** and Suk, W.A. Framework for environmental exposure research: The disease-first approach. **Molecular Interventions**, 5:262-267, 2005.
- Wilson, S.H.** Genetics and environmental health. **IN:** Frumkin, H (ed.), **Environmental Health: From Local to Global**, Jossey-Bass/Pfeiffer, 2005, pp. 128-142.
- Wilson, S.H.** and Schwartz, D.A. Strategic planning: Establishing need and clarifying motivation. **Environmental Health Perspectives**, 113:292, 2005.
- Weis, B.K.**, Balshaw, D., Barr, J., Brown, D., Ellisman, M., Liroy, P., Omenn, G., Potter, J., Smith, M., Sohn, L., Suk, W.A., Sumner, S., Swenberg, J., Walt, D., Watkins, S., Thompson, C., and Wilson, S.H. Personalized exposure assessment: Promising approaches for human environmental research. **Environmental Health Perspectives**, 113:840-848, 2005.
- Wilson, S.H.** An interview with Samuel H. Wilson, M.D., by Sara Shostak, Ph.D., M.P.H., DeWitt Stetten, Jr., Memorial Fellow in the History of Biomedical Sciences and Technology. Office of NIH History, OD, NIH. A transcript can be accessed by calling NIH at 301-496-6610.
- Wilson, S.H.** and Olden, K. The Environmental Genome Project: Phase I and beyond. **Molecular Interventions**, 4:147-156, 2004.
- Sharp, R.R.**, Yudell, M.A., and Wilson, S.H. Shaping science policy in the age of genomics. **Nat. Rev. Genet.**, 5:311-316, 2004.
- Mattison, D.R.**, Wilson, S., Coussens, C., and Gilbert, D. (eds.), **The Role of Environmental Hazards in Premature Birth**. A Workshop Summary for the Roundtable on Environmental Health Sciences, Research, and Medicine. Washington, DC: National Academies Press, 2003.
- Wilson, S.H.** Promoting environmental health through partnership, planning, and environmental stewardship. **IN:** Rubin, E.R. and Schappert, S.L. (eds.), **Meeting Health Needs in the 21st Century**, Association of Academic Health Centers, 2003, pp. 47-54.
- Wilson, S.H.** Remarks and charge to participants. **IN:** Wilson, S.H., Jones, L., Coussens, C., and Hanna, K. (eds.), **Cancer and the Environment: Gene-Environment Interaction**. A Workshop Summary for the Roundtable on Environmental Health Sciences, Research, and Medicine. Washington, DC: National Academies Press, 2002, pp. 7-8.

Wilson, S.H., Jones, L., Coussens, C., and Hanna, K. (eds.), **Cancer and the Environment: Gene-Environment Interaction**. A Workshop Summary for the Roundtable on Environmental Health Sciences, Research, and Medicine. Washington, DC: National Academies Press, 2002.

Suk, W.A. and Wilson, S.H. Overview and future of molecular biomarkers of exposure and early disease in environmental health. **IN:** Suk, W.A. and Wilson, S.H. (eds.), **Biomarkers of Environmentally Associated Disease: Technologies, Concepts, and Perspectives**. CRC Press, May 2002, pp. 3-15.

Wilson, S.H. Gene-environment interactions as the new research model in environmental health. Written Senate Hearing Testimony for Senate Environment and Public Works Committee. Garden City, Long Island, New York, June 11, 2001.

Wilson, S.H. Remarks and charge to participants. **IN:** Hanna, K. and Coussens, C. (eds.), **Rebuilding the Unity of Health and the Environment - A New Vision of Environmental Health for the 21st Century**. A Workshop Summary for the Roundtable on Environmental Health Sciences, Research, and Medicine. Washington, DC: National Academies Press, 2001, pp. 4-5.

Olden, K. and Wilson, S.H. Environmental health and genomics: Visions and implications. **Nat. Rev. Genet.**, 1:149-153, 2000.

Wilson, S.H. Working together: Communities and scientists can make a difference. **Lubbock Magazine**, 6, 44, 2000.

Wilson, S.H. Executive summary. **IN:** "Biomedical Research Leaders: Report on Needs, Opportunities, Difficulties, Education and Training, and Evaluation." **Environmental Health Perspectives**, 108:993-994, 2000.

Wilson, S.H. and Merkle, S. Introduction, vision, and future trends in the research environment. **IN:** "Biomedical Research Leaders: Report on Needs, Opportunities, Difficulties, Education and Training, and Evaluation." **Environmental Health Perspectives**, 108:979-980, 2000.

Wilson, S.H., Merkle, S., Brown, D., Moskowitz, J., Hurley, D., Brown, D., Bailey, B.J., McClain, M., Misenhimer, M., Buckalew, J., and Burks, T. Biomedical research leaders: Report on needs, opportunities, difficulties, education and training, and evaluation. Wilson, S.H. (ed.). **Environmental Health Perspectives**, 108 Suppl 6:979-995, 2000.

Wilson, S.H. Environmental medicine at a crossroad: Health in the United States. **Environmental Health Perspectives**, 108:A56, 2000.

Environmental Health Research Major Speeches & Presentations Since 2000:

Wilson, S.H. Presentation. Understanding the Role of Genomics in Health Disparities: Toward a New Research Agenda. College Park, MD, September 24, 2008.

Wilson, S.H. Opening and closing remarks. Partnerships in Environmental Public Health Workshop. Research Triangle Park, July 1, 2008.

Wilson, S.H. Overview of NIEHS research. University of California, Riverside. Riverside, CA, June, 18, 2008.

Wilson, S.H. Presentation. UCLA/USC Briefing on Environmental Health. Los Angeles, CA, May 27, 2008.

Wilson, S.H. Overview of NIEHS research. Environmental Health Meeting. Berkeley, CA, May 20-21, 2008.

Wilson, S.H. Overview and welcome. IACC Autism Town Hall Meeting on Strategic Plan. Davis, CA, May 3, 2008.

Wilson, S.H. Overview of NIEHS research. Lombardi Comprehensive Cancer Center. Washington, DC, May 2, 2008.

Wilson, S.H. Presentation. Congressional Briefing on Children's Environmental Health Research Results. Washington, DC, April 18, 2008.

Wilson, S.H. Opening Remarks. NIEHS Climate Change and Energy Workshop. Bethesda, MD, April 16, 2008.

Wilson, S.H. Overview of NIEHS. Association of Minority Health Professions Schools Leadership Meeting. New Orleans, LA, March 20, 2008.

Wilson, S.H. Presentation at the *Meet the Director* Session. Society of Toxicology Annual Meeting. Seattle, WA, March 19, 2008.

Wilson, S.H. Presentation. Senate/House Staff Briefing, House Subcommittee on Interior, Environment, and Related Agencies, on the NIEHS Superfund Program. Washington, DC, March 13, 2008.

Wilson, S.H. Opening remarks. ICCVAM 10-Year Anniversary Symposium. Bethesda, MD, February 5, 2008.

Wilson, S.H. Overview of GEI. GEI Grantees Workshop. Bethesda, MD, January 24, 2008.

Wilson, S.H. Opening presentation. NanoHealth Enterprise Coordination Meeting. Bethesda, MD, January 16, 2008.

Wilson, S.H. Welcome and opening remarks. ONES Grantees Workshop. Research Triangle Park, NC, January 7, 2008.

Wilson, S.H. Healthy people, healthy economy: Integrating human health and emerging alternative fuels. NAS/IOM EHSRT Workshop, Environmental Health, Energy, and Transportation: Bringing Health to the Fuel Mixture. Washington, DC, November 29-30, 2007.

Wilson, S.H. Testimony. House Domestic Policy Subcommittee on “Will NIEHS’ New Priorities Protect Public Health?” Washington, DC, September 25, 2007.

Wilson, S.H. Implementation of the National Toxicology Program (NTP) Roadmap. NTP Board of Scientific Counselors Meeting. Research Triangle Park, NC, June 22, 2007.

Wilson, S.H. Welcome and opening remarks. NTP: Mold Studies Information Workshop. Research Triangle Park, NC, March 5, 2007.

Wilson, S.H. Welcome and opening remarks. International Council on Nanotechnology Workshop, NIH. Bethesda, MD, January 9, 2007.

Wilson, S.H. Welcome and opening remarks. Toxicogenomic Research Consortium, National Center for Toxicogenomics/Ray Tennant Symposium, UNC Friday Center. Chapel Hill, NC, December 4, 2006.

Wilson, S.H. Vision for the National Toxicology Program. NTP Retreat. Research Triangle Park, NC, October 20, 2006.

Wilson, S.H. Introduction and Charge. Working Group on Integrated Translational Research in DNA Repair. San Francisco, CA, September 28-29, 2006.

Wilson, S.H. Opening Remarks. 2nd Annual NIEHS Center for Rodent Genetics Conference, Unveiling Genome-wide DNA Variation in 15 Diverse Mouse Strains: Using Mouse Genetics and Genomics to Understand Human Disease. Research Triangle Park, NC, September 26, 2006.

Wilson, S.H. Welcoming comments. National Toxicology Program: Biomarkers for Toxicology Studies Workshop. Research Triangle Park, NC, September 20, 2006.

Wilson, S.H. Current state of the science. IOM Roundtable on Environmental Health Sciences, Research, and Medicine Workshop, From Exposure to Human Disease: Research Strategies to Address Current Challenges. Washington, DC, September 15, 2006.

Wilson, S.H. Risks and benefits of gene-environment interactions research. Session on Environmental Health and Health Disparities. 4th Annual Disparities in Health in America: Working Toward Social Injustice. Houston, TX, June 26, 2006.

Wilson, S.H. Update on the Genes, Environment, and Health Initiative. Session I: Understanding the Role of Genetic, Environmental, and Social Factor in Human Disease and Health Disparities. Workshop on Enhancing Capacity to Study Gene-Environment Interactions in Complex Traits: Implications for Health Disparities. Boston, MA, June 21, 2006.

Wilson, S.H. NIEHS Programs and Perspectives, Annual University-Federal Dialogue on Environmental and Energy Research and Education. Council of Environmental Deans and Directors, National Council for Science and the Environment. Washington, DC, April 24, 2006.

Wilson, S.H. Discussant. Symposium on Exposure Science: A Requirement for Reducing Human Environmental Health Risks. AAAS Annual Meeting. St. Louis, MO, February 18, 2006.

Wilson, S.H. Opening remarks. Superfund Basic Research Annual Meeting, Research Translation and Megsites. New York, NY, January 12, 2006.

Wilson, S.H. Moderator. Session III, Preparing for the Future: Environmental health research needs. IOM/EHSRT Meeting on Environmental Public Health Impacts of Disasters: Hurricane Katrina. Washington, DC, October 20, 2005.

Wilson, S.H. The oceans and human health. Town Hall Meeting at the University of North Carolina - Wilmington, Center for Marine Sciences. Wilmington, NC, October 11, 2005.

Wilson, S.H. Welcome and opening remarks, Introduction of Dr. T.-K. Lee. Symposium on Addiction and Chemical Intolerance: A Shared Etiology? Research Triangle Park, NC, September 19, 2005.

Wilson, S.H. Introductory remarks. Chair, Federal Liaison Group to the NRC/NAS Committee on Emerging Issues and Data on Environmental Contaminants. Washington, DC, July 7, 2005.

Wilson, S.H. Welcome and opening remarks. The National Toxicology Program: A Quarter Century of Toxicology for Public Health; Good Science for Good Decisions. Washington, DC, May 10, 2005.

Wilson, S.H. NIEHS Environmental Genome Project. Second Meeting of the NRC/NAS Committee on Applications of Toxicogenomic Technologies to Predictive Toxicology. Washington, DC, May 3, 2005.

Wilson, S.H. Toxicogenomic data and databases. 9th Meeting of the NRC/NAS Committee on Emerging Issues and Data on Environmental Contaminants. New Orleans, LA, March 10, 2005.

Wilson, S.H. Introductory remarks. Chair, Session on Epidemiology and Genetics. 2nd NIH International Congress: Advances in Uterine Leiomyoma Research and Clinical Implications. Bethesda, MD, February 24, 2005.

Wilson, S.H. A renaissance in exposure assessment research. NAS/IOM Meeting of the Committee on Research Priorities for Earth Science and Public Health. Washington, DC, February 3, 2005.

Wilson, S.H. Brief overview of indoor air quality research supported by the NIEHS, NIH. Surgeon General's Workshop on Healthy Indoor Environment. Bethesda, MD, January 13, 2005.

Wilson, S.H. NIEHS objectives for this study and applications and challenges in toxicogenomics. First Meeting of the NRC/NAS Committee on Applications of Toxicogenomic Technologies to Predictive Toxicology. Washington, DC, January 12, 2005.

Wilson, S.H. NIEHS objectives and challenges in toxicogenomics. 8th Meeting of the NRC/NAS Committee on Emerging Issues and Data on Environmental Contaminants. Washington, DC, January 4, 2005.

Wilson, S.H. A renaissance in exposure assessment research: Exposure technology development for the post-genomic era. Fifteenth Annual Conference of the International Society of Exposure Analysis. Philadelphia, PA, October 18, 2004.

Wilson, S.H. Opening remarks and charge to participants. IOM Roundtable on Environmental Health Sciences, Research, and Medicine Workshop, Global Environmental Health in the 21st Century: From Governmental Regulation to Corporate Social Responsibility. Washington, DC, October 13, 2004.

Wilson, S.H. Session facilitator. Design for Health: Summit for Massachusetts Health Care Decision Makers. Boston, MA, September 28-29, 2004.

Wilson, S.H. Precautionary principle/environmental health. Design for Health: Summit for Massachusetts Health Care Decision Makers. Boston, MA, September 28-29, 2004.

Wilson, S.H. Environmental health: A response based on partnership, planning, and environmental stewardship. Design for Health: Summit for Massachusetts Health Care Decision Makers. Boston, MA, September 28-29, 2004.

Wilson, S.H. Discussant on environmental toxicology development. AGES Working Group Meeting, National Institutes of Health. Bethesda, MD, September 1, 2004.

Wilson, S.H. Subgroup report on environmental toxicology development. The American Genes and Environment Study (AGES) Working Group Meeting, National Institutes of Health. Bethesda, MD, September 1, 2004.

Wilson, S.H. Public health monitoring and training needs. Workshop on Public Health Risks of Disasters: Building Capacity to Respond. Co-sponsored by the IOM Roundtable on Environmental Health Sciences, Research, and Medicine and the National Academies' Disasters Roundtable. Washington, DC, June 22, 2004.

Wilson, S.H. Opening remarks. Conference on Obesity and the Built Environment: Improving Public Health Through Community Design. Washington, DC, May 24, 2004.

Wilson, S.H. Disease-oriented approach. Chair, NIEHS Annual Leadership Retreat, Innovative Approaches to Exposure Assessment: Historical Approaches vs. a Disease-oriented Approach That Takes Advantage of Modern Tools of Biology. Greensboro, NC, May 19, 2004.

Wilson, S.H. Genetics, federal classification, and environmental health. Meeting on Colliding Categories: Haplotypes, Race, and Ethnicity. Minneapolis, MN, April 26, 2004.

Wilson, S.H. NIEHS perspectives. International Conference on Biomarkers for Toxicology and Molecular Epidemiology. Atlanta, GA, March 15-17, 2004.

