

CURRICULUM VITAE

Robert George Hawley, Ph.D.

Date April 20, 2009

General Information

Current Position	Professor and Chair
Office Address	Department of Anatomy and Regenerative Biology The George Washington University School of Medicine and Health Sciences 2300 I Street NW, Ross Hall 431 Washington, DC 20037
Phone Number	202-994-3511
Fax Number	202-994-8885
E-mail	rghawley@gwu.edu
Web	www.gwumc.edu/anatomy

Education

B.S., Honors (Chemical Physics, First Class) Departments of Chemistry and Physics, Queen's University, Kingston, Ontario	1979
Ph.D. (Molecular Biology; with Nobumichi Hozumi, Ontario Cancer Institute) Department of Medical Biophysics, University of Toronto, Toronto, Ontario	1984

Post Graduate Education and Training

Postdoctoral Fellow (Developmental Hematopoiesis; with Beatrice Mintz) Institute for Cancer Research, Fox Chase Cancer Center, Philadelphia, PA	1984-1987
--	-----------

Employment History

Scientist, Department of Experimental Oncology, Ottawa Cancer Centre	1987-1991
Assistant Professor of Medicine, University of Ottawa	1987-1991
Assistant Professor of Microbiology and Immunology, University of Ottawa	1987-1991
Member, School of Graduate Studies and Research, University of Ottawa	1988-1991
Assistant Professor of Biochemistry, University of Ottawa	1991
Senior Scientist, Division of Cancer Biology Sunnybrook Health Science Centre, Toronto, Ontario	1991-1996
Assistant Professor of Medical Biophysics, University of Toronto	1992-1994
Member, School of Graduate Studies, University of Toronto	1992-1999
Associate Professor of Medical Biophysics, University of Toronto	1994-1999
Associate Professor of Medicine, University of Toronto	1995-1999
Scientific Director, Oncology Gene Therapy Program, Toronto General Hospital	1996-1999
Head, Oncology Research Laboratories, Toronto General Hospital	1996-1999
Member, Graduate Faculty, Institute of Medical Science, University of Toronto	1996-1999
Head, Hematopoiesis Department, Holland Laboratory, American Red Cross	1999-2004
Executive Director, Cell Therapy Research and Development Holland Laboratory, American Red Cross	2002-2004
Head, Blood and Cell Therapy Development Department Holland Laboratory, American Red Cross	2002-2004
Professor of Anatomy and Cell Biology (with tenure) The George Washington University Medical Center, Washington, DC	1999-2007
Member, Graduate Program in Molecular and Cellular Oncology Institute for Biomedical Sciences, The George Washington University	2000-2005
Member, Graduate Program in Genetics Institute for Biomedical Sciences, The George Washington University	2001-2005
Member, Graduate Programs in Biochemistry and Molecular Genetics, Microbiology and Immunology, and Molecular Medicine Institute for Biomedical Sciences, The George Washington University	2005-present
Professor and Chair, Department of Anatomy and Regenerative Biology The George Washington University Medical Center, Washington, DC	2007-present

Consulting Activities

Consultant, Genetics Institute, Cambridge, MA	1994-1999
Consultant, Hemosol Inc., Etobicoke (Toronto), Ontario	1998
Consultant, TriStem Corporation, London, UK	2002

Professional Memberships

Member, American Society for Microbiology	1987-present
Member, American Association for Cancer Research	1995-present
Member, International Society for Experimental Hematology	1995-present
Member, American Society of Gene Therapy	1997-present
Member, American Society of Hematology	1997-present
Member, International Society for Stem Cell Research	2005-present

Honors and Awards

Valedictorian	1975
Thousand Islands Secondary School, Brockville, Ontario	
J.I. Carter Scholarship (Highest Grade Point Average)	1975
Leeds and Grenville County Board of Education, Ontario	
Ontario Scholarship, Ministry of Education of Ontario	1975
Tricolor Scholarship, Queen's University	1975-1977
O.M. Montgomery Scholarship, Queen's University	1978-1979
Ontario Graduate Scholarship, Ministry of Education of Ontario	1979-1980
Studentship, Medical Research Council of Canada	1980-1984
Allan M. Wu Research Award, Graduate Organization	1984
Faculty of Medicine, University of Toronto	
Fellowship, Medical Research Council of Canada	1984-1987
Career Scientist, Ontario Cancer Treatment and Research Foundation	1987-1996
King Fahd Endowed Professorship	2004-present
The George Washington University School of Medicine and Health Sciences	
Carleton and Sigrid Stewart Plenary Speaker Award	2004
Great Lakes International Imaging and Flow Cytometry Association	
Elaine H. Snyder Cancer Research Award	2006
The George Washington University School of Medicine and Health Sciences	

Administrative Service

Institutional Service

Department of Medical Biophysics, University of Toronto	
Member, Cell and Molecular Biology Stream Curriculum Committee	1991-1992
Coordinator, Graduate Student Orientation Day (November 21, 1992)	1992
Member, Student Affairs/Executive Committee	1992-1995
Member, Cell and Molecular Biology Stream Curriculum Committee	1995-1996
Sunnybrook Health Science Centre	
Member, Research Projects Committee	1993-1994
Chair, Research Projects Committee	1994-1995
Department of Medicine, University of Toronto	
Co-coordinator, Experimental Hematology Residency Training Program	1996-1998
Ontario Cancer Institute/Princess Margaret Hospital	
Member, Search Committee for Head of Experimental Therapeutics	1997
Toronto General Hospital	
Member, Animal Care Committee	1998
Holland Laboratory, American Red Cross	
Member, Promotions Committee	1999-2004
Member, Seminar Committee	1999-2001
Chair, Seminar Committee	2001-2002
Member, Cell Therapy Research and Development Committee	2000-2002
Member, Invention Disclosure Committee	2003-2004

The George Washington University	
Member, Search Committee for Chair of Microbiology	2000
Member, Stem and Progenitor Cell Research Group	2001-2003
Member, Faculty Search Committee, Pharmacology and Physiology	2004-2005
Member, Radiation Safety Committee (Chair, 2006-2008)	2004-2008
Member, Executive Committee, Institute for Biomedical Sciences	2004-present
Member, Institutional Animal Care and Use Committee	2005-2007
Member, GWUMC Research Strategy Design Team	2005
Graduate Advisor, Molecular and Cellular Oncology, Molecular Medicine	2006-2007
Judge, GWUMC Research Day Medical Student Poster Presentations	2007
Member, Molecular Medicine Comprehensive Exam Committee	2007
Member, LCME Faculty Self-Study Subcommittee	2007-2008
Member, CTSA Translational Technologies and Resources Committee	2007-2008
Member, GW-Sabin Vaccine Institute Governance Committee	2007-present
Member, Search Committee for Chair of Biochemistry	2007-2008
Member, Executive Committee, Medical Center Faculty Senate	2008-present
Member, Faculty Search Committee, Biochemistry	2009-present
Member, Executive Committee, McCormick Genomics Center	2009-present

National Service

Organizations

National Cancer Institute of Canada	
Scientific Officer, Fellowship Panel	1987-1989
Member, Grants Panel H (Hematopoiesis)	1989-1993
Chair, Grants Panel H (Hematopoiesis)	1993-1994
Member, Program Project Grant Review Team	1994
Member, Program Project Grant Review Team	1996
Ministry of Education and Training of Ontario	
Member, Selection Panel, Ontario Graduate Scholarship Program	1995-1997
Canadian Red Cross Society	
Member, Research and Development Grants Review Panel	1997-1998
American Society of Gene Therapy	
Member, Canadian Council	1997-1999
Member, Hemopoietic Cell Gene Therapy Committee	2004-2007
National Institutes of Health	
Ad Hoc Member, Comparative Medicine Review Committee	1999
Ad Hoc Member, Hematology Subcommittee 1 Study Section	2001
Member, Stem Cell Research Career Pathways Working Group	2002
Ad Hoc Member, Hematopoiesis Study Section	2003
Member, Steering Committee, Stem Cell Characterization Unit	2003-present
National Stem Cell Resource	
Member, Advisory Committee	2001-2004

Editorial Boards

Hematology

Associate Editor 1998-2001

Blood

Member 2001-2006

Stem Cells

Member (2001-02), Associate Editor (2002-04), Senior Editor (2004-07) 2001-2007

Current Gene Therapy

Member (2001-02), Editor-in-Chief (2002-04), Associate Editor (2004-) 2001-present

The Open Gene Therapy Journal

Member 2008-present

Advances in Hematology

Member 2008-present

The Open Systems Biology Journal

Member 2009-present

Meetings Chaired

- Co-chair, Growth Factors in Cancer Symposium, Canadian Association of Medical Oncologists, Royal College of Physicians and Surgeons of Canada Annual Meeting, Toronto, Ontario, September 14, 1990
- Session Chair, HIV Gene Therapy, Organization for Economic Co-operation and Development, Workshop on Gene Delivery Systems, Ottawa, Ontario, June 30, 1995
- Session Co-chair, Cancer Therapy and Aids, 3rd Canadian Gene Therapy Symposium, Montreal, Quebec, June 27, 1998
- Session Co-chair, RNA Vectors II, 2nd Annual Meeting of the American Society of Gene Therapy, Washington, DC, June 13, 1999
- Session Co-chair, New Gene Transfer Systems, 41st Annual Meeting of the American Society of Hematology, New Orleans, LA, December 6, 1999
- Session Co-chair, Retrovirus Vectors, 4th Annual Meeting of the American Society of Gene Therapy, Seattle, WA, June 1, 2001
- Session Chair, Retrovirus Vectors, 5th Annual Meeting of the American Society of Gene Therapy, Boston, MA, June 5, 2002
- Session Co-chair, RNA Virus Vectors: Expression and Tissue Targeting, 5th Annual Meeting of the American Society of Gene Therapy, Boston, MA, June 9, 2002
- Session Co-chair, Faculty Research Symposium: Human Stem Cells (Symposium Co-organizer), 8th Annual George Washington University Medical Center Research Day, Washington, DC, April 25, 2003
- Session Chair, Retrovirus Vectors, 6th Annual Meeting of the American Society of Gene Therapy, Washington, DC, June 4, 2003
- Session Co-chair, Therapeutic Opportunities and Safety Considerations, 6th Annual Meeting of the American Society of Gene Therapy, Washington, DC, June 5, 2003
- Session Co-chair, Regulation of HSC Self-Renewal, 45th Annual Meeting of the American Society of Hematology, San Diego, CA, December 8, 2003
- Session Co-chair, Gene Transfer - Biology and Marking Studies II, 45th Annual Meeting of the American Society of Hematology, San Diego, CA, December 9, 2003
- Session Chair, Development and Longevity of Stem Cells, 48th Annual Meeting of the American Society of Hematology, Orlando, FL, December 11, 2006
- Session Co-chair, Hematopoietic Stem Cell Gene Therapy, 10th Annual Meeting of the American Society of Gene Therapy, Seattle, WA, June 2, 2007

Ad Hoc Reviewer - Conferences

- The New York Academy of Sciences
 - Conference Proposal Reviewer, Interleukin 12, New York, NY, November 1995.
- International Society for Experimental Hematology
 - Abstract Reviewer, 27th Annual Meeting, Vancouver, British Columbia, August 1998
- American Society of Gene Therapy
 - Abstract Reviewer, 2nd Annual Meeting, Washington, DC, June 1999
 - Abstract Reviewer, 3rd Annual Meeting, Denver, CO, June 2000
 - Abstract Reviewer, 5th Annual Meeting, Boston, MA, June 2002
 - Coordinating Abstract Reviewer, 6th Annual Meeting, Washington, DC, June 2003
 - Abstract Reviewer, 7th Annual Meeting, Minneapolis, MN, June 2004
 - Abstract Reviewer, 10th Annual Meeting, Seattle, WA, June 2007
- American Society of Hematology
 - Abstract Reviewer, 41st Annual Meeting, New Orleans, LA., December 1999
 - Abstract Reviewer, 45th Annual Meeting, San Diego, CA, December 2003
 - Abstract Reviewer, 48th Annual Meeting, Orlando, FL, December 2006

Ad Hoc Reviewer - Journal Manuscripts

Biochemistry and Cell Biology, Biochimica et Biophysica Acta, BioTechniques, Biotechnology Progress, Blood, BMC Cell Biology, BMC Developmental Biology, Cancer Research, Cell Biochemistry and Biophysics, Clinical and Experimental Metastasis, Current Gene Therapy, Cytometry, Experimental and Molecular Pathology, Experimental Cell Research, Experimental Hematology, Gene Therapy, Genes, Chromosomes and Cancer, Genomics, Haematologica, Hematology, Human Gene Therapy, International Journal of Cancer, Journal of Clinical Oncology, Journal of Cutaneous Medicine and Surgery, Journal of Experimental Medicine;

Journal of Gene Medicine; Journal of Hematotherapy, Journal of Immunology, Journal of Neuroscience Methods, Journal of Rheumatology, Journal of Virology, Leukemia; Leukemia Research; Microvascular Research; Molecular Therapy, Nature Biotechnology, Nature Medicine, Nature Protocols, Nucleic Acids Research; Oncogene; Proceedings of the National Academy of Sciences USA; ScientificWorldJournal; Stem Cells; The Journal of Physical Chemistry; Transplantation; Trends in Cardiovascular Medicine

Ad Hoc Reviewer - Grants

British Columbia Health Care Research Foundation; Cancer Research UK; Children's Hospital of Eastern Ontario Research Institute; Comitato Telethon Fondazione Onlus (Italy); Medical Research Council of Canada; National Blood Authority (UK); National Health Research and Development Program of Canada; Natural Sciences and Engineering Research Council of Canada; Northeastern Ontario Regional Cancer Centre; The Hospital for Sick Children Foundation (Toronto, Ontario); The Wellcome Trust (UK)

Teaching Service

Course Responsibilities

Co-coordinator, Advanced Cell Biology (MBP 1001Y) Medical Biophysics, University of Toronto	1992-1993
Co-coordinator, Sunnybrook Student Seminar Series (MBP 1015Y) Medical Biophysics, University of Toronto	1992-1994
Coordinator, Advanced Cell Biology (MBP 1001Y) Medical Biophysics, University of Toronto	1993-1995
Section Director (Stem Cells), Molecular Medicine I (BMSC 213) Institute for Biomedical Sciences, The George Washington University	2005
Course Director, Cell Biology (BMSC 212 Core Curriculum Course) Institute for Biomedical Sciences, The George Washington University	2006-present

Lectures

- Seminar Course (MIC 8240S), Department of Microbiology and Immunology, University of Ottawa, B-cell-specific gene expression with retroviral vectors (1 hr), January 12, 1988.
- Advanced Topics in Virology (MIC 8236), Department of Microbiology and Immunology, University of Ottawa, Retroviral vectors (3 hrs), March 15, 1988.
- Molecular Genetics (BIO 4115), Department of Biology, University of Ottawa:
Retroviruses and oncogenes (3 hrs), November 17, 1988;
Retroposons (3 hrs), November 21, 1988.
- Basic Virology (MIC 8226), Department of Microbiology and Immunology, University of Ottawa, Retrovirology (1.5 hrs), February 28, 1989.
- Frontiers in Molecular Cloning (MIC 8227), Department of Microbiology and Immunology, University of Ottawa:
Gene transfer in animals (3 hrs), March 6, 1990;
Homologous recombination and insertional mutations (3 hrs), March 13, 1990;
Transcription factors (3 hrs), March 20, 1990;
Antigen receptor genes: mechanism of assembly (3 hrs), March 27, 1990.
- Course in Oncology for Residents, Ottawa Cancer Centre, General Division, Growth factors in cancer (3 hrs), March 21, 1990.
- Biotechnology (BCH 4142/BIO 4172), Departments of Biochemistry and Biology, University of Ottawa, Genetic medicine (2 hrs), February 20, 1991.
- Basic Science of Oncology (MBP 1018), Department of Medical Biophysics, University of Toronto, Organ-specific patterns of metastasis: the role of cell adhesion molecules, integrins, and the ECM (1.5 hrs), November 12, 1991.
- Summer Research Student Seminar Series, Sunnybrook Health Science Centre, Toronto, Ontario, Regulatory mechanisms of normal and leukemic hematopoiesis (1 hr), July 26, 1993.
- Advanced Cell Biology (MBP1001Y), Department of Medical Biophysics, University of Toronto:
History of hematopoietic stem cells (2 hrs), February 28, 1994;
Cytokine signal transduction (2 hrs), March 7, 1994;
Molecular regulation of programmed cell death (2 hrs), March 14, 1994;
Biology of hematopoietic stem cells (2 hrs), November 28, 1994;
Biochemistry of cytokine signaling (2 hrs), December 5, 1994;

Cell death in the hematopoietic system (2 hrs), December 12, 1994;
Hematopoietic stem cells (2 hrs), October 16, 1995;
Mechanisms in hematopoietic differentiation (4 hrs), October 30, 1995.

Medical Biophysics Graduate Student Seminar Series (MBP1015Y), Sunnybrook Health Science Centre, Toronto, Ontario, Cancer biology research at Sunnybrook. (Keynote Lecture, 1994-95 academic year; 1 hr), October 11, 1994.

Hematology/Oncology Fellows Research Seminar Series, Hospital for Sick Children, Toronto, Controlling hematopoietic cell death (1 hr), April 11, 1997.

Toronto Citywide Hematology Fellows Seminar Series, Toronto General Hospital, Cell survival mechanisms in normal and malignant hematopoiesis (1 hr), April 23, 1997.

Hematology/Oncology Residents Cancer Biology Seminar Series, Princess Margaret Hospital, Toronto, Ontario, Apoptosis and cancer (1 hr), January 6, 1998.

Molecular Oncology Seminar Series (MCOP 222), Graduate Molecular and Cellular Oncology Program, Institute for Biomedical Sciences, The George Washington University, Molecular leukemogenesis (2 hrs), February 22, 2000.

Developmental Genetics (ANAT 260), Department of Anatomy and Cell Biology, The George Washington University:
Gene control during development: Transcriptional hierarchies (2 hrs), March 15, 2000;
Organogenesis: Hematopoiesis (2 hrs), March 27, 2000; April 4, 2001; April 3, 2002.

Advanced Problems in Genetics (GNET 201/301), Graduate Genetics Program, Institute for Biomedical Sciences, The George Washington University:
Oncoretroviral and lentiviral vectors for experimental gene transfer and gene therapy (1 hr), November 27, 2001; November 19, 2002; November 11, 2003.

Macromolecular Interactions - Nucleic Acids and Information Processing (BMSC 211), Department of Biochemistry and Molecular Biology, The George Washington University, Hematopoietic stem cell gene transfer and therapy (2 hrs), December 3, 2001.

The Basic Science of Oncology (MCOP 221), Graduate Molecular and Cellular Oncology Program, Institute for Biomedical Sciences, The George Washington University, Cancer gene therapy (1.5 hrs), November 21, 2002.

Molecular Medicine I (BMSC 213/214), Graduate Institute for Biomedical Sciences, The George Washington University:
Hematopoiesis and stem cell therapies (2 hrs), March 12, 2003; March 9, 2004.

Molecular Medicine I (BMSC 213), Graduate Institute for Biomedical Sciences, The George Washington University:
Embryonic stem cells and regenerative medicine (2 hrs), March 7, 2005;
Hematopoietic stem cell-based therapies (2 hrs), March 8, 2005;
Molecular events in leukemia (2 hrs), April 27, 2005.

Molecular Oncology (MCOP 222), Graduate Molecular and Cellular Oncology Program, Institute for Biomedical Sciences, The George Washington University, Hematopoetry and the art of leukemogenesis (1.5 hrs), March 17, 2005.

Human and Transforming Retroviruses (MICR 235), Graduate Program in Microbiology and Immunology, The George Washington University, Gammaretroviral and lentiviral vectors for experimental gene transfer and gene therapy (2 hrs), November 16, 2005.

Systems Biology and Molecular Physiology (MMED 213), Graduate Institute for Biomedical Sciences, The George Washington University:
Hematologic malignancies (2 hrs), April 26, 2006; April 25, 2007; April 23, 2008;
Embryonic stem cells and regenerative medicine (2 hrs), May 1, 2006.

Cell Biology (BMSC 212), Graduate Institute for Biomedical Sciences, The George Washington University:
Eukaryotic cells (2 hrs), January 22, 2007; January 14, 2008; January 12, 2009;
Stem cells (2 hrs), February 14, 2007; February 13, 2008; February 11, 2009;
Hematopoietic system (2 hrs), February 20, 2007.

Advanced Research in Stem Cell Biology (ANAT 222), Graduate Institute for Biomedical Sciences, The George Washington University, Stem cell engineering (1 hr), February 8, 2007.

Human Microscopic Anatomy (ANAT 213), School of Medicine and Health Sciences, The George Washington University, Blood and bone marrow (2 hrs), September 14, 2007; September 12, 2008.

Human Embryology (ANAT 130), Columbian College of Arts and Sciences, The George Washington University, Introduction to stem cells (1.5 hrs), March 31, 2008.

Graduate Students and Postdoctoral Fellows Mentored

University of Ottawa Department of Microbiology and Immunology

Luc Sabourin (FCAR Scholarship), M.S./Ph.D. 1988-1991

University of Toronto Department of Medical Biophysics

Ming-Hai Wang, Ph.D., Research Fellow 1991-1992

Tomoko Okada, Ph.D. (Sunnybrook Trust Fellowship), Research Fellow 1992-1993

Evelyn Voura (MRC Studentship), M.S. Student 1992-1994

Veronique de Lanux (Sunnybrook Trust Studentship), M.S. Student 1992-1995

Melinda Schwarze (UofT Open Scholarship), M.S. Student 1993-1995

Lloyd Berger, Ph.D. (Sunnybrook Trust Fellowship), Research Fellow 1993-1996

Francis Lieu (OGS/UofT Open Scholarships), M.S. Student 1994-1996

Thaddeus Allen (UofT Open Scholarship), M.S. Student 1996-1998

Jaime Claudio, Ph.D. (CRCS/UofT Medicine Fellowships), Research Fellow 1996-1999

Yeou-Cherng Bor, Ph.D. (UofT Medicine Fellowship), Research Fellow 1996-1999

Shinsaku Nakagawa, Ph.D. (Univ. Osaka Fellowship), Research Fellow 1997-1999

Naihui Huang, Ph.D., Research Fellow 1997-1999

Xiao-Yan Wen, Ph.D. (with Keith Stewart), Research Fellow 1997-1999

Yuan-Xiao Zhu, Ph.D., Research Fellow 1997-1999

Holland Laboratory, American Red Cross/The George Washington University

Ali Ramezani, Ph.D., Assistant Research Professor 1999-present

Bronwyn Owens, M.S., Ph.D. Student, Molecular and Cellular Oncology 1999-2003

Irene Riz, Ph.D., Research Scientist 2001-present

Shannon Eaker, Ph.D., Research Fellow 2001-2003

Morvarid Moayeri, M.D., Ph.D. Student, Genetics 2001-2005

Sergey Akimov, Ph.D., Research Scientist 2001-2006

Kristi Kerkel, B.S., Ph.D. Student, Molecular and Cellular Oncology 2002-2006

Hyo Jung Lee, B.S., M.S. Student, Genomics and Bioinformatics 2006-2007

Lynnsey Zweier, Ph.D. Student, Biochemistry and Molecular Genetics 2007-present

Graduate Student Dissertation Advisory and Examining Committees (examinations only*)