Wilson, S.H. Overview of the built environment and its impact on health. IOM on Environmental Health Sciences, Research and Medicine, Rebuilding the Unity of Health and the Environment: The Greater Houston Metropolitan Area. Houston, TX, January 23, 2004.

Wilson, S.H. On the status of global genomic approaches toward tissue classification and stress response characterization. International Life Sciences Institute Health and Environmental Sciences Institute Annual Meeting. Washington, DC, January 21, 2004.

Wilson, S.H. Emerging evidence linking environmental pollutants to heart disease. American Heart Association Annual Meeting (a scientific session) 2003. Orlando, FL, November 9, 2003.

Wilson, S.H. Risks and benefits of gene-environmental interactions research. Series at Rice University, Disparities in Health in America: Working Toward Social Justice. Houston, TX, November 4, 2003.

Wilson, S.H. Environmental genome. Twenty-fourth Annual Meeting of the American College of Toxicology's Symposium on The Human Genome and Toxicology. Washington, DC, November 3, 2003.

Wilson, S.H. Health and the built environment. Indiana Governor's Conference on Environmental Investment: Increasing Your Rate of Return. Keynote Speaker. Fort Benjamin Harrison, IN, October 30, 2003.

Wilson, S.H. Research in the context of emerging scientific concepts. NIEHS Superfund Quad-University/EPA Region 9 Conference, Emerging Scientific Issues for Superfund. Berkeley, CA, October 9, 2003.

Wilson, S.H. Future of structural biology. Structural Biology Symposium. Research Triangle Park, NC, September 23, 2003.

Wilson, S.H. The environmental health crisis (including sprawl): A response based on partnership, planning, and environmental stewardship. Workshop on Sprawl: The Impact on Vulnerable Populations, University of Cincinnati. Cincinnati, OH, July 8, 2003.

Wilson, S.H. Exposure analysis: An integral part of disease prevention. American Chemistry Council, LRI Annual Science Meeting. Herndon, VA, June 24, 2003.

Wilson, S.H. Increasing precision in environmental health research. Gordon Research Conference on Toxicogenomics, Keynote Speaker. Lewiston, ME, June 22, 2003.

Wilson, S.H. The Environmental Genome Project. Cincinnati Comparative Mouse Genomics Centers Symposium on Genes, Environment, and Disease. Boston, MA, June 9, 2003.

Wilson, S.H. Opening remarks. Cincinnati Comparative Mouse Genomics Centers Symposium on Genes, Environment, and Disease. Boston, MA, June 9, 2003.

Wilson, S.H. Co-Chair and introduction. Genetic Variation and Gene-Environment Interaction in Human Health and Disease. NIH, Bethesda, MD, April 16, 2003.

Wilson, S.H. Co-Chair and introduction. Advances in Toxicogenomics: NIEHS National Center for Toxicogenomics. A Symposium at the Society of Toxicology Annual Meeting. Salt Lake City, UT, March 11, 2003.

Wilson, S.H. Respiratory disease and air quality. Chair and speaker, Symposium on Children's Environmental Health: Identifying and Preventing Environmental Risks. NIH, Bethesda, MD, February 24, 2003.

Wilson, S.H. Charge to the committee and report from the Federal Liaison Group. A Public Meeting of the NAS/NRC Committee on Emerging Issues. Washington, DC, February 6, 2003.

Wilson, S.H. NIEHS perspective. National Academies Workshop on the Differential Susceptibility of Older People to Environmental Hazards. Washington, DC, December 5-6, 2002.

Wilson, S.H. The role of genomics in environmental health. National Center for Environmental Assessment. Washington, DC, November 19, 2002.

Wilson, S.H. Implications of the broader definition of environmental health. 2002 Annual Meeting of the Assoc. of Academic Health Centers. Health Needs in the 21st Century: The Best Defense is a Strong Offense. Pasadena, CA, October 2-5, 2002.

Wilson, S.H. The impact of genomics on toxicology. Annual Meeting of the Mount Desert Island Biological Laboratory. Bar Harbor, ME, July 25, 2002.

Wilson, S.H. The environmental health sciences in the built environment. Health Disparities Workshop. Research Triangle Park, NC, July 15, 2002.

Wilson, S.H. NIEHS perspective. A mini-symposium at a meeting of the Board on Health Sciences Policy, IOM, NAS. Washington, DC, June 6, 2002.

Wilson, S.H. A conversation with the NIEHS Deputy Director. A session at the Society of Toxicology Annual Meeting. Nashville, TN, March 21, 2002.

Wilson, S.H. Use of genomics in environmental health research. West Harlem Environmental Action (WEACT) National Conference and Community Dialogue on Human Genetics, Environment, and Communities of Color: Ethical and Social Implications. Columbia University. New York, NY, February 4, 2002.

Wilson, S.H. Perspectives on exposure analysis. International Society for Exposure Assessment, Special Lecture. Charleston, SC, November 8, 2001.

Wilson, S.H. Initiatives in the new field of toxicogenomics. Gordon Research Conference, (Toxicology), Keynote Speaker (Special Session). New London, CT, August 2001.

Wilson, S.H. Parkinson's disease research at NIEHS, NIH. Presentation at Parkinson's Disease Foundation Congressional Briefing. Washington, DC, June 25, 2001.

Wilson, S.H. Gene-environment interactions as the new research model in environmental health. Oral Testimony before Senate Environment and Public Works Committee. Senator Clinton Field Hearing at Garden City. Long Island, New York, June 11, 2001.

Wilson, S.H. Chromium 6 studies at NIEHS/NTP. Presentation at press conference with Congressman Adam Schiff and the NTP leadership. Glendale, CA, April 6, 2001.

Wilson, S.H. Introduction and moderator. Press conference on the formation of the National Center for Toxicogenomics. National Press Club. Washington, DC, December 7, 2000.

Wilson, S.H. Federal perspective panel proceedings from: Scientific symposium on Exposures to Environmental Contaminants Affecting Children. Cedar Creek, Texas, October 28, 2000.

Wilson, S.H. New tools for environmental health in the genomics era. Proceedings from: Scientific Symposium on Exposures to Environmental Contaminants Affecting Children. Cedar Creek, Texas, October 28, 2000.

Wilson, S.H. Community-based research and outreach in environmental health research. Proceedings from: Scientific Symposium on Exposures to Environmental Contaminants Affecting Children. Cedar Creek, Texas, October 28, 2000.

Wilson, S.H. Remarks and charge to participants. Institute of Medicine Roundtable on Environmental Health Sciences, Research, and Medicine. Workshop #1. Rebuilding the Unity of Health and the Environment: A New Vision of Environmental Health for the 21st Century. June 20, 2000. Washington, DC, June 20-21, 2000.

Wilson, S.H. US/Mexico border environmental health: Communities can make a difference. Speech at the UCSD US/Mexico Border Research Meeting. La Jolla, California, June 12, 2000.

Wilson, S.H. Co-Chair and workshop speaker. International Conference on Arctic Development, Pollution and Biomarkers of Human Health. Anchorage, AL, April 30- May 3, 2000.

Wilson, S.H. Environmental genomics. Keynote Speaker, Conference on Bioinformatics of Genes and ESTs Relevant to Membrane and Cellular Toxicology. Salisbury Cove, ME, April 28-29, 2000.

Wilson, S.H. Children's environmental health: A national perspective. Keynote Speaker. The Wisconsin Annual Environmental Health Symposium, Environmental Health and Safety Risks for Children. Eau Claire, WI, April 27, 2000.

Wilson, S.H. Safety-related research. Presentation at Building Effective Partnerships - FDA and Stakeholders Public Meeting, Duke University Medical Center. Durham, NC, April 12, 2000.

Wilson, S.H. Border issues. Presentation at the International Consortium for the Environment. Border Health: Making a Difference. San Antonio, TX, March 11-15, 2000.

Wilson, S.H. Oceans and health. Presentation at the Public Policy Forum of the Consortium for Oceanographic Research and Education (CORE). Washington, DC, March 7, 2000.

Bibliography (Peer-reviewed and invited research articles):

1. **Schmidt-Collerus, J.J.**, Krimmel, J.A., Smith, C.D., and Wilson, S.H. Polymerization by the Diels-Alder reaction. University of Denver Research Institute Project Report to Olin-Matheson Corp. for period 1959-1962.
2. **Gray, D.N.**, Bonamo, F., Knight, R., Wilson, S.H., and Schmidt-Collerus, J.J. Synthesis and characterization of ultraviolet radiation absorbers. Progress Reports No. 1-4, 1961-1962 Wright-Patterson Air Development Center, U.S. Air Force 33616-8251. TASK No. 73120.
3. **Wilson, S.H.** and Hoagland, M.B. Studies on the physiology of rat liver polyribosomes: Quantitation and intracellular distribution of ribosomes. **Proc. Natl. Acad. Sci. USA**, 54:600-607, 1965.
4. **Wilson, S.H.** and Hoagland, M.B. Physiology of rat-liver polysomes: The stability of messenger ribonucleic acid and ribosomes. **Biochem. J.**, 103:556-566, 1967.
5. **Wilson, S.H.**, Hill, H.Z., and Hoagland, M.B. Physiology of rat-liver polysomes: Protein synthesis by stable polysomes. **Biochem. J.**, 103:567-572, 1967.
6. **Wilson, S.H.** Stability of rat liver messenger RNA: Long and short half-life cytoplasmic messenger RNA molecules indicate mechanisms for controlling differential stability. Honors Thesis, Harvard Medical School, Harvard University, February 1, 1968.
7. **Hoagland, M.B.**, Wilson, S.H., and Quincey, R.V. Some light upon the "Membrane RNA" problem. **IN: San Pietro, A., Lamborg, M.R., and Kenney, F.T. (eds.), Regulatory Mechanisms for Protein Synthesis in Mammalian Cells; third Kettering Symposium.** Academic Press, 1968, pp. 179-181.
8. **Wilson, S.H.** and Quincey, R.V. Quantitative determination of low molecular weight ribonucleic acids in rat liver microsomes. **J. Biol. Chem.**, 244:1092-1096, 1969.
9. **Quincey, R.V.** and Wilson, S.H. The utilization of genes for ribosomal RNA, 5S RNA, and transfer RNA in liver cells of adult rats. **Proc. Natl. Acad. Sci. USA**, 64:981-988, 1969.
10. **Blume, A.**, Gilbert, F., Wilson, S.H., Farber, J., Rosenberg, R., and Nirenberg, M. Regulation of acetylcholinesterase in neuroblastoma cells. **Proc. Natl. Acad. Sci. USA**, 67:786-792, 1970.
11. **Wilson, S.H.** and Kronick, M.N. A new assay technique for reactions that produce radioactive gases. **Anal. Biochem.**, 43:460-467, 1971.
12. **Wilson, S.H.**, Schrier, B.K., Farber, J.L., Thompson, E.J., Rosenberg, R.N., Blume, A.J., and Nirenberg, M.W. Markers for gene expression in cultured cells from the nervous system. **J. Biol. Chem.**, 247:3159-3169, 1972.
13. **Hill, H.Z.**, Wilson S.H., and Hoagland, M.B. Patterns of albumin and general protein synthesis in rat liver as revealed by gel electrophoresis. **Biochim. Biophys. Acta.**, 269:477-484, 1972.
14. **Wilson, S.H.** and Kuff, E.L. A novel DNA polymerase activity found in association with intracisternal A-type particles. **Proc. Natl. Acad. Sci. USA**, 69:1531-1536, 1972.
15. **Miller, J.V., Jr.**, Thompson, E.B., Kuff, E.L., and Wilson, S.H. Polydeoxythymidylate inhibition of rabbit reticulocyte RNA dependent protein synthesis in a Krebs II ascites cell system. **Biochem. Biophys. Res. Commun.**, 48:1280-1286, 1972.
16. **Wilson, S.H.**, Kuff, E.L., Bohn, E.W., and Lueders, K.K. Studies on DNA synthesis in murine myeloma: II. Activation of latent RNA-dependent DNA polymerase activity in membrane fractions. **Biochem. Biophys. Res. Commun.**, 49:1093-1099, 1972.

17. **Wilson, S.H.**, Kuff, E.L., Bohn, E.W., Lueders, K.K., and Matsukage, A. DNA polymerase in association with intracisternal A-type particles. **IN:** Wells, R.D. and Inman, R.B. (eds.), **DNA Synthesis *In Vitro***. University Park Press, 1973, pp. 361-367.
18. **Stromberg, K.**, Gantt, R., and Wilson, S.H. Structural studies on avian myeloblastosis virus: Conditions for isolation and biochemical characteristics of the core component. **Biochim. Biophys. Acta.**, 304:1-11, 1973.
19. **Miller, J.V., Jr.**, Wilson, S.H., Kuff, E.L., and Thompson, E.B. Inhibition of cell-free globin synthesis by polydeoxythymidylate. **Biochim. Biophys. Acta.**, 294:507-516, 1973.
20. **Thompson, E.J.**, Wilson, S.H., Schuette, W.H., Whitehouse, W.C., and Nirenberg, M.W. Measurement of the rate and velocity of movement by single heart cells in culture. **Amer. J. Card.**, 32:162-166, 1973.
21. **Schrier, B.K.** and Wilson, S.H. Investigation of methods for measurement of radioactivity in tritiated DNA and applications to assays for DNA polymerase activity. **Anal. Biochem.**, 56:196-207, 1973.
22. **Matsukage, A.**, Bohn, E.W., and Wilson, S.H. Multiple forms of DNA polymerase in mouse myeloma. **Proc. Natl. Acad. Sci. USA**, 71:578-582, 1974.
23. **Wilson, S.H.**, Bohn, E.W., Matsukage, A., Lueders, K.K., and Kuff, E.L. Studies on the relationship between deoxyribonucleic acid polymerase activity and intracisternal A-type particles in mouse myeloma. **Biochemistry**, 13:1087-1094, 1974.
24. **Stromberg, K.** and Wilson, S.H. Structural studies of avian myeloblastosis virus: Selective release of ribonucleoprotein polypeptides from the core component and partial purification of the DNA polymerase. **Biochim. Biophys. Acta.**, 361:53-58, 1974.
25. **Minna, J.D.**, Gazdar, A.F., Iverson, G.M., Marshall, T.H., Stromberg, K., and Wilson, S.H. Onconavirus expression in human x mouse hybrid cells segregating mouse chromosomes. **Proc. Natl. Acad. Sci. USA**, 71:1695-1700, 1974.
26. **Bohn, E.W.**, Matsukage, A., and Wilson, S.H. Stimulation of DNA polymerase activity by the combination of p-hydroxymercuribenzoate and dithiothreitol. **Biochim. Biophys. Res. Commun.**, 59:243-251, 1974.
27. **Bohn, E.W.** and Wilson, S.H. Studies on the activity of the A particle-associated DNA polymerase. **Cancer Res.**, 34:1977-1981, 1974.
28. **Pertel, R.** and Wilson, S.H. Histamine content of the nematode *Caenorhabditis elegans*. **Comp. Gen. Pharmac.**, 5:83-85, 1974.
29. **Matsukage, A.**, Bohn, E.W., and Wilson, S.H. Differential sensitivity of low molecular weight DNA polymerase to sulfhydryl-blocking reagents. **Biochim. Biophys. Acta.**, 383:338-343, 1975.
30. **Matsukage, A.**, Bohn, E.W., and Wilson, S.H. On the DNA polymerase III of mouse myeloma: Partial purification and characterization. **Biochemistry**, 14:1006-1020, 1975.
31. **Schrier, B.K.**, Wilson, S.H., and Nirenberg, M. Cultured cell systems and methods for neurobiology. **IN:** Fleischer, S. and Packer, L. (eds.), **Methods in Enzymology, Biomembranes: Part B**. Academic Press, 1974, Vol. 32, pp. 765-788.
32. **Schrier, B.K.** and Wilson, S.H. On the measurement of tritium in DNA and its applications to the assay of DNA polymerase activity. **IN:** Prescott, D.M. (ed.), **Methods in Cell Biology**. Academic Press, 1976, Vol. 13, pp. 105-120.
33. **Pitha, J.** and Wilson, S.H. Template specific inhibitor of mammalian DNA polymerases. **Nucleic Acids Res.**, 3:825-834, 1976.