University of Ottawa

Dongwan Yoo, Ph.D. Student, Microbiology and Immunology 1988

Kenneth Garson, Ph.D. Student, Microbiology and Immunology 1988-1990

Benoit Leclair, Ph.D. Student, Biology 1988-1990

Donald Murphy, Ph.D. Student, Microbiology and Immunology 1988-1990

Heather Percival*, B.Med.S. Student, Medicine 1989

Kevin Prinoski*, M.S. Student, Microbiology and Immunology 1989

Yoga Adcharamoorthy, M.S. Student, Microbiology and Immunology 1989-1990

Elizabeth Fullmer, M.S. Student, Microbiology and Immunology 1989-1991

Brian Howell, Ph.D. Student, Biochemistry (McGill University) 1990-1991

Gary Shutler, Ph.D. Student, Microbiology and Immunology 1990-1991

Pamela Icely, M.S. Student, Biochemistry 1990-1991

Eric LeCasse*, Ph.D. Student, Biochemistry 1990

Monika Nowak*, M.S. Student, Physiology 1991

Essam Wanas, M.S. Student, Microbiology and Immunology 1991

University of Toronto

Chao Lu, Ph.D. Student, Institute of Medical Science 1991-1996

Jeff Howard, Ph.D. Student, Medical Biophysics 1992-1997

Kevin Jewell, M.S. Student, Medical Biophysics 1992-1995

Filio Billia, Ph.D. Student, Medical Biophysics 1992-1997

Claudio Gambetti*, M.S. Student, Medical Biophysics 1992

Shi-Jiang Lu*, Ph.D. Student, Medical Biophysics 1992

Catherine Taylor*, M.S. Student, Medical Biophysics 1992

Diana Paglia, M.S. Student, Medical Biophysics 1992-1996

Sandra Stapleton*, M.S. Student, Medical Biophysics 1993

Jae Kim*, Ph.D. Student, Medical Biophysics 1993

Sona Vasudevan*, Ph.D. Student, Medical Biophysics	1993
Brent Zanke*, Ph.D. Student, Medical Biophysics	1993
Marc Coppelino*, M.S. Student, Medical Biophysics	1993
Erik Hegmann*, M.S. Student, Medical Biophysics	1993
Christine Brezden*, M.S. Student, Medical Biophysics	1993
Bruno Madore*, M.S. Student, Medical Biophysics	1993
Jacynth Abraham*, Ph.D. Student, Medical Biophysics	1994
Christine White, M.S. Student, Cell. Mol. Pathology	1994-1995
Carolyn Lutzko, Ph.D. Student, Lab. Med. Pathobiology	1994-1998
Shaojun Tang*, M.S. Student, Medical Genetics	1994
Bruce Carpick*, Ph.D. Student, Medical Biophysics	1994
Yunping Lin*, Ph.D. Student, Medical Biophysics	1994
Mary-Claire Kavanagh*, M.S. Student, Medical Biophysics	1995
Jonathan Sheps*, Ph.D. Student, Medical Biophysics	1995
Louis-Martin Boucher*, Ph.D. Student, Medical Biophysics	1995
Chien Ting Chin*, Ph.D. Student, Medical Biophysics	1995
Jeff Stainsby*, M.S. Student, Medical Biophysics	1995
Linda Ryan*, M.S. Student, Medical Biophysics	1995
Xianhua Piao*, Ph.D. Student, Institute of Medical Science	1995
Gihane Wasfy*, M.S. Student, Microbiology	1995
Craig Dorrell, Ph.D. Student, Mol. Med. Genetics	1996-1998
André Larochelle*, Ph.D. Student, Mol. Med. Genetics	1996
Angela Sati*, Ph.D. Student, Immunology	1996
Danny Grossi*, M.S. Student, Institute of Medical Science	1996
Peixiang Li*, M.S. Student, Medical Biophysics	1996
Bridget Thompson, M.S. Student, Institute of Medical Science	1997-1998
Elizabeth Plowright, M.S. Student, Institute of Medical Science	1997-1998
Nicole Hunter, M.S. Student, Immunology	1997-1998
Yu Zhang*, Ph.D. Student, Medical Biophysics	1997
Ou Jin*, Ph.D. Student, Mol. Med. Genetics (Exam Chair)	1998
Akiko Iwasaki*, Ph.D. Student, Immunology	1998
<u>The George Washington University</u>	
Mary Litzinger, Ph.D. Student, Immunology	2000-2004
Jose Ruiz, Ph.D. Student, Genetics	2001-2004
Wayne Considine, Ph.D. Student, Genetics	2001-2002
Mariaestela Ortiz, Ph.D. Student, Genetics	2002-2005
Rima Adler, Ph.D. Student, Genetics (Co-mentor)	2002-2006
André Pilon, Ph.D. Student, Biochemistry and Molecular Genetics	2007-present

External Examiner for Doctoral Dissertations

Jana Krosi, Ph.D. Department of Genetics, University of British Columbia The role of erythropoietin and erythropoietin receptor in regulation of hemopoiesis Supervisor: R. Keith Humphries	1997
Eibhlin Conneally, M.B.,B.Ch.,Ph.D. Department of Pathology and Laboratory Medicine, University of British Columbia Genetic modification of human hematopoietic cells Supervisor: Connie J. Eaves	1998
Jean-Paul Heale, Ph.D. Department of Biochemistry and Molecular Biology, University of British Columbia Application of retroviral integrase to stable recombination of substrate DNA <i>in vivo</i> Supervisor: Ross T.A. MacGillivray	1998

Deborah Hemmerling, Ph.D. Department of Medical Microbiology and Immunology, University of Alberta Retroviral vectors for anti-HIV gene therapy Supervisor: Lung-Ji Chang	1998
Hongkyun Kim, Ph.D. Roswell Park Graduate Division, State University of New York at Buffalo Signaling of IL-6-type cytokines and gene induction Supervisor: Heinz Baumann	1999
Sharlene Faulkes, Ph.D. Department of Medical Genetics, University of British Columbia Site-directed integration using the Cre/lox system in hematopoietic and embryonic stem cells Supervisor: R. Keith Humphries.	2002

Grant Support

Current

NIH 5 R01 HL65519-07 (Transferred to GWUMC on 7/1/04) Principal Investigator Molecular Chimerism Therapy for Hemophilia A Total Direct Costs Awarded: \$1,959,817 Total Indirect Costs Awarded: \$1,046,803	6/15/01-6/30/10
---	-----------------

NIH 5 R01 HL65519-07 (Supplemental Award) Neonatal Gene Therapy for Hemophilia A in Rhesus Macaques One of three projects funded by the NHLBI Center for Fetal Monkey Gene Transfer for Heart, Lung, and Blood Diseases (http://www.cfmgt.ucdavis.edu/)	1/09/08
---	---------

Pending

NIH 2 R01 HL66305-06A1 (Competitive renewal of 5 R01 HL66305-05) Role of TLX1 in Malignant Hematopoiesis Total Direct Costs Requested: \$1,250,000 Total Indirect Costs Requested: \$705,000	Submitted 3/05/09
NIH 5 R01 HL66305-05 (Transferred to GWUMC on 7/1/04) Principal Investigator Embryoid Body-derived Hematopoietic Stem Cell Lines Total Direct Costs Awarded: \$1,123,076 Total Indirect Costs Awarded: \$602,430	8/15/01-6/30/08

NIH 1S10RR027824-01 (NCRR Shared Instrumentation Grant Program, S10) Principal Investigator Cell Sorter Upgrade Total Direct Costs Requested: \$152,005	Submitted 3/16/09
--	-------------------

NOT-OD-09-056 (Recovery Act Funds for Administrative Supplement) Principal Investigator (NIH 5 R01 HL65519-07) Employment Opportunity for a Pre-doctoral Student Total Direct Costs Requested: \$131,213 Total Indirect Costs Requested: \$74,136	Submitted 4/15/09
---	-------------------

Completed (operating costs excluding salary support)

Co-Principal Investigator Principal Investigator: James A. Thomson Improved Lentiviral Vectors for Primate ES Cells NIH R24 RR16209 (Consortium Agreement transferred to GWUMC on 7/1/04) Total Direct Costs Awarded (RGH): \$517,437 Total Indirect Costs Awarded (ARC/GWUMC): \$280,451	7/01/02-6/30/08
--	-----------------

Principal Investigator Mechanisms in normal and leukemic hematopoiesis National Cancer Institute of Canada Total Direct Costs Awarded: \$1,338,454 (CDN)	1988-2000
Principal Investigator Investigation of the role of interleukin-6 in autoimmune diseases using a transgenic mouse model The Arthritis Society Total Direct Costs Awarded: \$112,000 (CDN)	1989-1991
Principal Investigator Role of the <i>c-cbl</i> proto-oncogene in human leukemia/lymphoma Leukemia Research Fund of Canada Total Direct Costs Awarded: \$40,822 (CDN)	1990-1991
Principal Investigator Cell adhesion molecules in bone marrow metastasis Medical Research Council of Canada Total Direct Costs Awarded: \$262,822 (CDN)	1992-1995
Principal Investigator Toward IL-12 gene therapy for multiple myeloma Leukemia Research Fund of Canada Total Direct Costs Awarded: \$36,080 (CDN)	1996-1997
Principal Investigator Retroviral vectors for stem cell gene therapy Bayer/Canadian Red Cross Society Research and Development Fund Total Direct Costs Awarded: \$140,268 (CDN)	1996-1998
Principal Investigator Immunotherapy of multiple myeloma Medical Research Council of Canada Total Direct Costs Awarded: \$290,064 (CDN)	1997-2000
Co-Principal Investigator Principal Investigator: Michael V. Sefton Immunoisolation of mammalian cells in a synthetic polymer Medical Research Council of Canada Total Direct Costs Awarded: \$281,787 (CDN)	1997-2000
Co-Principal Investigator Principal Investigator: A. Keith Stewart Myeloma vaccine development Multiple Myeloma Research Foundation Total Direct Costs Awarded: \$70,000 (CDN)	1998-1999
Co-Principal Investigator Principal Investigator: A. Keith Stewart Genetic immunotherapy of cancer Medical Research Council of Canada Total Direct Costs Awarded: \$304,500 (CDN)	1998-2001
Co-Principal Investigator Co-Principal Investigator: A. Keith Stewart Hematopoietic stem cell gene transfer Canadian Red Cross Blood Services Total Direct Costs Awarded: \$91,862 (CDN)	1999-2000

Sponsored Research Agreements

Principal Investigator 1993-1995
Preclinical studies in murine bone marrow chimeras
Genetics Institute, Cambridge, MA
Total Direct Costs Awarded: \$92,500

Principal Investigator 1998-2000
Retroviral vector-mediated hematopoietic cell engineering
Genetics Institute, Cambridge, MA
Total Direct Costs Awarded: \$100,000

License Agreements (MSCV Retroviral Vectors)

Aventis Pharmaceuticals Inc., Bridgewater, NJ 9/19/01-9/14/09
Clontech Laboratories, Inc., Mountain View, CA 9/01/98-present
(http://www.clontech.com/images/ctq/JAN99UPD/CR682032_MSCV_US.pdf)
Millennium Pharmaceuticals Inc., Cambridge, MA 4/20/98-9/14/09

Completed License Agreements (MSCV Retroviral Vectors)

Amgen Inc., Thousand Oaks, CA† 6/27/97-6/27/00
Bayer Corporation, Berkeley, CA 7/01/98-4/27/04
Genentech Inc., South San Francisco, CA† 5/01/96-5/01/99
Kirin Brewery Co. Ltd., Gunma, Japan 11/18/96-3/1/03
Ontogeny Inc., Cambridge, MA (defunct) 5/16/96-5/16/99
Osiris Therapeutics Inc., Baltimore, MD 5/01/97-5/01/99
SyStemix Inc., Palo Alto, CA (defunct) 9/30/97-9/30/00
Wyeth Pharmaceuticals, Inc., Cambridge, MA 1/18/96-8/18/04
†transferred to Clontech Laboratories, Inc.

Patents, Inventions and Copyrights

United States Patent No. 5,874,301
Title: Embryonic Cell Populations and Methods to Isolate Such Populations
Inventors: Keller, G.M., **Hawley, R.G.**, and Choi, K.
Assignee: National Jewish Medical and Research Center, Denver, CO
Issued: February 23, 1999

United States Patent No. 6,110,739
Title: Method to Produce Novel Embryonic Cell Populations
Inventors: Keller, G.M., **Hawley, R.G.**, and Choi, K.
Assignee: National Jewish Medical and Research Center, Denver, CO
Issued: August 29, 2000

United States Patent No. 6,555,318
Title: Method for Identification of Cell Growth or Differentiation Factors
Inventors: Keller, G.M., **Hawley, R.G.**, and Choi, K.
Assignee: National Jewish Medical and Research Center, Denver, CO
Issued: April 29, 2003

United States Patent No. 6,576,433
Title: Method for Identification of Cell Growth or Differentiation Factors
Inventors: Keller, G.M., **Hawley, R.G.**, and Choi, K.
Assignee: National Jewish Medical and Research Center, Denver, CO
Issued: June 10, 2003

United States Patent No. 7,374,934
Title: Cell Populations and Methods of Production Thereof
Inventors: Keller, G.M., **Hawley, R.G.**, and Choi, K.
Assignee: National Jewish Medical and Research Center, Denver, CO
Issued: May 20, 2008

o All patents licensed to VistaGen Inc., Mountain View, CA

Publications (158 publications in total excluding books, editorials and abstracts)

● indicates papers of special significance

Journal Articles – Refereed (papers that have received >100 citations since 1996 as listed in the Scopus or Google Scholar databases are noted)