34. **Kuff, E.L.**, Lueders, K.K., Orenstein, J., and Wilson, S.H. Differential response of type C and intracisternal type A particle markers in cells treated with iododeoxyuridine and dexamethasone. **J. Virol.**, 19:709-716, 1976.
35. **Matsukage, A.**, Sivarajan, M., and Wilson, S.H. Studies on DNA α -polymerase of mouse myeloma: Partial purification and comparison of three molecular forms of the enzyme. **Biochemistry**, 15:5305-5314, 1976.
36. **Wilson, S.H.**, Matsukage, A., Bohn, E.W., Chen, Y.C., and Sivarajan, M. Polynucleotide recognition by DNA α -polymerase. **Nucleic Acids Res.**, 4:3981-3996, 1977.
37. **Pitha, J.**, Wilson, S.H., and Pitha, P.M. A vinyl polymer with purine residues deficient in base pairing inhibits murine leukemia virus replication. **Biochem. Biophys. Res. Commun.**, 81:217-223, 1978.
38. **Tanabe, K.**, Bohn, E.W., and Wilson, S.H. Steady-state kinetics of mouse DNA polymerase β . **Biochemistry**, 18:3401-3407, 1979.
39. **Chen, Y.-C.**, Bohn, E.W., Planck, S.R., and Wilson, S.H. Mouse DNA polymerase α : Subunit structure and identification of a species with associated exonuclease. **J. Biol. Chem.**, 254:11678-11687, 1979.
40. **Minna, J.D.**, Marshall, T.H., Brown, S.H., Burk, R.D., Lemon, R.S., and Wilson, S.H. Regulation of expression of type C virion DNA polymerase (reverse transcriptase) in human x mouse and human x rat hybrid cells. **Somatic Cell Genet.**, 5:991-1011, 1979.
41. **Planck, S.R.**, Tanabe, K., and Wilson, S.H. Distinction between mouse DNA polymerases α and β by tryptic peptide mapping. **Nucleic Acids Res.**, 8:2771-2782, 1980.
42. **Planck, S.R.** and Wilson, S.H. Studies on the structure of mouse helix-destabilizing protein-1. **J. Biol. Chem.**, 255:11547-11556, 1980.
43. **Detera, S.D.**, Becerra, S.P., Swack, J., and Wilson, S.H. Studies on the mechanism of DNA polymerase α : Nascent chain elongation, steady state kinetics and the initiation phase of DNA synthesis. **J. Biol. Chem.**, 256:6933-6943, 1981.
44. **Albert, W.**, Grummt, F., Hübscher, U., and Wilson, S.H. Structural homology among calf thymus α -polymerase polypeptides. **Nucleic Acids Res.**, 10:935-946, 1982.
45. **Detera, S.D.** and Wilson, S.H. Studies on the mechanism of *Escherichia coli* DNA polymerase I large fragment: Chain termination and modulation by polynucleotides. **J. Biol. Chem.**, 257:9770-9780, 1982.
46. **Karawya, E.M.** and Wilson, S.H. Studies on catalytic subunits of mouse myeloma α -polymerase. **J. Biol. Chem.**, 257:13129-13134, 1982.
47. **Becerra, S.P.**, Detera, S.D., and Wilson, S.H. Anomalous electrophoretic migration of oligodeoxynucleotides with terminal -OH groups: Applications for DNA exonuclease characterization. **Anal. Biochem.**, 129:200-206, 1983.
48. **Tanabe, K.**, Karawya, E., Fewell, J., Kuff, E.L., and Wilson, S.H. DNA polymerase and simian virus 40 infection of resting monkey cell: Induction of a novel aphidicolin resistant DNA polymerase activity. **Nucleic Acids Res.**, 11:8253-8268, 1983.
49. **Karawya, E.**, Swack, J., and Wilson, S.H. Improved conditions for activity gel analysis of DNA polymerase catalytic polypeptides. **Anal. Biochem.**, 135:318-325, 1983.
50. **Becerra, S.P.** and Wilson, S.H. Properties of a novel oligonucleotide-releasing bidirectional DNA exonuclease from mouse myeloma. **Biochemistry**, 23:908-914, 1984.
51. **Hazra, A.**, Detera-Wadleigh, S., and Wilson, S.H. Site-specific modification of *Escherichia coli* DNA polymerase I large fragment with pyridoxal 5'-phosphate. **Biochemistry**, 23:2073-2078, 1984.

52. **Detera-Wadleigh, S.**, Karawya, E., and Wilson, S.H. Synthesis of DNA polymerase by *in vitro* translation of calf RNA. **Biochem. Biophys. Res. Commun.**, 122:420-427, 1984.
53. **Morstyn, G.**, Russo, A., Carney, D.N., Karawya, E., Wilson, S.H., and Mitchell, J.B. Heterogeneity in the radiation survival curves and biochemical properties of human lung cancer cell lines. **J. Natl. Cancer Inst.**, 73:801-807, 1984.
54. **Karawya, E.**, Swack, J., Albert, W., Fedorko, J., Minna, J.D., and Wilson, S.H. Identification of a higher molecular weight DNA polymerase α catalytic polypeptide in monkey cells by monoclonal antibody. **Proc. Natl. Acad. Sci. USA**, 81:7777-7781, 1984.
55. **Detera-Wadleigh, S.**, Karawya, E., and Wilson, S.H. Synthesis of catalytically active polymerase α by *in vitro* translation of calf RNA. IN: Hübscher, U. and Spadari, S. (eds.), **Proteins Involved in DNA Replication**. Plenum Press, 1984, pp. 343-353.
56. **Swack, J.A.**, Karawya, E., Albert, W., Fedorko, J., Minna, J.D., and Wilson, S.H. Properties and applications of new monoclonal antibodies raised against calf DNA polymerase α . **Anal. Biochem.**, 147:10-21, 1985.
57. **Planck, S.R.** and Wilson, S.H. Native species of helix destabilizing protein-I in mouse myeloma identified by antibody probing of Western blots. **Biochem. Biophys. Res. Commun.**, 131:362-369, 1985.
58. **Mitchell, J.B.**, Karawya, E., Kinsella, T.J., and Wilson, S.H. Measurement of DNA polymerase β in skin fibroblast cell lines from patients with ataxia telangiectasia. **Mutation Res.**, 146:295-300, 1985.
59. **Sharief, F.S.**, Wilson, S.H., and Li, S.S.-L. Identification of the mouse low-salt-eluting single-stranded DNA-binding protein as a mammalian lactate dehydrogenase-A isoenzyme. **Biochem. J.**, 233:913-916, 1986.
60. **Cobianchi, F.**, SenGupta, D., Zmudzka, B.Z., and Wilson, S.H. Structure of rodent helix-destabilizing protein revealed by cDNA cloning. **J. Biol. Chem.**, 261:3536-3543, 1986.
61. **SenGupta, D.N.**, Zmudzka, B.Z., Kumar, P., Cobianchi, F., Skowronski, J., and Wilson, S.H. Sequence of human DNA polymerase β mRNA obtained through cDNA cloning. **Biochem. Biophys. Res. Commun.**, 136:341-347, 1986.
62. **Zmudzka, B.Z.**, SenGupta, D., Matsukage, A., Cobianchi, F., Kumar, P., and Wilson, S.H. Structure of rat DNA polymerase β revealed by partial amino acid sequencing and cDNA cloning. **Proc. Natl. Acad. Sci. USA**, 83:5106-5110, 1986.
63. **Cobianchi, F.** and Wilson, S.H. Enzymatic techniques: Enzymes for modifying and labeling DNA and RNA. IN: Berger, S.L. and Kimmel, A.R. (eds.), **Methods in Enzymology, Guide to Molecular Cloning Techniques**. Academic Press, Inc., 1987, Vol. 152, pp. 94-110.
64. **SenGupta, D.N.**, Kumar, P., Zmudzka, B.Z., Coughlin, S., Vishwanatha, J.K., Robey, F.A., Parrott, C., and Wilson, S.H. Mammalian α -polymerase: Cloning of partial complementary DNA and immunobinding of catalytic subunit in crude homogenate protein blots. **Biochemistry**, 26:956-963, 1987.
65. **Wilson, S.H.**, Cobianchi, F., and Guy, H.R. cDNA cloning and structure-function relationships of a mammalian helix destabilizing protein: hnRNP particle core protein A1. IN: Thompson, E.B. and Papaconstantinou, J. (eds.), **DNA: Protein Interactions and Gene Regulation**. University of Texas Press, 1987, pp. 129-146.
66. **McBride, O.W.**, Zmudzka, B.Z., and Wilson, S.H. Chromosomal location of the human gene for DNA polymerase β . **Proc. Natl. Acad. Sci. USA**, 84:503-507, 1987.
67. **Anderson, R.S.**, Lawrence, C.B., Wilson, S.H., and Beattie, K.L. Genetic relatedness of human DNA polymerase β and terminal deoxynucleotidyltransferase. **Gene**, 60:163-173, 1987.

68. **Wilson, S.H.**, Abbotts, J., and Widen, S. Progress toward molecular biology of DNA polymerase β . **Biochim. Biophys. Acta.**, 949:149-157, 1988.
69. **Abbotts, J.**, SenGupta, D.M., Zmudzka, B.Z., Widen, S.G., and Wilson, S.H. Human DNA polymerase beta: Expression *E. coli* and characterization of the recombinant enzyme. **IN:** Moses, R.E. and Summers, W.C. (eds.), **DNA Replication and Mutagenesis**. American Society of Microbiology Press, 1988, pp. 55-67.
70. **Cobianchi, F.**, Karpel, R.L., Williams, K.L., Notario, V., and Wilson, S.H. Mammalian heterogeneous nuclear ribonucleoprotein complex protein A1: Large-scale overproduction in *Escherichia coli* and cooperative binding to single-stranded nucleic acids. **J. Biol. Chem.**, 263:1063-1071, 1988.
71. **Abbotts, J.**, SenGupta, D.N., Zmudzka, B., Widen, S.G., Notario, V., and Wilson, S.H. Expression of human DNA polymerase β in *Escherichia. coli* and characterization of the recombinant enzyme. **Biochemistry**, 27:901-909, 1988.
72. **Merrill, B.M.**, Stone, K.L., Cobianchi, F., Wilson, S.H., and Williams, K.R. Phenylalanines that are conserved among several RNA-binding proteins form part of a nucleic acid-binding pocket in the A1 heterogeneous nuclear ribonucleoprotein. **J. Biol. Chem.**, 263:3307-3313, 1988.
73. **Jensen, L.**, Kuff, E.L., Wilson, S.H., Steinberg, A., and Klinman, D. Antibodies from patients and mice with autoimmune diseases react with recombinant hnRNP core protein A1. **J. Autoimmunity**, 1:73-83, 1988.
74. **Abbotts, J.**, SenGupta, D.N., Zon, G., and Wilson, S.H. Studies on the mechanism of *Escherichia coli* DNA polymerase I large fragment: Effect of template sequence and substrate variation on termination of synthesis. **J. Biol. Chem.**, 263:15094-15103, 1988.
75. **Majumdar, C.**, Abbotts, J., Broder, S., and Wilson, S.H. Studies on the mechanism of human immunodeficiency virus reverse transcriptase: Steady-state kinetics, processivity and polynucleotide inhibition. **J. Biol. Chem.**, 263:15657-15665, 1988.
76. **Widen, S.G.**, Kedar, P., and Wilson, S.H. Human β -polymerase gene: Structure of the 5' flanking region and active promoter. **J. Biol. Chem.**, 263:16992-16998, 1988.
77. **Zmudzka, B.Z.**, Fornace, A., Collins, J., and Wilson, S.H. Characterization of DNA polymerase β mRNA: Cell-cycle and growth response in cultured human cells. **Nucleic Acids Res.**, 16:9587-9596, 1988.
78. **Nowak, R.**, Siedlecki, J.A., Kaczmarek, L., Zmudzka, B.Z., and Wilson, S.H. Levels and size complexity of DNA polymerase β mRNA in rat regenerating liver and organs. **Biochem. Biophys. Acta.**, 1008:203-207, 1989.
79. **Majumdar, C.**, Stein, C.A., Cohen, J.S., Broder, S., and Wilson, S.H. Stepwise mechanisms of HIV reverse transcriptase: Primer function of phosphorothioate oligodeoxynucleotide. **Biochemistry**, 28:1340-1346, 1989.
80. **Fornace, A.**, Zmudzka, B., Hollander, M.C., and Wilson, S.H. Induction of β -polymerase mRNA by DNA-damaging agents in Chinese hamster ovary cells. **Mol. Cell Biol.**, 9:851-853, 1989.
81. **Basu, A.**, Kedar, P., Wilson, S.H., and Modak, M.J. Active site modification of mammalian DNA polymerase β with pyridoxal 5' phosphate: Mechanism of inhibition and identification of Lysine 71 in the deoxynucleoside triphosphate binding pocket. **Biochemistry**, 28:6305-6309, 1989.