1. DeBoer, J.W.M., Hutchinson, D.A., **Hawley, R.G.**, and Wan, J.K.S. Photochemical reduction of furil by pentachlorophenol: low field CIDNP. *Chem. Phys.* 43: 81-91, 1979.
2. Hozumi, N., **Hawley, R.G.**, and Murialdo, H. Molecular cloning of an immunoglobulin kappa constant gene from NZB mouse. *Gene* 13: 163-172, 1981.
3. **Hawley, R.G.**, Shulman M.J., Murialdo, H., Gibson, D., and Hozumi, N. Mutant immunoglobulin genes have repetitive DNA elements inserted into their intervening sequences. *Proc. Natl. Acad. Sci. USA* 79: 7425-7429, 1982.
 - First demonstration of movement of a “mobile genetic element” within the mammalian genome, which led to the discovery of insertional oncogene activation by intracisternal A particle genes as communicated in a letter to the editor of *Nature* (P. Newmark, *Nature* 301: 196, 1983); see also publications #5, #7 and #8
4. Ochi, A., **Hawley, R.G.** Shulman, M.J., and Hozumi, N. Transfer of a cloned immunoglobulin light chain gene to mutant hybridoma cells restores specific antibody production. *Nature* 302: 340-342, 1983.
5. Kuff, E.L., Feenstra, A., Lueders, K., Smith, L., **Hawley, R.G.**, Hozumi, N. and Shulman, M. Intracisternal A particle genes as movable elements in the mouse genome. *Proc. Natl. Acad. Sci. USA* 80: 1992-1996, 1983.
6. Ochi, A., **Hawley, R.G.**, Hawley, T., Shulman, M.J., Traunecker, A., Köhler, G., and Hozumi, N. Functional immunoglobulin M production after transfection of cloned immunoglobulin heavy and light chain genes into lymphoid cells. *Proc. Natl. Acad. Sci. USA* 80: 6351-6355, 1983.
 - First report of recombinant antibody production by mammalian cell line genetic engineering; see also publication #4
7. **Hawley, R.G.**, Shulman, M.J., and Hozumi, N. Transposition of two different intracisternal A particle elements into an immunoglobulin kappa chain gene. *Mol. Cell. Biol.* 4: 2565-2572, 1984.
8. Greenberg, R., **Hawley, R.**, and Marcu, K.B. Acquisition of an intracisternal A-particle element by a translocated *c-myc* gene in a murine plasma cell tumor. *Mol. Cell. Biol.* 5: 3625-3628, 1985.
9. Hawley, T., **Hawley, R.G.**, Pauling, J., Ochi, A., and Hozumi, N. Immunoglobulin synthesis in non-B cell lines. *Immunol. Lett.* 12: 257-262, 1986.
10. **Hawley, R.G.**, Covarrubias, L., Hawley, T., and Mintz, B. Handicapped retroviral vectors efficiently transduce foreign genes into hematopoietic stem cells. *Proc. Natl. Acad. Sci. USA* 84: 2406-2410, 1987.
 - One of the first reports of the development of “self-inactivating” gammaretroviral vectors
11. **Hawley, R.G.**, Sabourin, L.A., and Hawley, T.S. An improved retroviral vector for gene transfer into undifferentiated cells. *Nucl. Acids Res.* 17: 4001, 1989.
12. Capel, B., **Hawley, R.**, Covarrubias, L., Hawley, T., and Mintz, B. Clonal contributions of small numbers of retrovirally marked hematopoietic stem cells engrafted in unirradiated neonatal *W/W^v* mice. *Proc. Natl. Acad. Sci. USA* 86: 4564-4568, 1989.
13. Hawley, T.S., Sabourin, L.A., and **Hawley, R.G.** Comparative analysis of retroviral vector expression in mouse embryonal carcinoma cells. *Plasmid* 22: 120-131, 1989.
14. Keating, A., Horsfall, W., **Hawley, R.G.**, and Toneguzzo, F. Effect of different promoters on expression of genes introduced into hematopoietic and marrow stromal cells by electroporation. *Exp. Hematol.* 18: 99-102, 1990.
15. Capel, B., **Hawley, R.G.** and Mintz, B. Long- and short-lived hematopoietic stem cell clones individually identified with retroviral integration markers. *Blood* 75: 2267-2270, 1990.
16. Sabourin, L.A. and **Hawley, R.G.** Suppression of programmed death and G₁ arrest in B-cell hybridomas by interleukin-6 is not accompanied by altered expression of immediate early response genes. *J. Cell. Physiol.* 145: 564-574, 1990.
17. Hawley, T.S., McLeish, W.A., and **Hawley, R.G.** Establishment of a novel factor-dependent myeloid cell line from primary cultures of mouse bone marrow. *Cytokine* 3: 60-71, 1991.
 - Generation of a cell line that led to the identification of the IL-3/GM-CSF/IL-5-responsive STAT5A/5B transcription factors reported by A. Mui *et al.* in *EMBO J.* 14: 1166-1175, 1995
18. Hawley, T.S., Burns, B.F., and **Hawley, R.G.** Leukocytosis in mice following long-term reconstitution with genetically-modified bone marrow cells constitutively expressing interleukin-1 α or interleukin-6. *Leuk. Res.* 15: 659-673, 1991.
19. Hawley, T.S., Lach, B., Burns, B.F., May, L.T., Sehgal, P.B., and **Hawley, R.G.** Expression of retrovirally transduced IL-1 α in IL-6-dependent B cells: a murine model of aggressive multiple myeloma. *Growth Factors* 5: 327-338, 1991.

20. Harris, J.F., **Hawley, R.G.**, Hawley, T.S., and Crawford-Sharpe, G. Increased frequency of both total and specific monoclonal antibody producing hybridomas using a fusion partner that constitutively expresses recombinant IL-6. *J. Immunol. Meth.* 148: 199-207, 1992.
21. **Hawley, R.G.**, Fong, A.Z.C., Burns, B.F., and Hawley, T.S. Transplantable myeloproliferative disease induced in mice by an interleukin-6 retrovirus. *J. Exp. Med.* 176: 1149-1163, 1992. (101 citations)
 - One of the first reports of *in vivo* hematopoietic regulatory activity and experimental hematopathology of IL-6-type cytokines; see also publications #25 and #44
22. Ouellet, S., Yang, H., Aubin, R.A., **Hawley, R.G.**, Wenckebach, G.F.C. and Lemaire, I. Bidirectional modulation of TNF- α production by alveolar macrophages in asbestos-induced pulmonary fibrosis. *J. Leuk. Biol.* 53: 279-286, 1993.
23. Graham, C.H., Hawley, T.S., **Hawley, R.G.**, MacDougall, J.R., Kerbel, R.S., Khoo, N., and Lala, P.K. Establishment and characterization of first trimester human trophoblast cells with extended lifespan. *Exp. Cell Res.* 206: 204-211, 1993. (174 citations)
24. **Hawley, R.G.**, Wang, M.H., Fong, A.Z.C., and Hawley, T.S. Association between ICAM-1 expression and metastatic capacity of murine B-cell hybridomas. *Clin. Exp. Metastasis* 11: 213-226, 1993.
25. **Hawley, R.G.**, Fong, A.Z.C., Ngan, B.Y., de Lanux, V.M., Clark, S.C., and Hawley, T.S. Progenitor cell hyperplasia with rare development of myeloid leukemia in interleukin 11 bone marrow chimeras. *J. Exp. Med.* 178: 1175-1188, 1993.
26. Dedhar, S., Rennie, P.S., Shago, M., Leung Hagesteijn, C., Yang, H., Filmus, J., **Hawley, R.G.**, Bruchofsky, N., Cheng, H., Matusik, R.J., and Giguère, V. Inhibition of nuclear hormone receptor activity by calreticulin. *Nature* 376: 480-483, 1994. (211 citations)
27. **Hawley, R.G.**, Fong, A.Z.C., Lu, M., and Hawley, T.S. The *HOX11* homeobox-containing gene of human leukemia immortalizes murine hematopoietic precursors. *Oncogene* 9: 1-12, 1994.
28. **Hawley, R.G.**, Lieu, F.H.L., Fong, A.Z.C., and Hawley, T.S. Versatile retroviral vectors for potential use in gene therapy. *Gene Ther.* 1: 136-138, 1994. (522 citations)
 - MSCV gammaretroviral vectors have been distributed to well over 1,000 laboratories worldwide; modified versions were utilized in the successful gene therapy clinical trial reported by R. Morgan *et al.* in *Science* 314: 126-129, 2006 that described the ability of genetically engineered peripheral blood lymphocytes to mediate tumor regression in patients with metastatic melanoma, and in the successful reprogramming of human somatic cells to pluripotent stem cells reported by I. Park *et al.* in *Nature* 451: 141-146, 2008; see also publications #100 and #111
29. Berger, L.C., Hawley, T.S., Lust, J.A., Goldman, S.J., and **Hawley, R.G.** Tyrosine phosphorylation of JAK-TYK kinases in malignant plasma cell lines growth-stimulated by interleukins 6 and 11. *Biochem. Biophys. Res. Commun.* 202: 596-605, 1994.
30. Lu, S.-J., Man, S., Bani, M.R., Adachi, D., **Hawley, R.G.**, Kerbel, R.S., and Ben-David, Y. Retroviral insertional mutagenesis as a strategy for the identification of genes associated with *cis*-diamminedichloroplatinum (II) resistance. *Cancer Res.* 55: 1139-1145, 1995.
31. DeCoteau, J.F., Reis, M.D., Griesser, H., Lorenzana, A., Al-Hashmi, I., **Hawley, R.G.**, Naumov, A., White, C.A., and Pinkerton, P.H. SBH-1, a novel Reed-Sternberg cell line capable of inducing tumors in SCID mice: immunophenotypic, cytogenetic and cytokine expression profiles. *Blood* 85: 2829-2838, 1995.
32. Schwarze, M.M.K. and **Hawley, R.G.** Prevention of myeloma cell apoptosis by ectopic *bcl-2* expression or interleukin-6-mediated upregulation of *bcl-x_L*. *Cancer Res.* 55: 2262-2265, 1995. (149 citations)
 - First report to provide insight into the IL-6-mediated cell survival pathway
33. Yan, X.-Q., Lacey, D., Fletcher, F., Hartley, C., McElroy, P., Sun, Y., Xia, M., Mu, S., Saris, C., Hill, D., **Hawley, R.G.**, and McNiece, I.K. Chronic exposure to retroviral vector encoded MGDF (*mpl*-ligand) induces lineage-specific growth and differentiation of megakaryocytes in mice. *Blood* 86: 4025-4033, 1995.
34. **Hawley, R.G.**, Fong, A.Z.C., Ngan, B.Y., and Hawley, T.S. Hematopoietic transforming potential of activated *ras* in chimeric mice. *Oncogene* 11: 1113-1123, 1995.
35. Brady, G., Billia, F., Knox, J., Hoang, T., Kirsch, I.R., Voura, E., **Hawley, R.G.**, Cumming, R., Buchwald, M., Siminovitch, K., Miyamoto, N., Boehmelt, G., and Iscove, N.N. Analysis of gene expression in a complex differentiation hierarchy by global amplification of cDNA from single cells. *Current Biology* 5: 909-922, 1995. (124 citations)
36. Ally, B.A., Hawley, T.S., McKall-Faienza, K.J., Kündig, T.M., Oehen, S.U., Pircher, H., **Hawley, R.G.**, and Ohashi, P.S. Prevention of autoimmune disease by retroviral-mediated gene therapy. *J. Immunol.* 155: 5404-5408, 1995.
37. Okada, T. and **Hawley, R.G.** Adhesion molecules involved in the binding of murine myeloma cells to bone marrow stromal elements. *Int. J. Cancer* 63: 823-830, 1995.
38. Howard, J.C., Berger, L., Bani, M.R., **Hawley, R.G.**, and Ben-David, Y. Activation of the erythropoietin