82. **Bebenek, K.**, Abbotts, J., Roberts, J., Wilson, S.H., and Kunkel, T.A. Specificity and mechanism of error-prone replication by human immunodeficiency virus-1 reverse transcriptase. **J. Biol. Chem.**, 264:16948-16956, 1989.
83. **Casas-Finet, J.R.**, Karpel, R.L., and Wilson, S.H. Biophysical studies on the mammalian heterogeneous nuclear ribonucleoprotein, Al, and its component domains. **SPIE Proceedings, Time-Resolved Laser Spectroscopy in Biochemistry II**, 1204:540-547, 1990.
84. **Kay, B.K.**, Sawhney, R.K., and Wilson, S.H. Potential for two isoforms of the Al ribonucleoprotein in *Xenopus laevis*. **Proc. Natl. Acad. Sci. USA**, 87:1367-1371, 1990.
85. **Wilson, S.H.** Gene regulation and structure-function studies of mammalian DNA polymerase β . IN: Strauss, P.R. and Wilson, S.H. (eds.), **The Eukaryotic Nucleus: Molecular Biochemistry and Macromolecular Assemblies**. The Telford Press, CRC Press, 1990, Vol. I, pp. 199-234.
86. **McBride, O.W.**, Kozak, C., and Wilson, S.H. Mapping of the gene for DNA polymerase β on mouse chromosome 8. **Cytogenet. Cell Genet.**, 53:108-111, 1990.
87. **Wilson, S.H.** hnRNP protein Al and insight on the mechanism of nucleic acid binding. IN: Wilson, S.H. (ed.), **Cancer Biology and Biosynthesis**. CRC Press, 1990, pp. 55-89.
88. **Kumar, A.**, Widen, S.G., Williams, K.R., Kedar, P., Karpel, R.L., and Wilson, S.H. Studies of the domain structure of mammalian DNA polymerase β : Identification of a discrete template binding domain. **J. Biol. Chem.**, 265:2124-2131, 1990.
89. **Jeang, K.T.**, Widen, S.G., Semmes IV, O.J., and Wilson, S.H. HTLV-I-trans-activator protein, Tax, is a trans-repressor of the human β -polymerase gene. **Science**, 247:1082-1084, 1990.
90. **Kedar, P.S.**, Abbotts, J., Kovacs, T., Lesiak, K., Torrence, P., and Wilson, S.H. Mechanism of HIV reverse transcriptase: Enzyme-primer interaction as revealed through studies of a dNTP analogue, 3'-azido-dTTP. **Biochemistry**, 29:3603-3611, 1990.
91. **Englander, E.W.** and Wilson, S.H. Protein binding elements in the human β -polymerase promoter. **Nucleic Acids Res.**, 18:919-928, 1990.
92. **Trauger, R.J.**, Talbott, R., Wilson, S.H., Karpel, R., and Elder, J.H. A single-stranded nucleic acid binding sequence common to the heterogeneous nuclear ribonucleoprotein Al and murine recombinant virus GP 70. **J. Biol. Chem.**, 265:3674-3678, 1990.
93. **Zmudzka, B.Z.** and Wilson, S.H. Dereglulation of DNA polymerase β by sense and antisense RNA expression in mouse 3T3 cells alters growth rate. **Somatic Cell Molec. Genet.**, 16:311-320, 1990.
94. **Kedar, P.S.**, Lowy, D.R., Widen, S.G., Fornace, A.J., and Wilson, S.H. Transfected human β -polymerase promoter contains a *ras*-responsive element. **Mol. Cell Biol.**, 10:3852-3856, 1990.
95. **Kumar, A.**, Abbotts, J., Karawya, E., and Wilson, S.H. Identification and properties of the catalytic domain of mammalian DNA polymerase β . **Biochemistry**, 29:7156-7159, 1990.
96. **Kumar, A.**, Casas-Finet, J.R., Luneau, C.J., Karpel, R.L., Merrill, B.M., Williams, K.R., and Wilson, S.H. Mammalian heterogeneous nuclear ribonucleoprotein Al: Nucleic acid binding properties of the COOH-terminal domain. **J. Biol. Chem.**, 265:17094-17100, 1990.
97. **Becerra, S.P.**, Clore, G.M., Gronenborn, A.M., Karlstrom, A.R., Stahl, S.J., Wilson, S.H., and Wingfield, P.T. Purification and characterization of the RNase H domain of HIV-1 reverse transcriptase expressed in recombinant *Escherichia coli*. **FEBS Lett.**, 270:76-80, 1990.
98. **Kumar, A.** and Wilson, S.H. Studies of the strand-annealing activity of mammalian hnRNP complex protein Al. **Biochemistry**, 29:10717-10722, 1990.

99. **Chen, K.-H.**, Widen, S.G., Wilson, S.H., and Huang, K.-P. Characterization of the 5'-flanking region of the rat protein kinase C γ gene. **J. Biol. Chem.**, 265:19961-19965, 1990.
100. **Abbotts, J.**, and Wilson, S.H. Mechanistic Analysis of HIV-1 Reverse Transcriptase. IN: Kumar, A. (ed.), **Advances in Molecular Biology and Targeted Treatment of AIDS**. Plenum Press, 1991, pp. 1-19.
101. **Baillon, J.G.**, Kumar, A., Wilson, S.H., and Jerina, D.M. A leucine zipper-like motif may mediate HIV reverse transcriptase subunit binding. **The New Biologist**, 3:1015-1019, 1991.
102. **Abbotts, J.**, Jaju, M., and Wilson, S.H. Thermodynamics of A:G mismatch poly (dG) synthesis by HIV-1 reverse transcriptase. **J. Biol. Chem.**, 266:3937-3943, 1991.
103. **Nadler, S.G.**, Merrill, B.M., Roberts, W.J., Keating, K.M., Lisbin, M.J., Barnett, S.F., Wilson, S.H., and Williams, K.R. Interactions of the A1 heterogeneous nuclear ribonucleoprotein and its proteolytic derivative, UP1, with RNA and DNA: Evidence for multiple RNA binding domains and salt-dependent binding mode transitions. **Biochemistry**, 30:2968-2976, 1991.
104. **Kedar, P.S.**, Widen, S.G., Englander, E.W., Fornace, A.J., and Wilson, S.H. The ATF/CREB transcription factor-binding site in the polymerase β promoter mediates the positive effect of *N*-methyl-*N'*-nitro-*N*-nitrosoguanidine on transcription. **Proc. Natl. Acad. Sci., USA**, 88:3729-3733, 1991.
105. **Widen, S.G.** and Wilson, S.H. Mammalian β -polymerase promoter: Large-scale purification and properties of ATF/CREB palindrome binding protein from bovine testes. **Biochemistry**, 30:6296-6305, 1991.
106. **Englander, E.W.**, Widen, S.G., and Wilson, S.H. Mammalian β -polymerase promoter: Phosphorylation of ATF/CRE-binding protein and regulation of DNA binding. **Nucleic Acids Res.**, 19:3369-3375, 1991.
107. **Egan, W.**, Boal, J., Iyer, R.P., Storm, C., Wilson, S.H., Meyer, A., and Iversen, P. Abasic oligodeoxyribonucleoside phosphorothioates as inhibitors of the human immunodeficiency virus-1 (HIV-1): Phosphorothioate inhibition of HIV-1 reverse transcriptase and interactions with Syrian hamster fibroblast (V79) cells. **Nucleosides Nucleotides**, 10:457-460, 1991.
108. **Casas-Finet, J.R.**, Karpel, R.L., Maki, A.H., Kumar, A., and Wilson, S.H. Physical studies of the tyrosine and tryptophan residues in mammalian A1 heterogeneous nuclear ribonucleoprotein: Support for a segmented structure. **J. Mol. Biol.**, 221:693-709, 1991.
109. **Casas-Finet, J.R.**, Kumar, A., Morris, G., Wilson, S.H., and Karpel, R.L. Spectroscopic studies of the structural domains of mammalian DNA β -polymerase. **J. Biol. Chem.**, 266:19618-19625, 1991.
110. **Sobol, R.W.**, Suhadolnik, R.J., Kumar, A., Lee, B.J., Hatfield, D.L., and Wilson, S.H. Localization of a polynucleotide binding region in the HIV-1 reverse transcriptase: Implication for primer binding. **Biochemistry**, 30:10623-10631, 1991.
111. **Becerra, P.S.**, Kumar, A., Lewis, M.S., Widen, S.G., Karawya E., Abbotts, J., Hughes, S.H., Shiloach, J., and Wilson, S.H. Protein-protein interactions of HIV-1 reverse transcriptase: Implication of central and C-terminal regions in subunit binding. **Biochemistry**, 30:11707-11719, 1991.
112. **Wilson, S.H.** and Abbotts, J. tRNA in the molecular biology of retroviruses. IN: Hatfield, D.L., Lee, B.J., and Pirtle, R.M. (eds.), **Transfer RNA in Protein Synthesis**. CRC Press, 1992, pp. 1-21.

113. **Abbotts, J.** and Wilson, S.H. Inhibitors of HIV-1 reverse transcriptase and fidelity of in vitro DNA replication. **J. Enzyme Inhibition**, 6:35-46, 1992.
114. **Knutson, Jay R.**, Chen, R.F., Porter, D.K., Hensley, P., Han, M.K., Kim, S.J., Wilson, S.H., Clague, M., and Williamson, C.K. Fluorescence quenching in proteins: Some applications to protein-DNA and protein-lipid interactions. **SPIE Proceedings, Time-Resolved Laser Spectroscopy in Biochemistry III**, 1640:102-117, 1992.
115. **Casas-Finet, J.R.**, Kumar, A., Karpel, R.L., and Wilson, S.H. Mammalian DNA polymerase β : Characterization of a 16-kDa transdomain fragment containing the nucleic acid-binding activities of the native enzyme. **Biochemistry**, 31:10272-10280, 1992.
116. **Englander, E.W.** and Wilson, S.H. The cloned promoter of the human DNA β -polymerase gene contains a cAMP response element functional in HeLa cells. **DNA and Cell Biol.**, 11:61-69, 1992.
117. **Casas-Finet, J.R.**, Wilson, S.H., and Karpel, R.L. Selective photochemical modification by trichloroethanol of tryptophan residues in proteins with a high tyrosine-to-tryptophan ratio. **Anal. Biochem.**, 205:27-35, 1992.
118. **Jenkins, T.M.**, Saxena, J.K., Kumar, A., Wilson, S.H., and Ackerman, E.J. DNA polymerase β and DNA synthesis in *Xenopus* oocytes and in a nuclear extract. **Science**, 258:475-478, 1992.
119. **Englander, E.W.** and Wilson, S.H. Regulation of transcription from the mammalian DNA polymerase β promoter by oncogene proteins. IN: Spandidos, D. (ed.), **Current Perspectives on Molecular and Cellular Oncology**. JAI Press LTD., 1992, Vol I, part A, pp. 111-129.
120. **Englander, E.W.** and Wilson, S.H. DNA damage response of cloned DNA β -polymerase promoter is blocked in mutant cell lines deficient in protein kinase A. **Nucleic Acids Res.**, 20:5527-5531, 1992.
121. **Wilson, S.H.**, Singhal, R.K., and Kumar, A. Structural and functional studies of mammalian DNA polymerase β . IN: Bohr, W.A., Wassermann, K., Kraemer, K.H. (eds.), **Alfred Benzon Symposium 35: DNA Repair Mechanisms**. 1992, pp. 343-360.
122. **Casas-Finet, J.R.**, Smith, J.D., Kumar, A., Kim, J.G., Wilson, S.H., and Karpel, R.L. Mammalian heterogeneous ribonucleoprotein A1 and its constituent domains. **J. Mol. Biol.**, 229:873-889, 1993.
123. **Abbotts, J.**, Bebenek, K., Kunkel, T.A., and Wilson, S.H. Mechanism of HIV-1 reverse transcriptase: Termination of processive synthesis on a natural DNA template is influenced by the sequence of the template-primer stem. **J. Biol. Chem.**, 268:10312-10323, 1993.
124. **Bebenek, K.**, Abbotts, J., Wilson, S.H., and Kunkel, T.A. Error-prone polymerization by HIV-1 reverse transcriptase: Contribution of template-primer misalignment, miscoding, and termination probability to mutational hot spots. **J. Biol. Chem.**, 268:10324-10334, 1993.
125. **Becerra, S.P.**, Kumar A., and Wilson, S.H. Expression of polypeptides of human immunodeficiency virus-1 reverse transcriptase in *Escherichia coli*. **Protein Expression and Purification**, 4:187-199, 1993.
126. **Kawa, S.**, Kumar, A., Smith, J.S., Becerra, S.P., Beard, W.A., Wilson, S.H., and Thompson, E.B. Expression and purification of the HIV-1 reverse transcriptase using the baculovirus expression vector system. **Protein Expression and Purification**, 4:298-303, 1993.
127. **Chen, K-H.**, Widen, S.G., Wilson, S.H., and Huang, K-P. Identification of a nuclear protein binding element within the rat brain protein kinase C γ promoter that is related to the developmental control of this gene. **FEBS Lett.**, 325:210-214, 1993.

- 128. Kumar, A., Kim, H.R., Sobol, R.W., Becerra, S.P., Lee, B.J., Hatfield, D.L., Suhadolnik, R.J., and Wilson, S.H.** Mapping of nucleic acid binding in proteolytic domains of HIV-1 reverse transcriptase. **Biochemistry**, 32:7466-7474, 1993.
- 129. Singhal, R.K. and Wilson, S.H.** Short gap-filling synthesis by DNA polymerase β is processive. **J. Biol. Chem.**, 268:15906-15911, 1993.
- 130. Beard, W.A. and Wilson, S.H.** Kinetic analysis of template•primer interactions with recombinant forms of HIV-1 reverse transcriptase. **Biochemistry**, 32:9745-9753, 1993.
- 131. Prasad, R., Kumar, A., Widen, S.G., Casas-Finet, J.R., and Wilson, S.H.** Identification of residues in the single-stranded DNA-binding site of the 8-kDa domain of rat DNA polymerase β by UV cross-linking. **J. Biol. Chem.**, 268:22746-22755, 1993.
- 132. Sobol, R.W., Fisher, W.L., Reichenbach, N.L., Kumar, A., Beard, W.A., Wilson, S.H., Charubala, R., Pfleiderer, W., and Suhadolnik, R.J.** HIV-1 reverse transcriptase: Inhibition by 2',5'-oligoadenylates. **Biochemistry**, 32:12112-12118, 1993.
- 133. Goel, R., Beard, W.A., Kumar, A., Casas-Finet, J.R., Strub, M.-P. Stahl, S.J., Lewis, M.S., Bebenek, K., Becerra, S.P., Kunkel, T.A., and Wilson, S.H.** Structure/function studies of HIV-1 reverse transcriptase: Dimerization-defective mutant L289K. **Biochemistry**, 32:13012-13018, 1993.
- 134. Prasad, R., Widen, S.G., Singhal, R.K., Watkins, J., Prakash, L., and Wilson, S.H.** Yeast open reading frame YCR14C encodes a DNA β -polymerase-like enzyme. **Nucleic Acids Res.**, 21:5301-5307, 1993.
- 135. Prasad, R., Casas-Finet, J.R., Karpel, R.L., and Wilson, S.H.** Characterization of a 32-residue peptide from rat DNA polymerase β with single-stranded DNA-binding affinity. **IN: Crabb J.W. (ed.), Techniques in Protein Chemistry V.** Academic Press, 1994, pp. 359-369.
- 136. Kim, S.-J., Lewis, M.S., Knutson, J.R., Porter, D., Kumar, A., and Wilson, S.H.** Characterization of the tryptophan fluorescence and hydrodynamic properties of rat DNA polymerase β . **J. Mol. Biol.**, 244:224-235, 1994.
- 137. Delahunty, M.D., Wilson, S.H., and Karpel, R.L.** Studies on primer binding of HIV-1 reverse transcriptase using a fluorescent probe. **J. Mol. Biol.**, 236:469-479, 1994.
- 138. Narayan, S., Widen, S.G., Beard, W.A., and Wilson, S.H.** RNA polymerase II transcription: Rate of promoter clearance is enhanced by a purified activating transcription factor/cAMP response element-binding protein. **J. Biol. Chem.**, 269, 12755-12763, 1994.
- 139. Beard, W.A. and Wilson, S.H.** Site-directed mutagenesis of HIV reverse transcriptase to probe enzyme processivity and drug binding. **IN: Erickson, J. and Abdel-Meguid, S. (eds.), Protein Engineering, Current Opinion in Biotechnology.** Current Biology Ltd Press, 1994, Vol. 5, pp. 414-421.
- 140. Prasad, R., Beard, W.A., and Wilson, S.H.** Studies of gapped DNA substrate binding by mammalian DNA polymerase β : Dependence on 5' phosphate group. **J. Biol. Chem.**, 269:18096-18101, 1994.
- 141. Sawaya, M.R., Pelletier, H., Kumar, A., Wilson, S.H., and Kraut, J.** Crystal structure of rat DNA polymerase β : Evidence for a common polymerase mechanism. **Science**, 264:1930-1935, 1994.
- 142. Pelletier, H., Sawaya, M.R., Kumar, A., Wilson, S.H., and Kraut, J.** Structures of ternary complexes of rat DNA polymerase β , a DNA template-primer, and ddCTP. **Science**, 264:1891-1903, 1994.