- gene in the majority of F-MuLV-induced erythroleukemias results in growth factor independence and enhanced tumorigenicity. *Oncogene* 12: 1405-1415, 1996.
39. Cheng, L., Fu, J., Tsukamoto, A., and **Hawley, R.G.** Use of green fluorescent protein (GFP) variants to monitor gene transfer and expression in mammalian cells. *Nat. Biotechnol.* 14: 606-609, 1996. (165 citations)
 - One of the first reports of flow cytometric detection of the jellyfish *A. Victoria* green fluorescent protein in mammalian cells; featured in an editorial by I. Verma in *Nat. Biotechnol.* 14: 576, 1996; see also publications #51, #81 and #85
 40. Yan, X.-Q., Lacy, D. Hill, D., Chen, Y., Fletcher, F., **Hawley, R.G.**, and McNiece, I.K. A model of myelofibrosis and osteosclerosis in mice induced by overexpressing thrombopoietin (mpl ligand): reversal of disease by bone marrow transplantation. *Blood* 88: 402-409, 1996. (124 citations)
 41. Baumann, H., Wang, Y., Morella, K.K., Lai, C.-F., Dams, H., Hilton, D.J., **Hawley, R.G.**, and Mackiewicz, A. Complex of the soluble IL-11 receptor and IL-11 acts as IL-6-type cytokine in hepatic and nonhepatic cells. *J. Immunol.* 157: 284-290, 1996.
 42. Lai, C.-F., Ripperger, J., Morella, K.K., Jurlander, J., Hawley, T.S., Carson, W.E., Kordula, T., Caligiuri, M.A., **Hawley, R.G.**, Fey, G.H., and Baumann, H. Receptors for interleukin (IL)-10 and IL-6-type cytokines use similar signaling mechanisms for inducing transcription through IL-6 response elements. *J. Biol. Chem.* 271: 13968-13975, 1996.
 43. Ding, C., Kume, A., Bjorgvinsdottir, H., **Hawley, R.G.**, Pech, N., and Dinauer, M.C. High level reconstitution of respiratory burst activity in a human X-linked chronic granulomatous disease (X-CGD) cell line and correction of murine X-CGD bone marrow cells by retroviral-mediated gene transfer of human gp91^{phox}. *Blood* 88: 1834-1840, 1996.
 44. **Hawley, R.G.**, Hawley, T.S., Fong, A.Z.C., Quinto, C., Collins, M., Leonard, J.C., and Goldman, S.J. Thrombopoietic potential and serial repopulating ability of murine hematopoietic stem cells constitutively expressing interleukin-11. *Proc. Natl. Acad. Sci. USA* 93: 10297-10302, 1996.
 - Collaborative preclinical experiments with Wyeth Pharmaceuticals/Genetics Institute; human recombinant interleukin-11 was approved as NEUMEGA[®] by the FDA in 1997 for the prevention of thrombocytopenia following chemotherapy
 45. Lu, M., Zhang, N., Maruyama, M., **Hawley, R.G.**, and Ho, A.D. Retrovirus-mediated gene expression in hematopoietic cells correlates inversely with growth factor stimulation. *Hum. Gene Ther.* 7: 2263-2271, 1996.
 46. Berger, L.C. and **Hawley, R.G.** Interferon- β interrupts interleukin-6-dependent signaling events in myeloma cells. *Blood* 89: 261-271, 1997.
 47. **Hawley, R.G.**, Fong, A.Z.C., Reis, M.D., Zhang, N., Lu, M., and Hawley, T.S. Transforming function of the *HOX11/TCL3* homeobox gene. *Cancer Res.* 57: 337-345, 1997.
 48. Lieu, F.H.L., Hawley, T.S., Fong, A.Z.C., and **Hawley, R.G.** Transmissibility of MSCV-based retroviral vectors carrying both interleukin-12 cDNAs and a third gene: implications for immune gene therapy. *Cancer Gene Ther.* 4: 167-175, 1997.
 49. Wang, Y., Kuropatwinski, K.K., White, D.W., Hawley, T.S., **Hawley, R.G.**, Tartaglia, L.A., and Baumann, H. Leptin receptor action in hepatic cells. *J. Biol. Chem.* 272: 16216-16223, 1997. (146 citations)
 50. Voura, E.B., Billia F., Iscove N.N., and **Hawley, R.G.** Expression mapping of adhesion receptor genes during differentiation of individual hematopoietic precursors. *Exp. Hematol.* 25: 1172-1179, 1997.
 51. Cheng, L., Du, C., Murray, D., Tong, X., Zhang, Y.A., Chen, B.P., and **Hawley, R.G.** A GFP reporter system to assess gene transfer and expression in viable human hematopoietic progenitors. *Gene Ther.* 4: 1013-1022, 1997.
 52. Wiznerowicz, M., Fong, A.Z.C., Mackiewicz, A., and **Hawley, R.G.** Double-copy bicistronic retroviral vector platform for gene therapy and tissue engineering: application to melanoma vaccine development. *Gene Ther.* 4: 1061-1068, 1997.
 53. Berger, L.C., Tamir, A., Ben-David, Y., and **Hawley, R.G.** Dose-dependent activation of p21^{ras} by interferon- β . *J. Interferon Cytokine Res.* 17: 757-762, 1997.
 54. Pizzoferrato, E., Chu, N.R., Hawley, T.S., Lieu, F.H.L., Barber, B.H., **Hawley, R.G.**, Watts, T.H., and Berinstein, N.L. Enhanced immunogenicity of B cell lymphoma genetically engineered to express B7-1 and interleukin-12. *Hum. Gene Ther.* 8: 2217-2228, 1997.
 55. Ahmed, A., Dusanter-Fourt, I., Bernard, M., Mayeux, P., **Hawley, R.G.**, Bennardo, T., Novault, S., Bonnet, M.L., Gisselbrecht, S., Varet, B., and Turhan, A.G. BCR-ABL and constitutively active erythropoietin receptor (cEpoR) activate distinct mechanisms for growth factor-independence and inhibition of apoptosis in Ba/F3 cell line. *Oncogene* 16: 489-496, 1998.
 56. Kim, H., Hawley, T.S., **Hawley, R.G.**, and Baumann, H. Protein tyrosine phosphatase-2 (SHP-2) moderates signaling by gp130 but is not required for gene induction in hepatic cells. *Mol. Cell. Biol.* 18:

- 1525-1533, 1998.
57. **Hawley, R.G.** and Berger, L.C. Growth control mechanisms in multiple myeloma. *Leuk. Lymphoma* 29: 465-475, 1998.
 58. Claudio, J.O., Liew, C.-C., Dempsey, A.A., Cukerman, E., Stewart, A.K., Na, E., Atkins, H.L., Iscove, N.N., and **Hawley, R.G.** Identification of sequence-tagged transcripts differentially expressed within the human hematopoietic hierarchy. *Genomics* 50: 44-52, 1998.
 59. Cheng, L., Du, C., Lavau, C., Chen, S., Tong, J., Chen, B.P., Scollay, R., **Hawley, R.G.**, and Hill, B. Sustained retroviral gene expression in engrafting human hematopoietic stem cells and their lymphoid and myeloid progeny. *Blood* 92: 83-92, 1998.
 60. Breems, D.A., Van Driel, E.M., **Hawley, R.G.**, Siebel, K.E., and Ploemacher, R.E. Stroma-conditioned medium and sufficient prestimulation improve fibronectin fragment-mediated retroviral gene transfer into human primitive mobilized peripheral blood stem cells through effects on their recovery and transfection efficiency. *Leukemia* 12: 951-959, 1998.
 61. Keller, G., Wall, C., Fong, A.Z.C., Hawley, T.S., and **Hawley, R.G.** Overexpression of HOX11 leads to the immortalization of embryonic precursors with both primitive and definitive hematopoietic potential. *Blood* 92: 877-887, 1998.
 - Five patents have been issued related to this work
 62. Hawley, T.S., Fong, A.Z.C., Griesser, H., Lyman, S.D., and **Hawley, R.G.** Leukemic predisposition of mice transplanted with gene-modified hematopoietic precursors expressing flt3 ligand. *Blood* 92: 2003-2011, 1998.
 63. Hawley, T.S., Linsley, P.S., and **Hawley, R.G.** Co-expression of B7-1 with interleukin-12 enhances vaccine-induced antitumor immunity in experimental myeloma. *Hematology* 3: 365-374, 1998.
 64. Schmidt, P.H., Dransfield, D.T., Claudio, J.O., **Hawley, R.G.**, Trotter, K., Milgram, S., and Goldenring, J.R. AKAP350: a multiply spliced A-kinase anchoring protein associated with centrosomes. *J. Biol. Chem.* 274: 3055-3066, 1999.
 65. De Sepulveda, P., Okkenhaug, K., Rose, J.L., **Hawley, R.G.**, Dubreuil, P., and Rottapel, R. Socs1 binds to multiple signalling proteins and suppresses Steel factor-dependent proliferation. *EMBO J.* 18: 904-915, 1999. (131 citations)
 66. Zhang, N., Shen, W., **Hawley, R.G.**, and Lu, M. CTF1: a partner for HOX11 in hematopoietic precursor cell immortalization. *Oncogene* 18: 2273-2280, 1999.
 67. Lai, C., Ripperger, J., **Hawley, R.G.**, and Baumann, H. The STAT3-independent signaling pathway by gp130 in hepatic cells. *J. Biol. Chem.* 274: 7793-7802, 1999.
 68. Ilaria, R.L., Jr., **Hawley, R.G.**, and Van Etten, R.A. Dominant negative mutants implicate STAT5 in myeloid cell proliferation and differentiation. *Blood* 93: 4154-4166, 1999.
 69. Claudio, J.O., Liew, C.-C., Ma, J., Heng, H.H.Q., Stewart, A.K., and **Hawley, R.G.** Cloning and expression analysis of a novel WD repeat gene, *WDR3*, mapping to 1p12-p13. *Genomics* 59: 85-89, 1999.
 70. Leung, B.L., Haughn, L., Veillette, A., **Hawley, R.G.**, Rottapel, R., and Julius, M. TcR $\alpha\beta$ independent CD28 signaling and costimulation require non-CD4-associated Lck. *J. Immunol.* 163: 1334-1341, 1999.
 71. Yan, X.-Q., Lacey, D.L., Saris, C., Mu, S., Hill, D., **Hawley, R.G.**, and Fletcher, F.A. Ectopic overexpression of c-mpl by retroviral-mediated gene transfer suppressed megakaryopoiesis but enhanced erythropoiesis in mice. *Exp. Hematol.* 27: 1409-1417, 1999.
 72. Govaerts, A.-S., Guillaume, Th., André, M., Bayat, B., Feyens, A.-M., Hawley, T.S., Fong, A.Z.C., **Hawley, R.G.**, and Symann, M. Retroviral-mediated transfer of genes encoding interleukin-2 and interleukin-12 into fibroblasts increases host antitumor responsiveness. *Cancer Gene Ther.* 6: 447-455, 1999.
 73. Dunussi-Joannopoulos, K., Runyon, K., Erikson, J., Schaub, R.G., **Hawley, R.G.**, and Leonard, J.P. Vaccines with interleukin-12-transduced acute myeloid leukemia cells elicit very potent therapeutic and long-lasting protective immunity. *Blood* 94: 4263-4273, 1999.
 74. Okada, T., **Hawley, R.G.**, Kodaka, M., and Okuno, H. Significance of VLA-4-ICAM-1 interaction and CD44 for transendothelial invasion in a bone marrow metastatic myeloma model. *Clin. Exp. Metastasis* 17: 623-629, 1999.
 75. Dorrell, C., Gan, O.I., Pereira, D.S., **Hawley, R.G.**, and Dick, J.E. Expansion of human cord blood CD34⁺CD38⁻ cells in *ex vivo* culture during retroviral transduction without a corresponding increase in SCID repopulating cell (SRC) frequency: dissociation of SRC phenotype and function. *Blood* 95: 102-110, 2000. (161 citations)
 76. Plowright, E.E., Li, J., Bergsagel, P.L., Chesi, M., Barber, D.L., Branch, D.R., **Hawley, R.G.**, and Stewart, A.K. Ectopic expression of fibroblast growth factor receptor 3 promotes myeloma cell proliferation and prevents apoptosis. *Blood* 95: 992-998, 2000. (108 citations)
 77. Trama, J., Lu, Q., **Hawley, R.G.**, and Ho, S.N. The NFAT-related protein NFATL1 (TonEBP/NFAT5) is