- 143. Liu, D.**, Derose, E.F., Prasad, R., Wilson, S.H., and Mullen, G.P. Assignments of ^1H , ^{15}N , and ^{13}C resonances for the backbone and side chains of N-terminal domain of DNA polymerase β . Determination of the secondary structure and tertiary contacts. **Biochemistry**, 33:9537-9545, 1994.
- 144. Idriss, H.**, Kumar, A., Casas-Finet, J.R., Guo, H., Damuni, Z., and Wilson, S.H. Regulation of *in vitro* nucleic acid strand annealing activity of heterogeneous nuclear ribonucleoprotein protein A1 by reversible phosphorylation. **Biochemistry**, 33:11382-11390, 1994.
- 145. Chyan, Y-J.**, Ackerman, S., Shepherd, N.S., McBride, O.W., Widen, S.G., Wilson, S.H., and Wood, T. G. The human DNA polymerase β gene structure. Evidence of alternative splicing in gene expression. **Nucleic Acids Res.**, 22:2719-2725, 1994.
- 146. Beard, W.A.**, Stahl, S.J., Kim, H-R., Bebenek, K., Kumar, A., Strub, M-Paule, Becerra, S.P., Kunkel, T.A., and Wilson, S.H. Structure/function studies of human immunodeficiency virus type 1 reverse transcriptase: Alanine scanning mutagenesis of an α -helix in the thumb subdomain. **J. Biol. Chem.**, 269:28091-28097, 1994.
- 147. Efrati, E.**, Tocco, G., Bruck, I., Eritja, R., Woodgate, R., Wilson, S.H., Tower, J., and Goodman, M.F. Biochemical analysis of possible deviations from the "A Rule": Specificity of nucleotide insertion at abasic DNA template lesions by pol β . **Proc. 10th International Congress Radiation Res.**, 2:324-331, 1995.
- 148. Beard, W.A.** and Wilson, S.H. Reverse transcriptase. **IN: Karn, J. (ed.), HIV: A Practical Approach, Volume 2: Biochemistry, Molecular Biology, Drug Discovery.** Oxford University Press, 1995, pp. 15-36.
- 149. Srivastava, D.K.**, Rawson, T.Y., Showalter, S.D., and Wilson, S.H. Phorbol ester abrogates up-regulation of DNA polymerase β by DNA alkylating agents in Chinese hamster ovary cells. **J. Biol. Chem.**, 270:16402-16408, 1995.
- 150. Singhal, R.K.**, Prasad, R., and Wilson, S.H. DNA polymerase β conducts the gap-filling step in uracil-initiated base excision repair in a bovine testis nuclear extract. **J. Biol. Chem.**, 270:949-957, 1995.
- 151. Narayan, S.**, Beard, W.A., and Wilson, S.H. DNA damage-induced transcriptional activation of a human DNA polymerase β chimeric promoter: Recruitment of preinitiation complex *in vitro* by ATF/CREB. **Biochemistry**, 34:73-80, 1995.
- 152. Jaju, M.**, Beard, W.A., and Wilson, S.H. Human immunodeficiency virus type 1 reverse transcriptase: 3'-Azidodeoxythymidine 5'-Triphosphate inhibition indicates two-step binding for template primer. **J. Biol. Chem.**, 270:9740-9747, 1995.
- 153. Beard, W.A.** and Wilson, S.H. Purification and domain-mapping of mammalian DNA polymerase β . **IN: Campbell, J.L. (ed.), Methods in Enzymology, DNA Replication.** Academic Press, 1995, Vol. 262, pp. 98-107.
- 154. Husain, I.**, Morton, B.S., Beard, W.A., Singhal, R.K., Prasad, R., Wilson, S.H., and Besterman, J.M. Specific inhibition of DNA polymerase β by its 14-kDa domain: Role of single- and double-stranded DNA binding and 5'-phosphate recognition. **Nucleic Acids Res.**, 23:1597-1603, 1995.
- 155. Bebenek, K.**, Beard, W.A., Casas-Finet, J.R., Kim, H.-R., Darden, T.A., Wilson, S.H., and Kunkel, T.A. Reduced frameshift fidelity and processivity of HIV-1 reverse transcriptase mutants containing alanine substitutions in helix H of the thumb subdomain. **J. Biol. Chem.**, 270:19516-19523, 1995.

- 156. Horton, J.K.,** Srivastava, D.K., Zmudzka, B.Z., and Wilson, S.H. Strategic down-regulation of DNA polymerase β by antisense RNA sensitizes mammalian cells to specific DNA damaging agents. **Nucleic Acids Res.**, 23:3810-3815, 1995.
- 157. Chen, K-H.,** Wood, T.G., He, F., Narayan, S., and Wilson, S.H. The bovine DNA polymerase β promoter: Cloning, characterization and comparison with the human core promoter. **Gene**, 164:323-327, 1995.
- 158. Kunkel, T.A.** and Wilson, S.H. Push and pull of base flipping. **Nature**, 384:25-26, 1996
- 159. Sobol, R.W.,** Horton, J.K., Kühn, R., Gu, H., Singhal, R.K., Prasad, R., Rajewsky, K., and Wilson, S.H. Requirement of mammalian DNA polymerase- β in base-excision repair. **Nature**, 379:183-186, 1996.
- 160. He, F.,** Narayan, S., and Wilson, S.H. Purification and characterization of a DNA polymerase β promoter initiator element-binding transcription factor from bovine testis. **Biochemistry**, 35:1775-1782, 1996.
- 161. Srivastava, D.K.,** Evans, R.K., Kumar, A., Beard, W.A., and Wilson, S.H. dNTP binding site in rat DNA polymerase β revealed by controlled proteolysis and azido photoprobe cross-linking. **Biochemistry**, 35:3728-3734, 1996.
- 162. Beard, W.A.,** Osheroff, W.P., Prasad, R., Jaju, M., Sawaya, M.R., Wood, T.G., Kraut, J., Kunkel, T.A., and Wilson, S.H. Enzyme-DNA interactions required for efficient nucleotide incorporation and discrimination in human DNA polymerase β . **J. Biol. Chem.**, 271:12141-12144, 1996.
- 163. Beard, W.A.,** Minnick, D., Wade, C., Prasad, R., Won, R.L., Kumar, A., Kunkel, T.A., and Wilson, S.H. Role of the "Helix Clamp" in HIV-1 reverse transcriptase catalytic cycling as revealed by alanine-scanning mutagenesis. **J. Biol. Chem.**, 271:12213-12220, 1996.
- 164. Liu, D.,** Prasad, R., Wilson, S.H., DeRose, E.F., and Mullen, G.P. Three-dimensional solution structure of the N-terminal domain of DNA polymerase β and mapping of the ssDNA interaction interface. **Biochemistry**, 35:6188-6200, 1996.
- 165. Chyan, Y.-J.,** Strauss, P.R., Wood, T.G., and Wilson, S.H. Identification of novel mRNA isoforms for human DNA polymerase β . **DNA and Cell Biology**, 15:653-659, 1996.
- 166. Oda, N.,** Saxena, J.K., Jenkins, T.M., Prasad, R., Wilson, S.H., and Ackerman, E.J. DNA polymerases α and β are required for DNA repair in an efficient nuclear extract from *Xenopus* oocytes. **J. Biol. Chem.**, 271:13816-13820, 1996.
- 167. Prasad, R.,** Singhal, R.K., Srivastava, D.K., Tomkinson, A.E., and Wilson, S.H. Specific interaction of DNA polymerase β and DNA ligase I in a multiprotein base excision repair complex from bovine testis. **J. Biol. Chem.**, 271:16000-16007, 1996.
- 168. Piersen, C.E.,** Prasad, R., Wilson, S.H., and Lloyd, R.S. Evidence for an imino intermediate in the DNA polymerase β deoxyribose phosphate excision reaction. **J. Biol. Chem.**, 271:17811-17815, 1996.
- 169. Narayan, S.,** He, F., and Wilson, S.H. Activation of the human DNA polymerase β promoter by a DNA-alkylating agent through induced phosphorylation of CREB-1. **J. Biol. Chem.**, 271:18508-18513, 1996.
- 170. Lavrik, O.I.,** Prasad, R., Beard, W.A., Safronov, I.V., Dobrikov, M.I., Srivastava, D.K., Shishkin, G.V., Wood, T.G., and Wilson, S.H. dNTP binding to HIV-1 reverse transcriptase and mammalian DNA polymerase β as revealed by affinity labeling with a photoreactive dNTP analog. **J. Biol. Chem.**, 271:21891-21897, 1996.

- 171. Pelletier, H.**, Sawaya, M.R., Wolfle, W., Wilson, S.H., and Kraut, J. Crystal structures of human DNA polymerase β complexed with DNA: Implications for catalytic mechanism, processivity, and fidelity. **Biochemistry**, 35:12742-12761, 1996.
- 172. Pelletier, H.**, Sawaya, M.R., Wolfle, W., Wilson, S.H., and Kraut, J. A structural basis for metal ion mutagenicity and nucleotide selectivity in human DNA polymerase β . **Biochemistry**, 35:12762-12777, 1996.
- 173. Reha-Krantz, L.J.**, Nonay, R.L., Day III, R.S., and Wilson, S.H. Replication of O^6 -Methylguanine-containing DNA by repair and replicative DNA polymerases. **J. Biol. Chem.**, 271:20088-20095, 1996.
- 174. Mullen, G.P.** and Wilson, S.H. Repair activity in DNA polymerases: A structurally conserved helix-hairpin-helix motif in base excision repair enzymes and in DNA polymerase β . **IN: Hickson, I.D. (ed), Base Excision Repair of DNA Damage.** Landes Bioscience, 1997, pp. 121-135.
- 175. Strauss, P.R.**, Beard, W.A., Patterson, T.A., and Wilson, S.H. Substrate binding by human apurinic/apyrimidinic endonuclease indicates a Briggs-Haldane Mechanism. **J. Biol. Chem.**, 272:1302-1307, 1997.
- 176. Efrati, E.**, Tocco, G., Eritja, R., Wilson, S.H., and Goodman, M.F. Abasic translesion synthesis by DNA polymerase β violates the "A-Rule": Novel types of nucleotide incorporation by human DNA polymerase β at an abasic lesion in different sequence contexts. **J. Biol. Chem.**, 272:2559-2569, 1997.
- 177. Forgacs, E.**, Latham, G., Beard, W.A., Prasad, R., Bebenek, K., Kunkel, T.A., Wilson, S.H., and Lloyd, R.S. Probing structure/function relationships of HIV-1 reverse transcriptase with styrene oxide N^2 -Guanine adducts. **J. Biol. Chem.**, 272:8525-8530, 1997.
- 178. Kim, S.**, Merrill, B.M., Rajpurohit, R., Kumar, A., Stone, K.L., Papov, V.V., Schneidersm J.M., Szer, W., Wilson, S.H., Paik, W.K., and Williams, K.R. Identification of N^G -Methylarginine residues in human heterogeneous RNP protein A1: Phe/Gly-Gly-Gly-Arg-Gly-Gly-Gly/Phe is a preferred recognition motif. **Biochemistry**, 36:5185-5192, 1997.
- 179. Mullen, G.P.** and Wilson, S.H. DNA polymerase β in abasic site repair: A structurally conserved helix-hairpin-helix motif in lesion detection by base excision repair enzymes. **Biochemistry**, 36:4713-4717, 1997.
- 180. Bebenek, K.**, Beard, W.A., Darden, T.A., Li, L., Prasad, R., Luxon, B.A., Gorenstein, D.G., Wilson, S.H., and Kunkel, T.A. A minor groove binding track in reverse transcriptase. **Nat. Struct. Biol.**, 4:194-197, 1997.
- 181. Butler, A.P.**, Johnson, D.G., Kumar, A.P., Narayan, S., Wilson, S.H., and MacLeod, M.C. Disruption of transcription *in vitro* and gene expression *in vivo* by DNA adducts derived from a benzo[a]pyrene diol epoxide located in heterologous sequences. **Carcinogenesis**, 18:239-244, 1997.
- 182. Mullen, G.P.**, Antuch, W., Maciejewski, M.W., Prasad, R., and Wilson, S.H. Insights into the mechanism of the β -elimination catalyzed by the N-terminal domain of DNA polymerase β . **Tetrahedron**, 53:12057-12066, 1997.
- 183. Sawaya, M.R.**, Prasad, R., Wilson, S.H., Kraut, J., and Pelletier, H. Crystal structures of human DNA polymerase β complexed with gapped and nicked DNA: Evidence for an induced fit mechanism. **Biochemistry**, 36:11205-11215, 1997.
- 184. Yang, X-P.**, He, F., Rawson, T.Y., and Wilson, S.H. Human DNA polymerase β promoter: Phorbol ester activation is mediated through the cAMP response element and cAMP-response-element-binding protein. **J. Biomed. Sci.**, 4:279-288, 1997.