- induced upon T cell activation in a calcineurin-dependent manner. *J. Immunol.* 165: 4884-4894, 2000.
78. Allen, T.D., Zhu, Y.-X., Hawley, T.S., and **Hawley, R.G.** TALE homeoproteins as HOX11-interacting partners in T-cell leukemia. *Leuk. Lymphoma* 39: 241-256, 2000.
 79. Ramezani, A., Hawley, T.S., and **Hawley, R.G.** Lentiviral vectors for enhanced gene expression in human hematopoietic cells. *Mol. Ther.* 2: 458-469, 2000. (124 citations)
 - A. Ramezani received the 2001 Roland H. Lange Award in Biomedical Sciences from the American Red Cross for this paper
 80. Michie, A.M., Soh, J.-W., **Hawley, R.G.**, Weinstein, I.B., and Zúñiga-Pflücker, J.C. Allelic exclusion and differentiation by protein kinase C-mediated signals in immature thymocytes. *Proc. Natl. Acad. Sci. USA* 98: 609-614, 2001.
 81. Hawley, T.S., Telford, W.G., and **Hawley, R.G.** "Rainbow" reporters for multispectral marking and lineage analysis of hematopoietic stem cells. *Stem Cells* 19: 118-124, 2001.
 82. Donahue, R.E., Sorrentino, B.P., **Hawley, R.G.**, An, D.S., Chen, I.S.Y., and Wersto, R.P. Fibronectin fragment CH-296 inhibits apoptosis and enhances *ex vivo* gene transfer by murine retrovirus and human lentivirus vectors independent of viral tropism in non-human primate CD34⁺ cells. *Mol. Ther.* 3: 359-367, 2001.
 83. Nakagawa, S., Massie, B., and **Hawley, R.G.** Tetracycline-regulatable adenovirus vectors: pharmacologic properties and clinical potential. *Eur. J. Pharm. Sci.* 13: 53-60, 2001.
 84. Li, Z., Zhu, Y.X., Plowright, E.E., Bergsagel, P.L., Chesi, M., Patterson, B., Hawley, T.S., **Hawley, R.G.**, and Stewart, A.K. The myeloma-associated oncogene fibroblast growth factor receptor 3 is transforming in hematopoietic cells. *Blood* 97: 2413-2419, 2001.
 85. Hawley, T.S., Telford, W.G., Ramezani, A., and **Hawley, R.G.** Four-color flow cytometric detection of retrovirally expressed red, yellow, green and cyan fluorescent proteins. *BioTechniques* 30: 1028-1034, 2001. (Published in part as an Application Note in *Am. Biotechnol. Lab.* 19: 12-14, 2001.)
 - Featured in an editorial by K. Robinson in *Biophotonics Int.* Nov.: 60-62, 2001
 86. **Hawley, R.G.** Progress toward vector design for hematopoietic stem cell gene therapy. *Curr. Gene Ther.* 1: 1-17, 2001.
 87. Gao, Z., Golob, J., Tanavde, V.M., Civin, C.I., **Hawley, R.G.**, and Cheng, L. High levels of transgene expression following transduction of long-term NOD/SCID-repopulating human cells with a modified lentiviral vector. *Stem Cells* 19: 247-259, 2001.
 88. Relander, T., Brun, T., **Hawley, R.G.**, Karlsson, S., and Richter, J. Retroviral transduction of human CD34⁺ cells on fibronectin fragment CH-296 is inhibited by high concentrations of virus containing medium. *J. Gene Med.* 3: 207-218, 2001.
 89. Wen, X.-Y., Mandelbaum, S., Li, Z.H., Hitt, M., Graham, F.L., Hawley, T.S., **Hawley, R.G.**, and Stewart, A.K. Tricistronic viral vectors co-expressing interleukin-12 (IL-12) and CD80 (B7-1) for the immunotherapy of cancer: preclinical studies in myeloma. *Cancer Gene Ther.* 8: 361-370, 2001.
 90. Wolfgang, M.J., Eisele, S.G., Browne, M.A., Schotzko, M.L., Garthwaite, M.A., Durning, M., Ramezani, A., **Hawley, R.G.**, Thomson, J.A., and Golos, T.G. Rhesus monkey placental transgene expression after lentiviral gene transfer into preimplantation embryos. *Proc. Natl. Acad. Sci. USA* 98: 10728-10732, 2001.
 91. Jubinsky, P.T., Messer, A., Bender, J., Morris, R.E., Ciraolo, G.M., Witte, D.P., **Hawley, R.G.**, and Short, M.K. Identification and characterization of Magmas, a novel mitochondria-associated protein involved in granulocyte-macrophage colony-stimulating factor signal transduction. *Exp. Hematol.* 29: 1392-1402, 2001.
 92. Bertram, E.M., **Hawley, R.G.**, and Watts T.H. Overexpression of rab7 enhances the kinetics of antigen processing and presentation with MHC class II molecules in B cells. *Int. Immunol.* 14: 309-318, 2002.
 93. Yu, W.-M., Hawley, T.S., **Hawley, R.G.**, and Qu, C.-K. Role of the docking protein Gab2 in β 1 integrin signaling pathway-mediated hematopoietic cell adhesion and migration. *Blood* 99: 2351-2359, 2002.
 94. Dunussi-Joannopoulos, K., Zuberek, K., Runyon, K., **Hawley, R.G.**, Wong, A., Erickson, J., Herrmann, S., and Leonard, J.P. Efficacious immunomodulatory activity of the chemokine stromal cell-derived factor 1 (SDF-1): local secretion of SDF-1 at the tumor site serves as T-cell chemoattractant and mediates T-cell dependent antitumor responses. *Blood* 100: 1551-1558, 2002.
 95. Riz, I., Eaker, S., and **Hawley, R.G.** Genomic biology of hematopoietic stem cells: perspectives and promise for advanced therapeutics. *Applied Genomics and Proteomics* 1: 95-108, 2002.
 96. Owens, B.M. and **Hawley, R.G.** *HOX* and *non-HOX* homeobox genes in leukemic hematopoiesis. *Stem Cells* 20: 364-379, 2002. (100 citations)
 97. Yu, W.-M., Hawley, T.S., **Hawley, R.G.**, and Qu, C.-K. immortalization of yolk sac-derived precursor cells. *Blood* 100: 3828-3831, 2002.
 98. Ramezani, A. and **Hawley, R.G.** Overview of the HIV-1 lentiviral vector system. In: *Current Protocols in Molecular Biology*. F. Ausubel, R. Brent, B. Kingston, D. Moore, J. Seidman, J.A. Smith, and K. Struhl,

- eds. (John Wiley & Sons, Inc., NJ) 16.21.1-16.21.15, 2002.
99. Ramezani, A. and **Hawley, R.G.** Generation of HIV-1-based lentiviral vector particles. In: *Current Protocols in Molecular Biology*. F. Ausubel, R. Brent, B. Kingston, D. Moore, J. Seidman, J.A. Smith, and K. Struhl, eds. (John Wiley & Sons, Inc., NJ) 16.22.1-16.22.15, 2002.
 - "...--the first *Current Protocols* title--remains the benchmark by which all other lab manuals are judged"
 100. Ramezani, A. and **Hawley, R.G.** Human immunodeficiency virus type-1-based vectors for gene delivery to human hematopoietic stem cells. In: *Viral Vectors for Gene Therapy: Methods and Protocols, Methods Mol. Med.* 76, C.A. Machida, ed. (Humana Press Inc., Totowa, NJ) 467-492, 2003.
 101. Ma, Y., Ramezani, A., Lewis, R., **Hawley, R.G.**, and Thomson, J.A. High level sustained transgene expression in human embryonic stem cells using lentiviral vectors. *Stem Cells* 21: 111-117, 2003. (175 citations)
 - One of the first studies to demonstrate stable gene transfer into human embryonic stem cells
 102. Saenko, E.L., Ananyeva, N.M., Moayeri, M., Ramezani, A., and **Hawley, R.G.** Development of improved factor VIII molecules and new gene transfer approaches for hemophilia A. *Curr. Gene Ther.* 3: 27-41, 2003.
 103. Ramezani, A., Hawley, T.S., and **Hawley, R.G.** Performance- and safety-enhanced lentiviral vectors containing the human interferon- β scaffold attachment region and the chicken β -globin insulator. *Blood* 101: 4717-4724, 2003.
 - One of the lentiviral vector backbones described was demonstrated to direct sustained transgene expression in human embryonic stem cells as reported in publication #98, a modified version of which was utilized in the successful reprogramming of human somatic cells to pluripotent stem cells reported by J. Yu *et al.* in *Science* 318: 1917-1920, 2007
 104. Owens, B.M., Zhu, Y.-X., Suen, T.-C., Wang, P.-X., Greenblatt, J.F., Goss, P.E., and **Hawley, R.G.** Specific homeodomain-DNA interactions are required for HOX11-mediated transformation. *Blood* 101: 4966-4974, 2003.
 105. Telford, W.G., Hawley, T.S., and **Hawley, R.G.** Analysis of violet-excited fluorochromes by flow cytometry using a violet laser diode. *Cytometry A* 54: 48-55, 2003.
 106. Haughn, L., **Hawley, R.G.**, Morrison, D.K., von Boehmer, H., and Hockenbery, D.M. Bcl-2 and Bcl-x_L restrict lineage choice during hematopoietic differentiation. *J. Biol. Chem.* 278: 25158-25165, 2003.
 - Featured in *Sci. STKE*, Vol. 2003, Issue 190, pp. tw257, 8 July 2003 [DOI: 10.1126/stke.2003.190.tw257]
 107. Yu, W.-M., Hawley, T.S., **Hawley, R.G.**, and Qu, C.-K. Qu. Catalytic-dependent and - independent roles of SHP-2 tyrosine phosphatase in interleukin-3 signaling. *Oncogene* 22: 5995-6004, 2003.
 108. Yamada, K., Ramezani, A., **Hawley, R.G.**, Ebell, W., Arwert, F., Arnold, L.W., and Walsh, C. E. Phenotype correction of Fanconi anemia group A hematopoietic stem cells using lentiviral vector. *Mol. Ther.* 8: 600-610, 2003.
 109. Li, Z.H., Wen, X.-Y., Mandelbaum, S., Falcioni, N., Hawley, T.S., **Hawley, R.G.**, and Stewart, A.K. Improved therapeutic outcome following combination immunogene vaccination therapy in murine myeloma. *Leuk. Lymphoma* 44: 1775-1784, 2003.
 110. Bunting, K.D. and **Hawley, R.G.** Integrative molecular and developmental biology of adult stem cells. *Biol. Cell* 95: 563-651, 2003.
 111. Eaker, S.S., Hawley, T.S., Ramezani, A., and **Hawley, R.G.** Detection and enrichment of hematopoietic stem cells by side population phenotype. In: *Flow Cytometry Protocols, Second Edition, Methods Mol. Biol.* 263: T.S. Hawley and R.G. Hawley, eds. (Humana Press Inc., Totowa, NJ) 161-180, 2004.
 112. Hawley, T.S., Herbert, D.J., Eaker, S.S., and **Hawley, R.G.** Multiparameter flow cytometry of fluorescent protein reporters. In: *Flow Cytometry Protocols, Second Edition, Methods Mol. Biol.* 263: T.S. Hawley and R.G. Hawley, eds. (Humana Press Inc., Totowa, NJ) 219-238, 2004.
 113. Dorrell, C., Takenaka, K., Minden, M.D., **Hawley, R.G.**, and Dick, J.E. Hematopoietic cell fate and the initiation of leukemic properties in primitive primary human cells are influenced by Ras activity and farnesyltransferase inhibition. *Mol. Cell. Biol.* 24: 6993-7002, 2004.
 114. Owens, B.M., **Hawley, R.G.**, and Spain, L.M. Retroviral transduction in fetal thymic organ culture. In: *Developmental Hematopoiesis: Methods and Practical Approaches, Methods Mol. Med.* 105: M.H. Baron, ed. (Humana Press Inc., Totowa, NJ) 311-322, 2004.
 115. Moayeri, M., Ramezani, A., Morgan, R.A., Hawley, T.S., and **Hawley, R.G.** Sustained phenotypic correction of hemophilia A mice following oncoretroviral-mediated expression of a bioengineered human factor VIII gene in long-term hematopoietic repopulating cells. *Mol. Ther.* 10: 892-902, 2004.
 116. Haviernik, P., Lahoda, C., Bradley, H.L., Hawley, T.S., Ramezani, A., **Hawley, R.G.**, Stetler-Stevenson, M., Stetler-Stevenson, W.G., and Bunting, K.D. Tissue inhibitor of matrix metalloproteinase-1 overexpression in M1 myeloblasts impairs IL-6-induced differentiation. *Oncogene* 23: 9212-9219, 2004.
 117. Hughes, M.S., Yu, Y.Y.L., Dudley, M.E., Zheng, Z., Robbins, P.F., Li, Y., Wunderlich, J., **Hawley, R.G.**,

- Moayeri, M., Rosenberg, S.A., and Morgan, R.A. Transfer of a TCR gene derived from a patient with a marked antitumor response conveys highly active T-cell effector functions. *Hum. Gene Ther.* 16: 457-472, 2005.
- Study formed the basis for the successful MSCV gammaretroviral vector-based gene therapy clinical trial reported by R. Morgan *et al.* in *Science* 314: 126-129, 2006
118. Riz, I. and **Hawley, R.G.** G₁/S transcriptional networks modulated by the *HOX11/TLX1* oncogene of T-cell acute lymphoblastic leukemia. *Oncogene* 24: 5561-5575, 2005.
119. Siatskas, C., Underwood, J., Ramezani, A., **Hawley, R.G.**, and Medin, J.A. Specific pharmacological dimerization of KDR in lentivirally-transduced hematopoietic cells activates anti-apoptotic and proliferative mechanisms. *The FASEB Journal* 19: 1752-1754, 2005.
120. Akimov, S.S., Ramezani, A., Hawley, T.S., and **Hawley, R.G.** Bypass of senescence, immortalization and transformation of human hematopoietic progenitor cells. *Stem Cells* 23: 1423-1433, 2005.
- S. Akimov received the first annual *Stem Cells* Young Investigator Award for this paper
121. Telford, W., Murga, M., Hawley, T., **Hawley, R.**, Packard, B., Komoriya, A., Haas, F., and Hubert, C. DPSS yellow-green 561-nm lasers for improved fluorochrome detection by flow cytometry. *Cytometry A* 68: 36-44, 2005.
122. Moayeri, M., Hawley, T.S., and **Hawley, R.G.** Correction of murine hemophilia A by hematopoietic stem cell gene therapy. *Mol. Ther.* 12: 1034-1042, 2005.
123. Owens, B.M., Hawley, T.S., Spain, L.M., Kerkel, K.A., and **Hawley, R.G.** *TLX1/HOX11*-mediated disruption of primary thymocyte differentiation prior to the CD4⁺CD8⁺ double-positive stage. *Br. J. Haematol.* 132: 216-229, 2006.
124. Ramezani, A., Hawley, T.S., and **Hawley, R.G.** Stable gammaretroviral vector expression during embryonic stem cell-derived *in vitro* hematopoietic development. *Mol. Ther.* 14: 245-254, 2006.
125. Telford, W., Kapoor, V., Jackson, J., Burgess, W., Buller, G., Hawley, T., and **Hawley, R.** Violet laser diodes in flow cytometry: an update. *Cytometry A* 69: 1153-1160, 2006.
126. **Hawley, R.G.**, Ramezani, A. and Hawley, T.S. Hematopoietic stem cells. In: *Adult Stem Cells, Methods Enzymol.* 419: I. Klimanskaya and R. Lanza, eds. (Elsevier/Academic Press, San Diego, CA) 149-179, 2006.
127. Riz, I., Akimov, S.S., Eaker, S.S., Baxter, K.K., Lee H.J., Mariño-Ramírez, L., Landsman, D., Hawley, T.S., and **Hawley, R.G.** *TLX1/HOX11*-induced hematopoietic differentiation blockade. *Oncogene* 26: 4115-4123, 2007.
128. Hong, S., Hwang, D.-Y., Yoon, S., Isacson, O., Ramezani, A., **Hawley, R.G.**, and Kim, K.S. Functional analysis of various promoters in lentiviral vectors at different stages of *in vitro* differentiation of mouse embryonic stem cells. *Mol. Ther.* 15: 1630-1639, 2007.
- Featured by N. Dorman in the Citations section of *BioTechniques* 43: 547, 2007
129. Yang, Z., Gagarin, D., Ramezani, A., **Hawley, R.G.**, and McCaffrey, T.A. Resistance to Fas-induced apoptosis in cells from human atherosclerotic lesions: elevated Bcl-xL inhibits apoptosis and caspase activation. *J. Vasc. Res.* 44: 483-494, 2007.
130. Ramezani, A., Hawley, T.S., and **Hawley, R.G.** Reducing the genotoxic potential of retroviral vectors. In: *Gene Therapy Protocols, Volume 2: Design and Characterization of Gene Transfer Vectors, Third Edition, Methods Mol. Biol.* 434: J.M. Le Doux, ed. (Humana Press Inc./Springer, Totowa, NJ) 183-203, 2008.
131. **Hawley, R.G.** Does retroviral insertional mutagenesis play a role in the generation of induced pluripotent stem cells? *Mol. Ther.* 16: 1354-1355, 2008.
132. Ramezani, A., Hawley, T.S., and **Hawley, R.G.** Combinatorial incorporation of enhancer blocking components of the chicken β -globin 5'HS4 and human T-cell receptor α/δ BEAD-1 insulators in self-inactivating retroviral vectors reduces their genotoxic potential. *Stem Cells* 26: 3257-3266, 2008.
- Selected as a Highlighted Paper on the Stem Cells Portal (www.StemCellsPortal.com)
133. **Hawley, R.G.**, Hawley, T.S., and Cantor, A.B. *TLX1 (HOX11)* immortalization of embryonic stem cell-derived and primary murine hematopoietic progenitors. In: *Current Protocols in Stem Cell Biology*. M. Bhatia, A.G. Elefanty, S.J. Fisher, R. Patient, T. Schlaeger, and E.Y. Snyder, eds. (John Wiley & Sons, Inc., NJ). 7: 1F.7.1-1F.7.19, 2008.
134. Riz, I., Hawley, T.S., Johnston, H., and **Hawley, R.G.** Role of *TLX1* in T-cell acute lymphoblastic leukaemia pathogenesis. *Br. J. Haematol.* 145: 140-143, 2009.
135. Riz, I., Lee, H.J., Baxter, K.K., Behnam, R., Hawley, T.S., and **Hawley, R.G.** Transcriptional activation by *TLX1/HOX11* involves Gro/TLE corepressors. *Biochem. Biophys. Res. Comm.* 380: 361-365, 2009.
136. Ramezani, A. and **Hawley, R.G.** Strategies to insulate lentiviral vector-expressed transgenes. In: *Lentivirus Gene Engineering Protocols, Second Edition, Methods Mol. Biol.* M. Federico, ed. (Humana Press Inc./Springer, Totowa, NJ). In press.
137. Ramezani, A. and **Hawley, R.G.** Correction of murine hemophilia A following nonmyeloablative

transplantation of hematopoietic stem cells engineered to encode an enhanced human factor VIII variant. Submitted.

138. Zweier, L.A., Hawley, T.S., Ramezani, A., Riz, I., Adler, R.L., Hickstein, D.D., and **Hawley, R.G.** Hematopoietic immortalizing function of the NKL-subclass homeobox gene *TLX1*. Submitted.

Journal Articles – Non-Refereed

1. Shulman, M.J., **Hawley, R.G.**, Ochi, A., Baczynsky, W.O.T., Collins, C., Pennell, N., Potash, M.J., Köhler, G., and Hozumi, N. Biochemical genetics of the mouse IgM system. *Biochem. Cell Biol.* 62: 217-224, 1984.
2. **Hawley, R.G.**, Trimble, W.S., Shulman, M.J., and Hozumi, N. Transposition of intracisternal A particle genes in mouse hybridomas. *J. Cell. Physiol. Suppl.* 3: 29-38, 1984.
3. Mintz, B., Covarrubias, L., and **Hawley, R.G.** Hematopoietic stem cells as potential vehicles for recombinant genes in prenatal mice. *Haematologica* 72 (Suppl. 6): 89-94, 1987.
4. **Hawley, R.G.** Immune cytokines in cancer. Laboratory Medicine Update Series, *Annals of the Royal College of Physicians and Surgeons of Canada* 24: 373-376, 1991.
5. **Hawley, R.G.** High titer retroviral vectors for efficient transduction of functional genes into murine hematopoietic stem cells. In: Gene Therapy for Neoplastic Diseases, *Ann. N.Y. Acad. Sci.* 716: 327-330, 1994.
6. **Hawley, R.G.** Hematopathology of interleukin-6-type cytokines. In: The Metcalf Forum: Polyfunctionality of Hemopoietic Regulators, *Stem Cells* 12 (Suppl. 1): 155-171, 1994.
 - Proceedings of the "cytokine consensus conference of the century" in honor of Professor Donald Metcalf on the occasion of his 65th birthday (Dublin Castle, Dublin, Ireland, September 7-9, 1994)
7. **Hawley, R.G.** Interleukin-6-type cytokines in myeloproliferative disease. In: Interleukin-6-type Cytokines, *Ann. N.Y. Acad. Sci.* 762: 294-307, 1995.
8. Mackiewicz, A., Górny, A., Laciak, M., Malicki, J., Murawa, P., Nowak, J., Wiznerowicz, M., **Hawley, R.G.**, Heinrich, P.C., and Rose-John, S. Gene therapy of human melanoma: immunization of patients with autologous tumor cells admixed with allogeneic melanoma cells secreting interleukin 6 and soluble interleukin 6 receptor. *Hum. Gene Ther.* 6: 805-811, 1995.
9. de Lanux, V.M., Reis, M.D., and **Hawley, R.G.** Establishment of myeloid progenitor lines from primary cultures of murine bone marrow cells expressing a v-Myb oncoprotein. *Int. J. Oncol.* 7: 555-563, 1995.
10. **Hawley, R.G.** Therapeutic potential of retroviral vectors. *Transfus. Sci.* 17: 7-14, 1996.
11. **Hawley, R.G.**, Lieu, F.H.L., Fong, A.Z.C., Goldman, S.J., Leonard, J.P., and Hawley, T.S. Retroviral vectors for production of interleukin 12 in the bone marrow to induce a graft-versus-leukemia effect. In: Interleukin 12: Cellular and Molecular Immunology of an Important Regulatory Cytokine, *Ann. N.Y. Acad. Sci.* 795: 341-345, 1996.
12. Wiznerowicz, M., Fong, A.Z.C., **Hawley, R.G.**, and Mackiewicz, A. Development of a double-copy bicistronic retroviral vector for human gene therapy. *Adv. Exp. Med. Biol.* 451: 441-447, 1998. (Proceedings of the 3rd European Symposium on Cancer Gene Therapy)
13. Mackiewicz, A., Karcinska, M., Wiznerowicz, M., Malicki, J., Nawrocki, S., Nowak, J., Murawa, P., Sibilska, E., Kowalczyk, D., Lange, A., **Hawley, R.G.**, and Rose-John, S. Immunogene therapy of human melanoma. Phase I/II clinical trial. *Adv. Exp. Med. Biol.* 451: 557-560, 1998. (Proceedings of the 3rd European Symposium on Cancer Gene Therapy)
14. Stewart, A.K. and **Hawley, R.G.** Adenovirus mediated immunogene therapy for the treatment of myeloma: pre-clinical and clinical studies. *Cancer Research Therapy and Control* 6: 175-179, 1998.
15. Wen, X.-Y., Stewart, A.K., Sooknanan, R.R., Henderson, G., Hawley, T.S., Reimold, A.M., Glimcher, L.H., Baumann, H., Malek, L.T., and **Hawley, R.G.** Identification of c-myc promoter binding protein and X-box binding protein 1 as interleukin-6 target genes in human multiple myeloma cells. *Int. J. Oncol.* 15: 173-178, 1999.

Web-based Journals – Refereed

1. Bunting, K.D. and **Hawley, R.G.** The Tao of hematopoietic stem cells: toward a unified theory of tissue regeneration? *ScientificWorldJournal* 2: 983-995, 2002.

Chapters in Books – Refereed and Non-Refereed

1. **Hawley, R.G.**, Shulman, M.J., and Hozumi, N. Intracisternal A particle genes: a family of *copA*-like transposable elements in *Mus musculus*. In: *Cancer Cells 2: Oncogenes and Viral Genes*. G.F. Vande Woude, A.J. Levine, W.C. Topp and J.D. Watson, eds. (Cold Spring Harbor Laboratory, Cold Spring Harbor, NY) 273-279, 1984.
2. Mintz, B., Covarrubias, L., and **Hawley, R.G.** Hematopoietic stem cell development with and without

- foreign genes. In: *ICSU Short Reports 7: Advances in Gene Technology: The Molecular Biology of Development*. R.W. Voellmy, ed. (Cambridge University Press, Cambridge, UK) 150-151, 1987.
3. **Hawley, R.G.**, Covarrubias, L., Hawley, T., and Mintz, B. Gene transfer with handicapped retroviral vectors in mice. In: *UCLA Symposia on Molecular and Cellular Biology, New Series 61: Recent Advances in Leukemia and Lymphoma*. R.P. Gale and D.W. Golde, eds. (Alan R. Liss, Inc., New York, NY) 567-573, 1987.
 4. Stewart, A.K., Dubé, I.D., and **Hawley, R.G.** Gene marking and the biology of hematopoietic cell transfer in human clinical trials. In: *Hematopoiesis and Gene Therapy, Blood Cell Biochem.* 8: L.J. Fairbairn and N. Testa, eds. (Kluwer Academic/Plenum Publishers, New York, NY) 243-268, 1999.
 5. Williams, D.A., Nienhuis, A.W., **Hawley, R.G.**, and Smith, F.O. Gene Therapy 2000. In: *Hematology 2000*, American Society of Hematology Education Program Book. G.P. Schechter, N. Berliner, M.J. Telen and J.L. Bajus, eds. (American Society of Hematology, Washington, DC) 376-393, 2000.
 6. Riz, I. and **Hawley, R.G.** Genomic stability in stem cells. In: *Regulatory Networks in Stem Cells*. V.K. Rajasekhar and M.C. Vemuri, eds. (Humana Press Inc./Springer, Totowa, NJ) 67-74, 2009.