- 185. Biade, S., Sobol, R.W., Wilson, S.H., and Matsumoto, Y.** Impairment of proliferating cell nuclear antigen-dependent apurinic/apyrimidinic site repair on linear DNA. **J. Biol. Chem.**, 273:898-902, 1998.
- 186. Fortini, P., Pascucci, B., Parlanti, E., Sobol, R.W., Wilson, S.H., and Dogliotti, E.** Different DNA polymerases are involved in the short- and long-patch base excision repair in mammalian cells. **Biochemistry**, 37:3575-3580, 1998.
- 187. Wilson, S.H., Singhal, R.K., and Zmudzka, B.Z.** Studies of DNA polymerases in replication-based repeat expansion. **IN: Warren, S.T., and Wells, R.D. (eds.), Genetic Instabilities and Hereditary Neurological Diseases.** Academic Press, 1998, pp. 693-698.
- 188. Singh, S.B., Beard, W.A., Hingerty, B.E., Wilson, S.H., and Broyde, S.** Interactions between DNA polymerase β and the major covalent adduct of the carcinogen (+)-*anti*-benzo[a]pyrene diol epoxide with DNA at a primer-template junction. **Biochemistry**, 37:878-884, 1998.
- 189. Chen, K.-H., Yakes, F.M., Srivastava, D.K., Singhal, R.K., Sobol, R.W., Horton, J.K., Van Houten, B., and Wilson, S.H.** Up-regulation of base excision repair correlates with enhanced protection against a DNA damaging agent in mouse cell lines. **Nucleic Acids Res.**, 26:2001-2007, 1998.
- 190. Lavrik, O.I., Nasheuer, H.-P., Weisshart, K., Wold, M.S., Prasad, R., Beard, W.A., Wilson, S.H., and Favre, A.** Subunits of human replication protein A are crosslinked by photoreactive primers synthesized by DNA polymerases. **Nucleic Acids Res.** 26:602-607, 1998.
- 191. Kunkel, T.A. and Wilson, S.H.** DNA polymerases on the move. **Nat. Struct. Biol.**, 5:95-99, 1998.
- 192. Beard, W.A. and Wilson, S.H.** Structural insights into DNA polymerase β fidelity: Hold tight if you want it right. **Chem. Biol.**, 5:R7-R13, 1998.
- 193. Prasad, R., Chyan, Y.J., Beard, W.A., Maciejewski, M.W., Mullen, G.P., and Wilson, S.H.** Functional analysis of the amino-terminal 8-kDa domain of DNA polymerase β as revealed by site-directed mutagenesis: DNA binding and 5'-deoxyribose phosphate lyase activities. **J. Biol. Chem.**, 273:11121-11126, 1998.
- 194. Wilson, S.H. and Singhal, R.K.** Mammalian DNA repair and the cellular polymerases. **IN: Hoekstra, M.F., and Nickoloff, J.A. (eds.), DNA Damage and Repair, Vol 2.: DNA Repair in Higher Eukaryotes.** Humana Press, 1998, pp. 161-180.
- 195. Prasad, R., Beard, W.A., Strauss, P., and Wilson, S.H.** Human DNA polymerase β deoxyribose phosphate lyase: Substrate specificity and catalytic mechanism. **J. Biol. Chem.**, 273:15263-15270, 1998.
- 196. Wilson, S.H.** Mammalian base excision repair and DNA polymerase β . **Mutat. Res. – DNA Repair**, 407:203-215, 1998.
- 197. Stucki, M., Pascucci, B., Parlanti, E., Fortini, P., Wilson, S.H., Hübscher, U., and Dogliotti, E.** Mammalian base excision repair by DNA polymerases δ and ϵ . **Oncogene**, 17:835-843, 1998.
- 198. Srivastava, D.K., Vande Berg, B.J., Prasad, R., Molina, J.T., Beard, W.A., Tomkinson, A.E., and Wilson, S.H.** Mammalian abasic site base excision repair: Identification of the reaction sequence and rate-determining steps. **J. Biol. Chem.**, 273:21203-21209, 1998.
- 199. Dimitriadis, E.K., Prasad, R., Vaske, M.K., Chen, L., Tomkinson, A.E., Lewis, M.S., and Wilson, S.H.** Thermodynamics of human DNA ligase I trimerization and association with DNA polymerase β . **J. Biol. Chem.**, 273:20540-20550, 1998.

- 200. Longley, M.J., Prasad, R., Srivastava, D.K., Wilson, S.H., and Copeland, W.C.** Identification of 5'-deoxyribose phosphate lyase activity in human DNA polymerase γ and its role in mitochondrial base excision repair *in vitro*. **Proc. Natl. Acad. Sci., USA**, 95:12244-12248, 1998.
- 201. Beard, W.A., Bebenek, K., Darden, T.A., Li, L., Prasad, R., Kunkel, T.A., and Wilson, S.H.** Vertical-scanning mutagenesis of a critical tryptophan in the minor groove binding track of HIV-1 reverse transcriptase: Molecular nature of polymerase-nucleic acid interactions. **J. Biol. Chem.**, 273:30435-30442, 1998.
- 202. Osheroff, W.P., Jung, H.K., Beard, W.A., Wilson, S.H., and Kunkel, T.A.** The fidelity of DNA polymerase β during distributive and processive DNA synthesis. **J. Biol. Chem.**, 274:3642-3650, 1999.
- 203. Srivastava, D.K., Husain, I., Arteaga, C.L., and Wilson, S.H.** DNA polymerase β expression differences in selected human tumors and cell lines. **Carcinogenesis**, 20:1049-1054, 1999.
- 204. Ochs, K., Sobol, R.W., Wilson, S.H., and Kaina, B.** Cells deficient in DNA polymerase β are hypersensitive to alkylating agent-induced apoptosis and chromosomal breakage. **Cancer Res.**, 59:1544-1551, 1999.
- 205. Dianov, G.L., Prasad, R., Wilson, S.H., and Bohr, V.A.** Role of DNA polymerase β in the excision step of long patch mammalian base excision repair. **J. Biol. Chem.**, 274:13741-13743, 1999.
- 206. Efrati, E., Tocco, G., Eritja, R., Wilson, S.H., and Goodman, M.F.** "Action-at-a-distance" mutagenesis: 8-oxo-7,8-dihydro-2'-deoxyguanosine causes base substitution errors at neighboring template sites when copied by DNA polymerase β . **J. Biol. Chem.**, 274:15920-15926, 1999.
- 207. Powell, M.D., Beard, W.A., Bebenek, K., Howard, K.J., Le Grice, S.F.J., Darden, T.A., Kunkel, T.A., Wilson, S.H., and Levin, J.G.** Residues in the α H and α I helices of the HIV-1 reverse transcriptase thumb subdomain required for the specificity of RNase H-catalyzed removal of the polypurine tract primer. **J. Biol. Chem.**, 274:19885-19893, 1999.
- 208. Osheroff, W.P., Beard, W.A., Wilson, S.H., and Kunkel, T.A.** Base substitution specificity of DNA polymerase β depends on interactions in the DNA minor groove. **J. Biol. Chem.**, 274:20749-20752, 1999.
- 209. Idriss, H., Kawa, S., Damuni, Z., Thompson, E.B., and Wilson, S.H.** HIV-1 reverse transcriptase is phosphorylated *in vitro* and in a cellular system. **Int. J. Biochem. Cell Biol.**, 31,1443-1452, 1999.
- 210. Lewis, D.A., Bebenek, K., Beard, W.A., Wilson, S.H., and Kunkel, T.A.** Uniquely altered DNA replication fidelity conferred by an amino acid change in the nucleotide binding pocket of human immunodeficiency virus type 1 reverse transcriptase. **J. Biol. Chem.**, 274:32924-32930, 1999.
- 211. Robertson, A. and Wilson, S.H.** Complementary DNA. **IN: Creighton, T.E. (ed.), Encyclopedia of Molecular Biology.** John Wiley & Sons, 1999, Vol. 1, pp. 532-540.
- 212. Horton, J.K., Prasad, R., Hou, E., and Wilson, S.H.** Protection against methylation-induced cytotoxicity by DNA polymerase β -dependent long patch base excision repair. **J. Biol. Chem.**, 275:2211-2218, 2000.
- 213. Prasad, R., Dianov, G.L., Bohr, V.A., and Wilson, S.H.** FEN1 Stimulation of DNA polymerase β mediates an excision step in mammalian long patch base excision repair. **J. Biol. Chem.**, 275:4460-4466, 2000.

214. **Narayan, S.** and Wilson, S.H. Kinetic analysis of Sp1-mediated transcriptional activation of a TATA-containing promoter. **Biochemistry**, 39:818-823, 2000.
215. **Miller, H.**, Prasad, R., Wilson, S.H., Johnson, F., and Grollman, A.P. 8-OxodGTP incorporation by DNA polymerase β is modified by active-site residues Asn279. **Biochemistry**, 39:1029-1033, 2000.
216. **Maciejewski, M.W.**, Liu, D., Prasad, R., Wilson, S.H., and Mullen, G.P. Backbone dynamics and refined solution structure of the N-terminal domain of DNA polymerase β . Correlation with DNA binding and dRP lyase activity. **J. Mol. Biol.**, 296:229-253, 2000.
217. **Wilson, S.H.** and Kunkel, T.A. Passing the Baton in Base Excision Repair. **Nat. Struct. Biol.**, 7:176-178, 2000.
218. **Patterson, T.A.**, Little, W., Cheng, X., Widen, S.G., Kumar, A., Beard, W.A., and Wilson, S.H. Molecular cloning and high-level expression of human polymerase β cDNA and comparison of the purified recombinant human and rat enzymes. **Protein Expr. Purif.**, 18:100-110, 2000.
219. **Deterding, L.J.**, Prasad, R., Mullen, G.P., Wilson, S.H., and Tomer, K.P. Mapping of the 5'-2-deoxyribose-5-phosphate lyase active site in DNA polymerase β by mass spectrometry. **J. Biol. Chem.**, 275:10463-10471, 2000.
220. **Chen, K.-H.**, Srivastava, D.K., Singhal, R.K., Jacob, S., Ahmed, A.E., and Wilson, S.H. Modulation of DNA base excision repair by oxidized low density lipoprotein and antioxidants in mouse monocytes. **Carcinogenesis**, 21:1017-1022, 2000.
221. **Marintchev, A.**, Robertson, A., Dimitriadis, E.K., Prasad, R., Wilson, S.H., and Mullen, G.P. Domain Specific interaction in the XRCC1-DNA polymerase β complex. **Nucleic Acids Res.**, 28:2049-2059, 2000.
222. **Sobol, R.W.**, Prasad, R., Evenski, A., Baker, A., Yang, X.-P., Horton, J.K., and Wilson, S.H. The lyase activity of DNA repair protein β -polymerase protects from DNA-damage-induced cytotoxicity. **Nature**, 405:807-810, 2000.
223. **Latham, G.J.**, Forgacs, E., Beard, W.A., Prasad, R., Bebenek, K., Kunkel, T.A., Wilson, S.H., and Lloyd, R.S. Vertical-scanning mutagenesis of a critical tryptophan in the "minor groove binding track" of HIV-1 reverse transcriptase. **J. Biol. Chem.**, 275:15025-15033, 2000.
224. **Beard, W.A.** and Wilson, S.H. Structural design of a eukaryotic DNA repair polymerase: DNA polymerase β . **Mutat. Res. – DNA Repair (special issue, Structure of DNA Repair Enzymes)**, 460:231-244, 2000.
225. **Osheroff, W.P.**, Beard, W.A., Yin, S., Wilson, S.H., and Kunkel, T.A. Minor groove interactions at the DNA polymerase β active site modulate single-base deletion error rates. **J. Biol. Chem.**, 275:28033-28038, 2000.
226. **Narayan, S.** and Wilson, S.H. Kinetic analysis of Sp1-mediated transcriptional activation of the human DNA polymerase β promoter. **Oncogene**, 19:4729-4735, 2000.
227. **Li, L.**, Pedersen, L.G., Beard, W.A., Bebenek, K., Wilson, S.H., Kunkel, T.A., and Darden, T.A. A molecular dynamics model of HIV-1 reverse transcriptase complexed with DNA: Comparison with experimental structures. **J. Mol. Model.**, 6:575-586, 2000.
228. **Wilson, S.H.**, Sobol, R.W., Beard, W.A., Horton, J.K., Prasad, R., and Vande Berg, B.J. DNA polymerase- β and mammalian base excision repair. **IN: Cold Spring Harbor Symposia on Quantitative Biology**, Cold Spring Harbor Laboratory Press, 2000, Vol. 65, pp. 143-155.
229. **Podlutzky, A.J.**, Dianova, I.I., Wilson, S.H., Bohr, V.A., and Dianov, G.L. DNA synthesis and dRPase activities of polymerase β are both essential for single-nucleotide patch base excision repair in mammalian cell extracts. **Biochemistry**, 40:809-813, 2001.

- 230. Vande Berg, B.J.**, Beard, W.A., and Wilson, S.H. DNA structure and aspartate 276 influence nucleotide binding to human DNA polymerase β . **J. Biol. Chem.**, 276:3408-3416, 2001.
- 231. Zhou, J.**, Ahn, J., Wilson, S.H., and Prives, C. A role for p53 in base excision repair. **EMBO J.**, 20:914-923, 2001.
- 232. Srivastava, D.K.**, Tendler, C.L., Milani, D., English, M.A., Licht, J.D., and Wilson, S.H. The HIV-1 transactivator protein Tat is a potent inducer of the human DNA repair enzyme polymerase- β . **AIDS**, 15:433-440, 2001.
- 233. Bebenek, K.**, Tissier, A., Frank, E.G., McDonald, J.P., Prasad, R., Wilson, S.H., Woodgate, R., and Kunkel, T.A. 5'-Deoxyribose phosphate lyase activity of human DNA polymerase ϵ *in vitro*. **Science**, 291:2156-2159, 2001.
- 234. Belova, G.I.**, Prasad, R., Kozyavkin, S.A., Lake, J.A., Wilson, S.H., and Slesarev, A.I. A type IB topoisomerase with DNA repair activities. **Proc. Natl. Acad. Sci. USA**, 98:6015-6020, 2001.
- 235. Lavrik, O.I.**, Prasad, R., Sobol, R.W., Horton, J.K., Ackerman, E.J., and Wilson, S.H. Photoaffinity labeling of mouse fibroblast enzymes by a base excision repair intermediate: Evidence for the role of poly(ADP-ribose) polymerase-1 in DNA repair. **J. Biol. Chem.**, 276:25541-25548, 2001.
- 236. Prasad, R.**, Lavrik, O.I., Kim, S.-J., Kedar, P., Yang, X.-P., Vande Berg, B.J., and Wilson, S.H. DNA polymerase β -mediated long patch base excision repair: Poly(ADP-ribose) polymerase-1 stimulates strand displacement DNA synthesis. **J. Biol. Chem.**, 276:32411-32414, 2001.
- 237. Sobol, R.W.** and Wilson, S.H. Mammalian DNA β -polymerase in base excision repair of alkylation damage. **IN: Moldave, K., Mitra, S., McCullough, A., Lloyd, R.S., and Wilson, S.H. (eds.), Progress in Nucleic Acids Research and Molecular Biology: Base Excision Repair.** Academic Press, 2001, Vol. 68, pp. 57-74.
- 238. Beard, W.** and Wilson, S.H. DNA lesion bypass polymerases open up. **Structure (Camb.)**, 9:759-764, 2001.
- 239. Beard, W.A.** and Wilson, S.H. DNA polymerases lose their grip. **Nat. Struct. Biol.**, 8:915-917, 2001.
- 240. Chen, K.-H.**, Srivastava, D.K., and Wilson, S.H. Relationship between base excision repair capacity and DNA alkylating agent sensitivity in mouse monocytes. **Mutat. Res. – DNA Repair**, 487:121-126, 2001.
- 241. Sander, M.** and Wilson SH. Base Excision Repair, AP Endonucleases and DNA Glycosylases, version 1.0. **IN: Encyclopedia of Life Sciences.** Nature Publishing Group, London, 2002.
- 242. Belova, G.I.**, Prasad, R., Nazimov, I.V., Wilson, S.H., and Slesarev, A.I. The domain organization and properties of individual domains of DNA topoisomerase V, a type 1B topoisomerase with DNA repair activities. **J. Biol. Chem.**, 277:4959-4965, 2002.
- 243. Idriss, H.T.**, Al-Assar, O., and Wilson, S.H. Molecules in Focus: DNA polymerase β . **Int. J. Biochem. Cell Biol.**, 34:321-324, 2002.
- 244. Beard, W.A.**, Shock, D.D., Yang, X.-P., DeLauder, S.F., and Wilson, S.H. Loss of DNA polymerase β stacking interactions with templating purines, but not pyrimidines, alters catalytic efficiency and fidelity. **J. Biol. Chem.**, 277:8235-8242, 2002.

- 245. Horton, J.K.,** Baker, A., Vande Berg, B.J., Sobol, R.W., and Wilson, S.H. Involvement of DNA polymerase β in protection against the cytotoxicity of oxidative DNA damage. **DNA Repair (Amst.)**, 1:317-333, 2002.
- 246. Yang, L.,** Beard, W.A., Wilson, S.H., Broyde, S., and Schlick, T. Polymerase β simulations suggest that Arg258 rotation is a slow step rather than large subdomain motions *per se*. **J. Mol. Biol.**, 317:651-671, 2002.
- 247. Sobol, R.W.,** Watson, D.E., Nakamura, J., Yakes, F.M., Hou, E., Horton, J.K., Ladapo, J., Van Houten, B., Swenberg, J.A., Tindall, K.R., Samson, L.D., and Wilson, S.H. Mutations associated with base excision repair deficiency and methylation-induced genotoxic stress. **Proc. Natl. Acad. Sci. USA**, 99:6860-6865, 2002.
- 248. Gryk, M.R.,** Maciejewski, M.W., Robertson, A., Mullen, M.A., Wilson, S.H., and Mullen, G.P. Letter to the Editor: ^1H , ^{13}C and ^{15}N resonance assignments for the predeuterated 22 kD palm-thumb domain of DNA polymerase β . **J. Biomol. NMR**, 22:197-198, 2002.
- 249. Lavrik, O.I.,** Kolpashchikov, D.M., Prasad, R., Sobol, R.W., and Wilson, S.H. Binary system for selective photoaffinity labeling of base excision repair DNA polymerases. **Nucleic Acids Res.**, 30:e73, 2002.
- 250. Yang, L.,** Beard, W.A., Wilson, S.H., Roux, B., Broyde, S., and Schlick, T. Local deformations revealed by dynamics simulations of DNA polymerase β with DNA mismatches at the primer terminus. **J. Mol. Biol.**, 321:459-478, 2002.
- 251. Kedar, P.S.,** Kim, S.-J., Robertson, A., Hou, E., Prasad, R., Horton, J.K., and Wilson, S.H. Direct interaction between mammalian DNA polymerase β and proliferating cell nuclear antigen. **J. Biol. Chem.**, 277:31115-31123, 2002.
- 252. Beard, W.A.,** Shock, D.D., Vande Berg, B.J., and Wilson, S.H. Efficiency of correct nucleotide insertion governs DNA polymerase fidelity. **J. Biol. Chem.**, 277:47393-47398, 2002.
- 253. Gryk, M.R.,** Marintchev, A., Maciejewski, M.W., Roberston, A., Wilson, S.H., and Mullen, G.P. Mapping of the interaction interface of DNA polymerase β with XRCC1. **Structure (Camb.)**, 10:1709-1720, 2002.
- 254. Friedberg, E.C.,** Hanaoka, F., Tanaka, K., Wilson, S.H., and Yasui, A. Meeting Report: Report on the first US-Japan Repair Meeting, Sendai, Japan, October 27-31, 2002. **DNA Repair (Amst.)** 2:639-652, 2003.
- 255. Horton, J.K.,** Joyce-Gray, D.F., Pachkowski, B.F., Swenberg, J.A., and Wilson, S.H. Hypersensitivity of DNA polymerase β null mouse fibroblasts reflects accumulation of cytotoxic repair intermediates from site-specific alkyl DNA lesions. **DNA Repair (Amst.)**, 2:27-48, 2003.
- 256. Krahn, J.M.,** Beard, W.A., Miller, H., Grollman, A.P., and Wilson, S.H. Structure of DNA polymerase β with the mutagenic DNA lesion 8-oxodeoxyguanine reveals structural insights into its coding potential. **Structure (Camb.)**, 11:121-127, 2003.
- 257. He, F.,** Yang, X.-P., Srivastava, D.K., and Wilson, S.H. DNA polymerase β gene expression: The promoter activator CREB-1 is upregulated in Chinese hamster ovary cells by DNA alkylating agent-induced stress. **Biol. Chem.**, 384:19-23, 2003.
- 258. Kim, S.-J.,** Beard, W.A., Harvey, J., Shock, D.D., Knutson, J.R., and Wilson, S.H. Rapid segmental and subdomain motions of DNA polymerase β . **J. Biol. Chem.**, 278:5072-5081, 2003.
- 259. Sobol, R.W.,** Foley, J.F., Nyska, A., Davidson, M.G., and Wilson, S.H. Regulated over-expression of DNA polymerase β mediates early onset cataract in mice. **DNA Repair (Amst.)**, 2:609-622, 2003.

- 260. Beard, W.A.** and Wilson, S.H. Structural insights into the origins of DNA polymerase fidelity. **Structure (Camb.)**, 11:489-496, 2003.
- 261. Harrigan, J.A.**, Opresko, P.L., von Kobbe, C., Kedar, P.S., Prasad, R., Wilson, S.H., and Bohr, V.A. The Werner syndrome protein stimulates DNA polymerase β strand displacement synthesis via its helicase activity. **J. Biol. Chem.**, 278:22686-22695, 2003.
- 262. Chyan, Y.-J.**, Rawson, T.Y., and Wilson, S.H. Cloning and characterization of a novel member of the human ATF/CREB family: ATF2 deletion, a potential regulator of the human DNA polymerase β promoter. **Gene**, 312:117-124, 2003.
- 263. Beard, B.C.**, Wilson, S.H., and Smerdon, M.J. Suppressed catalytic activity of base excision repair enzymes on rotationally positioned uracil in nucleosomes. **Proc. Natl. Acad. Sci., USA**, 100:7465-7470, 2003.
- 264. Matsuda, T.**, Vande Berg, B.J., Bebenek, K., Osheroff, W.P., Wilson, S.H., and Kunkel, T.A. The base substitution fidelity of DNA polymerase β -dependent single nucleotide base excision repair. **J. Biol. Chem.**, 278:25947-25951, 2003.
- 265. Prasad, R.**, Bebenek, K., Hou, E., Shock, D., Beard, W., Woodgate, R., Kunkel, T.A., and Wilson, S.H. Localization of the deoxyribose phosphate lyase active site in human DNA polymerase ϵ by controlled proteolysis. **J. Biol. Chem.**, 278:29649-29654, 2003.
- 266. Sobol, R.W.**, Kartalou, M., Almeida, K.H., Joyce, D.F., Engelward, B.P., Horton, J.K., Prasad, R., Samson, L.D., and Wilson, S.H. Base excision repair intermediates induce p53-independent cytotoxic and genotoxic responses. **J. Biol. Chem.**, 278:39951-39959, 2003.
- 267. Cabelof, D.C.**, Guo, Z.-M., Raffoul, J.J., Sobol, R.W., Wilson, S.H., Richardon, A., and Heydari, A.R. Base excision repair deficiency caused by polymerase β haploinsufficiency: Accelerated DNA damage and increased mutational response to carcinogens. **Cancer Res.**, 63:5799-5807, 2003.
- 268. Hou, E.W.**, Prasad, R., Beard, W.A., and Wilson, S.H. High-level expression and purification of untagged and histidine-tagged HIV reverse transcriptase. **Protein Expr. Purif.**, 34:75-86, 2004.
- 269. Poltoratsky, V.P.**, Wilson, S.H., Kunkel, T.A., and Pavlov, Y.I. Recombinogenic phenotype of human activation-induced cytosine deaminase. **J. Immunol.**, 172:4308-4313, 2004.
- 270. Bohr, V.A.**, Souza-Pinto, N., and Wilson, S.H. First US-EU DNA Repair Meeting: Endogenous Stress, National Conference Center, VA, USA, 14-18 October 2003. **DNA Repair (Amst.)**, 3:543-559, 2004.
- 271. Cistulli, C.**, Lavrik, O.I., Prasad, R., Hou, E., and Wilson, S.H. AP endonuclease and poly(ADP-ribose) polymerase-1 interact with the same base excision repair intermediate. **DNA Repair (Amst.)**, 3:581-591, 2004.
- 272. Endres, M.**, Biniszkiwicz, D., Sobol, R.W., Harms, C., Ahmadi, M., Lipski, A., Katchanov, J., Mergenthaler, P., Dirnagl, U., Wilson, S.H., Meisel, A., and Jaenisch, R. Increased postischemic brain injury in mice deficient in uracil-DNA glycosylase. **J. Clin. Invest.**, 113:1711-1721, 2004.
- 273. Yang, L.**, Beard, W.A., Wilson, S.H., Broyde, S., and Schlick, T. Highly organized but pliant active site of DNA polymerase β : Compensatory mechanisms in mutant enzymes revealed by dynamics simulations and energy analyses. **Biophys. J.**, 86:3392-3408, 2004.
- 274. Bose-Basu, B.**, DeRose, E.F., Kirby, T.W., Mueller, G.A., Beard, W.A., Wilson, S.H., and London, R.E. Dynamic characterization of a DNA repair enzyme: NMR studies of [methyl- ^{13}C]methionine-labeled DNA polymerase β . **Biochemistry**, 43:8911-8922, 2004.

275. **Yang, L.**, Arora, K., Beard, W.A., Wilson, S.H., and Schlick, T. Critical role of magnesium ions in DNA polymerase β 's closing and active site assembly. **J. Am. Chem. Soc.**, 126:8441-8453, 2004.
276. **Beard, W.A.**, Shock, D.D., and Wilson, S.H. Influence of DNA structure on DNA polymerase β active site function: Extension of mutagenic DNA intermediates. **J. Biol. Chem.**, 279:31921-31929, 2004.
277. **Wiederhold, L.**, Leppard, J.B., Kedar, P., Karimi-Busheri, F., Rasouli-Nia, A., Weinfeld, M., Tomkinson, A.E., Izumi, T., Prasad, R., Wilson, S.H., Mitra, S., and Hazra, T.K. AP endonuclease-independent DNA base excision repair in human cells. **Mol. Cell**, 15:209-220, 2004.
278. **Hu, H.-Y.**, Horton, J.K., Gryk, M.R., Prasad, R., Naron, J.M., Sun, D.-A., Hecht, S.M., Wilson, S.H., and Mullen, G.P. Identification of small molecule synthetic inhibitors of DNA polymerase β by NMR chemical shift mapping. **J. Biol. Chem.**, 279:39736-39744, 2004.
279. **Lan, L.**, Nakajima, S., Oohata, Y., Takao, M., Okano, S., Masutani, M., Wilson, S.H., and Yasui, A. *In situ* analysis of repair processes for oxidative DNA damage in mammalian cells. **Proc. Natl. Acad. Sci. USA**, 101:13738-13743, 2004.
280. **Krahn, J.M.**, Beard, W.A., and Wilson, S.H. Structural insights into DNA polymerase β deterrents for misincorporation support an induced-fit mechanism for fidelity. **Structure (Camb.)**, 12:1823-1832, 2004.
281. **Friedberg, E.C.**, Hanaoka, F., Tanaka, K., Yasui, A., and Wilson, S.H. Meeting Report: The 2nd US-Japan DNA Repair Meeting, Honolulu, Hawaii, June 4-8, 2004, **DNA Repair (Amst.)**, 3:1661-1674, 2004.
282. **Beard, W.A.** and Wilson, S.H. DNA Polymerase β , eukaryotic. **IN:** Lennarz, W.J. and Lane, M.D. (eds.), **Encyclopedia of Biological Chemistry**, Elsevier Academic Press, 2004, pp. 708-712.
283. **Beard, B.C.**, Stevenson, J.J., Wilson, S.H., and Smerdon, M.J. Base excision repair in nucleosomes lacking histone tails, **DNA Repair (Amst.)**, 4:203-209, 2005.
284. **Liu, Y.**, Beard, W.A., Shock, D.D., Prasad, R., Hou, E.W., and Wilson, S.H. DNA polymerase β and flap endonuclease 1 enzymatic specificities sustain DNA synthesis for long patch base excision repair. **J. Biol. Chem.**, 280:3665-3674, 2005.
285. **Sukhanova, M.V.**, Khodyreva, S.N., Lebedeva, N.A., Prasad, R., Wilson, S.H., and Lavrik, O.I. Human base excision repair enzymes apurinic/apyrimidinic endonuclease1 (APE1), DNA polymerase β and poly(ADP-ribose) polymerase 1: Interplay between strand-displacement DNA synthesis and proofreading exonuclease activity. **Nucleic Acids Res.**, 33:1222-1229, 2005.
286. **Horton, J.K.**, Stefanick, D.F., Naron, J.M., Kedar, P.S., and Wilson, S.H. Poly(ADP-ribose) polymerase activity prevents signaling pathways for cell cycle arrest following DNA methylating agent exposure. **J. Biol. Chem.**, 280:15773-15785, 2005.
287. **Braithwaite, E.K.**, Prasad, R., Shock, D.D., Hou, E.W., Beard, W.A., and Wilson, S.H. DNA polymerase λ mediates a back-up base excision repair activity in extracts of mouse embryonic fibroblasts. **J. Biol. Chem.**, 280:18469-18475, 2005.
288. **Batra, V.K.**, Beard, W.A., Shock, D.D., Pedersen, L.C., and Wilson, S.H. Nucleotide-induced DNA polymerase active site motions accommodating a mutagenic DNA intermediate. **Structure (Camb.)**, 13:1225-1233, 2005.

- 289. Braithwaite, E.K.**, Kedar, P.S., Lan, L., Polosina, Y.Y., Asagoshi, K., Poltoratsky, V.P., Horton, J.K., Miller, H., Teebor, G.W., Yasui, A., and Wilson, S.H. DNA polymerase λ protects mouse fibroblasts against oxidative DNA damage and is recruited to sites of DNA damage/repair. **J. Biol. Chem.**, 280:31641-31647, 2005.
- 290. Poltoratsky, V.**, Horton, J.K., Prasad, R., and Wilson, S.H. Brief report: REV1 mediated mutagenesis in base excision repair deficient mouse fibroblast. **DNA Repair (Amst.)**, 4:1182-1188, 2005.
- 291. Horton, J.K.**, Stefanick, D.F., and Wilson, S.H. Involvement of poly(ADP-ribose) polymerase activity in regulating Chk1-dependent apoptotic cell death. **DNA Repair (Amst.)**, 4:1111-1120, 2005.
- 292. Arora, K.**, Beard, W.A., Wilson, S.H., and Schlick, T. Mismatch-induced conformational distortions in polymerase β support an induced-fit mechanism for fidelity. **Biochemistry**, 44:13328-13341, 2005.
- 293. Prasad, R.**, Batra, V.K., Yang, X.-P., Krahn, J.M., Pedersen, L.C., Beard, W.A., and Wilson, S.H. Structural insight into the DNA polymerase β deoxyribose phosphate lyase mechanism. **DNA Repair (Amst.)**, 4:1347-1357, 2005.
- 294. Kirby, T.W.**, DeRose, E.F., Beard, W.A., Wilson, S.H., and London, R.E. A thymine isostere in the templating position disrupts assembly of the closed DNA polymerase β ternary complex. **Biochemistry**, 44:15230-15237, 2005.
- 295. Beard, W.A.** and Wilson, S.H. *Syn*-full behavior by T7 DNA polymerase. **Structure (Camb.)**, 13:1580-1582, 2005.
- 296. Beard, W.A.** and Wilson, S.H. Structure and mechanism of DNA polymerase β . **Chemical Reviews**, "DNA Damage and Repair," 106:361-382, 2006.
- 297. Harrigan, J.A.**, Wilson, III, D.M., Prasad, R., Opresko, P.L., Beck, G., May, A., Wilson, S.H., and Bohr, V.A. The Werner syndrome protein operates in base excision repair and cooperates with DNA polymerase β . **Nucleic Acids Res.**, 34:745-754, 2006.
- 298. Batra, V.K.**, Beard, W.A., Shock, D.D., Krahn, J.M., Pedersen, L.C., and Wilson, S.H. Magnesium-induced assembly of a complete DNA polymerase catalytic complex. **Structure (Camb.)**, 14:757-766, 2006.
- 299. Beard, W.A.**, Prasad, R., and Wilson, S.H. Activities and mechanism of pol β . **IN:** Campbell, J.L. and Modrich, P. (eds.), **Methods in Enzymology, DNA Repair, Part A**. Academic Press, 2006, Vol. 408, pp. 91-107.
- 300. Liu, Y.**, Prasad, R., and Wilson, S.H. DNA repair models for understanding triplet repeat instability. **IN:** Wells, R.D. and Ashizawa, T. (eds.), **Genetic Instabilities and Neurological Diseases**, Elsevier-Academic Press, 2006, pp. 667-678.
- 301. Cabelof, D.C.**, Ikeno, Y., Nyska, A., Busuttil, R.A., Anyangwe, N., Vijg, J., Matherly, L.H., Tucker, J.D., Wilson, S.H., Richardson, A., and Heydari, A.R. Haploinsufficiency in DNA polymerase β increases cancer risk with age and alters mortality rate. **Cancer Res.**, 66:7460-7465, 2006.
- 302. Gao, G.**, Prasad, R., Lodwig, S.N., Unkefer, C.J., Beard, W.A., Wilson, S.H., London, R.E. Determination of lysine pK values using [5-¹³C]lysine: Application to the lyase domain of DNA Pol β . **J. Am. Chem. Soc.**, 128:8104-8105, 2006.
- 303. Yoshimura, M.**, Kohzaki, M., Nakamura, J., Asagoshi, K., Sonoda, E., Hou, E., Prasad, R., Wilson, S.H., Tano, K., Yasui, A., Lan, L., Seki, M., Wood, R.D., Arakawa, H., Buerstedde, J.-M., Hochegger, H., Okada, T., Hiraoka, M., and Takeda, S. Vertebrate PolQ and Pol β cooperate in base excision repair of oxidative DNA damage. **Mol. Cell**, 24:115-125, 2006.

- 304. Lin, P.,** Pedersen, L.C., Batra, V.K., Beard, W.A., Wilson, S.H., and Pedersen, L.G. Energy analysis of chemistry for correct nucleotide insertion by DNA polymerase β . **Proc. Natl. Acad. Sci. USA**, 103:13294-13299, 2006.
- 305. Batra, V.K.,** Shock, D.D., Prasad, R., Beard, W.A., Hou, E.W., Pedersen, L.C., Sayer, J.M., Yagi, H., Kumar, S., Jerina, D.M., and Wilson, S.H. Structure of DNA polymerase β with a benzo[*c*]phenanthrene diol epoxide-adducted template exhibits mutagenic features. **Proc. Natl. Acad. Sci. USA**, 103:17231-17236, 2006.
- 306. Das, A.,** Wiederhold, L., Leppard, J.B., Kedar, P.S., Prasad, R., Wang, H., Boldogh, I., Karimi-Busheri, F., Weinfeld, M., Tomkinson, A.E., Wilson, S.H., Mitra, S., and Hazra, T.K. NEIL2-initiated, APE-independent repair of oxidized bases in DNA: Evidence for a repair complex in human cell. **DNA Repair (Amst.)**, 5:1439-1448, 2006.
- 307. Radhakrishnan, R.,** Arora, K., Wang, Y., Beard, W.A., Wilson, S.H., and Schlick, T. Regulation of DNA repair fidelity by molecular checkpoints: "Gates" in DNA polymerase β 's substrate selection. **Biochemistry**, 45:15142-15156, 2006.
- 308. Poltoratsky, V.,** Prasad, R., Horton, J.K., and Wilson, S.H. Down-regulation of DNA polymerase β accompanies somatic hypermutation in human BL2 cell lines. **DNA Repair (Amst.)**, 6:244-253, 2007.
- 309. Sucato, C.A.,** Upton, T.G., Kashemirov, B.A., Batra, V.K., Martinek, V., Xiang, Y., Beard, W.A., Pedersen, L.C., Wilson, S.H., McKenna, C.E., Florian, J., Warshel, A., and Goodman, M.F. Modifying the β - γ leaving-group bridging oxygen alters nucleotide incorporation efficiency, fidelity and catalytic mechanism of DNA polymerase β . **Biochemistry**, 46:461-471, 2007.
- 310. Oelschlaeger, P.,** Klahn, M., Beard, W.A., Wilson, S.H., and Warshel, A. Magnesium-cationic dummy atom molecules enhance representation of DNA polymerase β in molecular dynamics simulations: Improved accuracy in studies of structural features and mutational effects. **J. Mol. Bio.**, 366:687-701, 2007.
- 311. Horton, J.K.** and Wilson, S.H. Hypersensitivity phenotypes associated with genetic and synthetic inhibitor-induced base excision repair deficiency. **DNA Repair (Amst.)**, 6:530-543, 2007.
- 312. Horton, J.K.,** Stefanick, D.F., Kedar, P.S., and Wilson, S.H. ATR signaling mediates an S-phase checkpoint after inhibition of poly(ADP-ribose) polymerase activity. **DNA Repair (Amst.)**, 6:742-750, 2007.
- 313. Wang, Y.,** Reddy, S., Beard, W.A., Wilson, S.H., and Schlick, T. Differing conformational pathways before and after chemistry for insertion of dATP vs. dCTP opposite 8-oxoG in DNA polymerase β . **Biophys. J.**, 92:3063-3070, 2007.
- 314. Wilson, S.H.** Book review: DNA damage recognition. **DNA Repair (Amst.)**, 6:396, 2007.
- 315. Tano, K.,** Nakamura, J., Asagoshi, K., Arakawa, H., Sonoda, E., Braithwaite, E.K., Prasad, R., Buerstedde, J.-M., Takeda, S., Watanabe, M., and Wilson, S.H. Interplay between DNA polymerases β and λ in repair of oxidation DNA damage in chicken DT40 cells. **DNA Repair (Amst.)**, 6:869-275, 2007.
- 316. Liu, Y.,** Prasad, R., Beard, W.A., Kedar, P.S., Hou, E.W., Shock, D.D., Wilson, S.H. Coordination of steps in single-nucleotide base excision repair mediated by apurinic/aprimidinic endonuclease 1 and DNA polymerase β . **J. Biol. Chem.**, 282:13532-13545, 2007.

- 317. Kovtun, I.V.**, Liu, Y., Bjoras, M., Klungland, A., Wilson, S.H., and McMurray, C. OGG1 initiates age-dependent CAG expansion in somatic cells during normal base excision repair of oxidized bases *in vitro* and *in vivo*. **Nature**, 447:447-452, 2007.
- 318. Nakanishi, S.**, Prasad, R., Wilson, S.H., and Smerdon, M. Different structural states in oligonucleosomes are required for early versus late steps of base excision repair. **Nucleic Acids Res.**, 35:4313-4321, 2007.
- 319. Palma, N.**, Cinelli, S., Sapora, O., Wilson, S.H., and Dogliotti, E. Ochratoxin A-induced mutagenesis in mammalian cells is consistent with production of oxidative stress. **Chem. Res. Toxicol.**, 20:1031-1037, 2007.
- 320. Prasad, R.**, Liu, Y., Deterding, L.J., Poltoratsky, V., Kedar, P.S., Horton, J.K., Kanno, S.-I., Asagoshi, K., Hou, E.W., Khodyreva, S.N., Lavrik, O.I., Tomer, K.B., and Wilson, S.H. HMGB1 is a co-factor in mammalian base excision repair. **Mol. Cell**, 27:829-841, 2007.
- 321. Moon, A.F.**, Garcia-Diaz, M., Batra, V.K., Beard, W.A., Bebenek, K., Kunkel, T.A., Wilson, S.H., and Pedersen, L.C. The X family portrait: Structural insights into biological functions of X family polymerases. **DNA Repair (Amst.)**, 6:1709-1725, 2007.
- 322. Xiang, Y.**, Goodman, M., Beard, W.A., Wilson, S.H., and Warshel, A. Exploring the role of large conformational changes in the fidelity of DNA Polymerase β . **Proteins**, 70:231-247, 2007.
- 323. Hou, E.W.**, Prasad, R., Asagoshi, K., Masaoka, A., and Wilson, S.H. Comparative assessment of plasmid and oligonucleotide DNA substrates in measurement of *in vitro* base excision repair activity. **Nucleic Acids Research**, 35:e112, 2007.
- 324. Das, S.**, Chattopadhyay, R., Bhakat, K.K., Boldogh, I., Kohno, K., Prasad, R., Wilson, S.H., and Hazra, T.K. Stimulation of NEIL2-mediated oxidized base excision repair via YB-1 interaction during oxidative stress. **J. Biol. Chem.**, 282:28474-28484, 2007.
- 325. McKenna, C.E.**, Kashemirov, B.A., Upton, T.G., Batra, V.K., Goodman, M.F., Pedersen, L.C., Beard, W.A., and Wilson, S.H. (R)- β,γ -fluoromethylene-dGTP-DNA ternary complex with DNA polymerase β . **J. Am. Chem. Soc.** 129:15412-15413, 2007.
- 326. Horton, J.K.**, Watson, M., Stefanick, D.F., Shaughnessy, D.T., Taylor, J.A., and Wilson, S.H. XRCC1 and DNA polymerase β in cellular protection against cytotoxic DNA single-strand breaks. **Cell Res.**, 18:48-63, 2008.
- 327. Sucato, C.A.**, Upton, T.G., Kashemirov, B.A., Osuna, J., Oertell, K., Beard, W.A., Wilson, S.H., Florián, J., Warshel, A., McKenna, C.E., Goodman, M.F. DNA Polymerase β fidelity: Halomethylene-modified leaving groups in pre-steady-state kinetic analysis reveal differences at the chemical transition state. **Biochemistry**, 47:870-879, 2008.
- 328. Batra, V.K.**, Beard, W.A., Shock, D.D., Pedersen, L.C., and Wilson, S.H. Structures of DNA polymerase β with active-site mismatches suggest a transient abasic site intermediate during misincorporation. **Mol. Cell**, 30:315-324, 2008.
- 329. Lin, P.**, Batra, V.K., Pedersen, L.C., Beard, W.A., Wilson, S.H., and Pedersen, L.G. Incorrect nucleotide insertion at the active site of a G:A mismatch catalyzed by DNA polymerase β . **Proc. Natl. Acad. Sci. USA**, 105:5670-5674, 2008.
- 330. Poltoratsky, V.**, Horton, J.K., Prasad, R., Beard, W.A., Woodgate, R., and Wilson S.H. Negligible impact of pol ι expression on the alkylation sensitivity of pol β -deficient mouse fibroblast cells. **DNA Repair (Amst.)**, 7:830-833, 2008.
- 331. Oka, H.**, Sakai, W., Sonoda, E., Nakamura, J., Asagoshi, K., Wilson, S.H., Kobayashi, M., Yamamoto, K., Heierhorst, J., Takeda, S., and Taniguchi, Y. DNA damage response protein

ASCIZ links base excision repair with immunoglobulin gene conversion. **Biochem. Biophys. Res. Commun.**, 371:225-229, 2008.

332. Kronenberg, G., Harms, C., Sobol, R.W., Cardozo-Pelaez, F., Linhard, H., Winter, B., Balkaya, M., Gertz, K., Gay, S.B., Cox, D., Eckart, S., Ahmadi, M., Juckel, G., Kempermann, G., Hellweg, R., Sohr, R., Hörtnagl, H., Wilson, S.H., Jaenisch, R., and Endres, M. Folate deficiency induces neurodegeneration and brain dysfunction in mice lacking uracil DNA glycosylase. **J. Neurosci.**, 28:7219-7230, 2008.

333. Upton, T.G., Kashemirov, B.A., McKenna, C.E., Goodman, M.F., Prakash, G.K.S., Kultyshev, R., Batra, V.K., Pedersen, L.C., Beard, W.A., Wilson, S.H. α,β -Difluormethylene deoxynucleoside triphosphates: Synthesis and structure of a stable ternary DNA complex with DNA polymerase β . **J. Am. Chem. Soc.**, In Press.

334. Allen, D., Herbert, D.C., McMahan, A., Rotrekl, V., Sobol, R.W., Wilson, S.H., and Walter, C.A. Mutagenesis is elevated in male germ cells obtained from DNA Polymerase-beta heterozygous mice. **Biol. Reprod.**, In Press.

335. Kedar, P.S., Stefanick, D.F., Horton, J.K., and Wilson, S.H. Interaction between PARP-1 and ATR in mouse fibroblasts is blocked by PARP inhibition. **DNA Repair (Amst.)**, In Press.

Articles Submitted, and/or in Revision:

336. Tano, K., Chastain, II, P.D., Asagoshi, K., Adachi, N., Sonoda, E., Kikuchi, K., Koyama, H., Nagata, K., Kaufman, D.G., Takeda, S., Wilson, S.H., Watanabe, M., Swenberg, J.A., and Nakamura, J. Essential role of Fen1 on the elongation of DNA replication fork under oxidative stress.

337. Asagoshi, K., Liu, Y., Lan, L., Prasad, R., Horton, J.K., Sobol, R.W., Bdour, H.M., Taylor, J.-S., Yasui, A., and Wilson, S.H. System for analysis of roles of DNA polymerase β and flap endonuclease 1 in mammalian long patch base excision repair.

338. Simonelli, V., D'Errico, M., Palli, D., Prasad, R., Wilson, S.H., and Dogliotti, E. DNA polymerase β splicing variants characterize normal and tumor gastric tissues: The most frequent exon 2-deleted isoform is a non-coding RNA.

339. Prasad, R., Sass, L., Kim, S.-J., Lewis, M.S., Reily, M.M., Kedar, P.S., Erie, D., and Wilson, S.H. Human PCNA self-association: Species identification and thermodynamics.

340. Beard, W.A., Shock, D.D., Yang, L., Prasad, R., Hou, E.W., Schlick, T., and Wilson, S.H. Conformationally-induced DNA polymerase β active site signaling.

341. Beard, W.A., Shock, D.D., Batra, V.K., Holder, A.A., Crans, D.C., Pedersen, L.C., and Wilson, S.H. DNA polymerase β active site function: Role of divalent metals in mutagenic DNA synthesis.

342. Carrozza, M.J., Stefanick, D.J., Horton, J.K., Kedar, P.S., and Wilson, S.H. ATM-mediated cell cycle checkpoint in response to inhibition of PARP activity during base excision repair.

343. Liang, F., Jain, N., Hutchens, T., Shock, D.D., Beard, W.A., Wilson, S.H., Chiarelli, M.P., and Cho, B.P. α,β -Methylene-2'-deoxynucleoside 5'-triphosphates as non-cleavable substrates for DNA polymerases: Isolation, characterization, and stability studies of novel 2'-deoxycyclonucleosides, 3,5'-anhydro-dG and 2,5'-anhydro-dT.

More information can be found at: <http://www.niehs.nih.gov/about/od/ad/index.cfm>