Books Edited

1. Hawley, T.S. and **Hawley, R.G.** *Flow Cytometry Protocols, Second Edition, Methods Mol. Biol.* 263 (Humana Press Inc., Totowa, NJ), 2004.
(Reviewed by P.B. Gahan in *Cell. Biochem. Funct.* 23: 291, 2005; D.A. Lawrence in *Clin. Chem.* 51: 678-679, 2005; A.A. Arbini in *Leuk. Res.* 29: 109-110, 2005; and by J. Olweus in *Scand. J. Clin. Lab. Invest.* 65: 175, 2005)
2. Hawley, T.S. and **Hawley, R.G.** *Flow Cytometry Protocols, Third Edition, Methods Mol. Biol.* (Humana Press Inc./Springer, Totowa, NJ). Invited.

Editorials

1. Kerbel, R.S. and **Hawley, R.G.** Interleukin 12: newest member of the antiangiogenesis club. *J. Natl. Cancer Inst.* 87: 557-559, 1995.
2. **Hawley, R.G.** National stem cell resource: stem cells find a niche. *Stem Cells* 19: 475-476, 2001.
3. **Hawley, R.G.** and Sobieski, D.A. Stem cells in the news. *Stem Cells* 20: 103-104, 2002.
4. **Hawley, R.G.** and Sobieski, D.A. Somatic stem cell plasticity: to be or not to be. *Stem Cells* 20: 195-197, 2002.
5. **Hawley, R.G.** and Sobieski, D.A. Of mice and men: the tale of two therapies. *Stem Cells* 20: 275-278, 2002.
6. **Hawley, R.G.** and Sobieski, D.A. Stem cell bouillabaisse-potpourri. *Stem Cells* 20: 360-363, 2002.
7. **Hawley, R.G.** and Sobieski, D.A. Germline stem cells (the origin of teenage mutant ninja turtles?). *Stem Cells* 20: 478-481, 2002.
8. **Hawley, R.G.** and Sobieski, D.A. Stem cell molecular blueprint: "life, the universe and everything". *Stem Cells* 21: 1-4, 2003.
9. Civin, C.I., Gewirtz, A.M., and **Hawley, R.G.** Stem Cells: 21 years old, with the best yet to come. *Stem Cells* 21: 513, 2003.
10. Civin, C.I., Gewirtz, A.M., and **Hawley, R.G.** Editors' Note for 2004. *Stem Cells* 22: 1, 2004.
11. Civin, C.I., Gewirtz, A.M., **Hawley, R.G.**, and Goodell, M.A. Advancing the fast-paced field of stem cell research: Stem Cells increases from 6 to 10 issues in its 23rd year of publication. *Stem Cells* 23: 1-2, 2005.
12. Civin, C.I., Gewirtz, A.M., **Hawley, R.G.**, and Goodell, M.A. Open access, rapid publishing: no longer a thing of the future. *Stem Cells* 23: 456-457, 2005.
13. Civin, C.I., Gewirtz, A.M., **Hawley, R.G.**, and Goodell, M.A. Stem Cells journal: robust growth in 2005. *Stem Cells* 24: 1-2, 2006.
14. Civin, C.I., Gewirtz, A.M., Goodell, M.A., **Hawley, R.G.**, and Murphy, M.J. Editorial retraction. *Stem Cells* 24: 804, 2006.

Abstracts

1. **Hawley, R.G.**, Shulman, M.J., Murialdo, H., Gibson, D., and Hozumi, N. Novel control of immunoglobulin gene expression. *J. Cell. Biochem. Suppl.* 6: 298, 1982.
2. Ochi, A., Hawley, T., **Hawley, R.**, Tisch, R., and Hozumi, N. Regulated expression of cloned immunoglobulin genes. *J. Cell. Biochem. Suppl.* 8A: 136, 1984.
3. **Hawley, R.G.**, Shulman, M.J., and Hozumi, N. Intracisternal A particle genes: A family of *copia*-like transposable elements in *Mus musculus*. *J. Cell. Biochem. Suppl.* 8B: 156, 1984.
4. **Hawley, R.G.**, Covarrubias, L., Hawley, T., and Mintz, B. Handicapped retroviral vectors efficiently

- transduce foreign genes into hematopoietic stem cells. *J. Cell. Biochem. Suppl.* 11A: 234, 1987.
5. **Hawley, R.G.** Interleukin networks in B-cell differentiation and neoplasia. In: *Cancer in Ontario 1988*. J.O. Godden, ed. (The Ontario Cancer Treatment and Research Foundation, Toronto), 178, 1988.
 6. **Hawley, R.G.** and Hawley, T.S. Retroviral transfer of interleukin-1 α and interleukin-6 genes into mouse hematopoietic stem cells. *Cytokine* 1: 127, 1989.
 7. **Hawley, R.G.** Role of interleukin-6 in B-cell neoplasia. In: *Cancer in Ontario 1989*. J.O. Godden, ed. (The Ontario Cancer Treatment and Research Foundation, Toronto), 145, 1989.
 8. **Hawley, R.G.** Regulation of hematopoiesis by interleukin-1 α . In: *Cancer in Ontario 1989*. J.O. Godden, ed. (The Ontario Cancer Treatment and Research Foundation, Toronto), 146, 1989.
 9. **Hawley, R.G.** Cytokine networks in leukemia. In: *Cancer in Ontario 1990*. J.O. Godden, ed. (The Ontario Cancer Treatment and Research Foundation, Toronto), 241, 1990.
 10. **Hawley, R.G.** Identification of new genes with a viral oncogene probe. In: *Cancer in Ontario 1990*. J.O. Godden, ed. (The Ontario Cancer Treatment and Research Foundation, Toronto), 242, 1990.
 11. **Hawley, R.G.**, Fong, A.Z.C., Burns, B.F., and Hawley, T.S. Developmental potential of hematopoietic stem cells expressing retroviral IL-6. *J. Cell. Biochem. Suppl.* 16C: 65, 1992.
 12. **Hawley, R.G.**, Fong, A.Z.C., Clark, S.C., Ngan, B., and Hawley, T.S. Hematopoietic and systemic effects of dysregulated interleukin-11 expression. *J. Cell. Biochem. Suppl.* 17B: 63, 1993.
 13. DeCoteau, J., Griesser, H., **Hawley, R.G.**, Sheridan, B.L., Pinkerton, P.H., and Reis, M.D. SBH-1, a novel Reed-Sternberg-like cell line with a t(14;18) not involving the BCL-2 locus. *Blood* 82 (Suppl. 1): 524a, 1993.
 14. **Hawley, R.G.**, Fong, A.Z.C., Ngan, B.Y., Reis, M., Keller, G., Lu, M., and Hawley, T.S. Transformation of hematopoietic progenitors by the *HOX11* gene. *Exp. Hematol.* 22: 883, 1994.
 15. Okada, T. and **Hawley, R.G.** Adhesion molecules involved in the metastasis of B-cell hybridomas to the bone marrow. *Clin. Exp. Metastasis* 12: 36, 1994.
 16. Ahmed, A., Corbel, S., **Hawley, R.G.**, Bennardo, T., Machavoine, F., Dy, M., Vacel, B., and Turhan, A.G. The use of newly developed stem cell vectors allows efficient BCR-ABL (p210) gene transfer and leads to growth factor-independence of the pluripotent murine cell line FDCEP-mix. *Blood* 84 (Suppl. 1): 139a, 1994.
 17. Millan, C.L. B., **Hawley, R.G.**, and Carter, R.F. Expression of canine factor IX by transduced long-term culture adherent cells, and their engraftment in the canine bone marrow compartment following autologous transplantation. *Blood* 84 (Suppl. 1): 100a, 1994.
 18. Decoteau, J., Griesser, H., White, C., Naumov, A., Roback, D., Fong, A., **Hawley, R.G.**, Pinkerton, P.H., and Reis, M.D. Immunoglobulin light chain protein and mRNA co-expression in the Reed-Sternberg cell line SBH-1. *Blood* 84 (Suppl. 1): 442a, 1994.
 19. **Hawley, R.G.** Retroviral gene delivery. *J. Cell. Biochem. Suppl.* 19A: 167, 1995.
 20. Fletcher, F.A., Juan, T., Lacey, D., Yan, X.-Q., Hartley, C., McElroy, T., Sun, Y., Hill, D., **Hawley, R.**, and McNiece, I. Chronic over-expression of murine Flt3/Flk2 ligand in mice results in increased circulating white blood cell levels and abnormal lymphoreticular cell infiltrates associated with splenic fibrosis. *Blood* 86 (Suppl. 1): 21a, 1995.
 21. Fletcher, F.A., Juan, T., Yan, X.-Q., Hartley, C., McElroy, T., Sun, Y., **Hawley, R.**, and McNiece, I. Replacement gene therapy phenotypically corrects the fat deposition defect in *ob/ob* mice resulting in normalized body weight. *Blood* 86 (Suppl. 1): 241a, 1995.
 22. Cheng, L., Du, C., Murray, D., Chen, B.P., and **Hawley, R.G.** A GFP reporter system to assess retroviral-mediated gene transfer and expression in viable human hematopoietic progenitors. *Exp. Hematol.* 25: 880, 1997.
 23. Stewart, A.K., Hawley, T.S., Li, Z.H., Fong, A., Trudell, S., Cappe, D., Mandelbaum, S., Dodgson, C. and **Hawley, R.G.** Immunogene therapy with interleukin 12 (IL-12), B7-1 and Flt3 ligand (Flt3L) in a murine myeloma model: IL-12 and B7-1 expressing cells confer protective immunity. *Blood* 90 (Suppl. 1): 358a, 1997.
 24. Stewart, A.K., Trudell, S., Buckstein, R., Dubé, I.D., Nanji, S., Nayar, R., Dodgson, C., Dessureault, S., Gallinger, S., Graham, F.L., **Hawley, R.G.**, Thomas, T., and Sutherland, D.R. Plasma cell vaccine production: negative selection, adenoviral infection and *in vivo* expression of vector derived interleukin 2 (IL-2). *Blood* 90 (Suppl. 1): 358a, 1997.
 25. Yan, X.-Q., Lacey, D., Chen, Y., Saris, C., Mu, S., Hill, D., **Hawley, R.G.**, and Fletcher, F.A. Ectopic over-expression of c-mpl by retroviral-mediated gene transfer suppressed megakaryopoiesis but enhanced erythropoiesis in mice. *Blood* 90 (Suppl. 1): 554a, 1997.
 26. Claudio, J.O., Liew, C.C., Dempsey, A.A., Cukerman, E., Iscove, N.N., Stewart, A.K., and **Hawley, R.G.** Novel sequence-tagged clones expressed in a human CD34⁺ hematopoietic progenitor cell line identified by *in silico* subtraction. *Blood* 90 (Suppl. 1): 154b, 1997.

27. Stewart, A.K., Hawley, T.S., Li, Z.H., Mandelbaum, S., Dodgson, C., Cappe, D., Hitt, M., Graham, F.L., and **Hawley, R.G.** Tricistronic viral vectors coexpressing human interleukin-12 (IL12) and B7-1 (CD80) for the immunotherapy of myeloma. *Proc. Amer. Assoc. Cancer Res.* 39: 652, 1998.
28. Hogan, C.J., Shpall, E.J., **Hawley, R.G.**, and Keller, G. Maintenance of engraftable progenitor cells with concomitant expansion of CFC *in vitro*. *Blood* 92 (Suppl. 1): 113a, 1998.
29. Dunussi-Joannopoulos, K., Runyon, K., Schaub, R.G., **Hawley, R.G.**, and Leonard, J.P. Interleukin-12 gene immunotherapy induces effective prophylactic and therapeutic immunity in murine acute myeloid leukemia (AML). *Blood* 92 (Suppl. 1): 313a, 1998.
30. Li, Z.H., Plowright, E.E., Hawley, T.S., Bergsagel, P.L., Chesi, M., **Hawley, R.G.**, and Stewart, A.K. An activating mutation of the myeloma associated oncogene fibroblast growth factor receptor 3 (FGFR3) has hematopoietic transforming potential in mice. *Blood* 92 (Suppl. 1): 383a, 1998.
31. Plowright, E.E., Li, Z.H., Bergsagel, P.L., Chesi, M., **Hawley, R.G.**, and Stewart, A.K. An activating mutation of the myeloma associated oncogene fibroblast growth factor receptor 3 (FGFR3) promotes interleukin-6 (IL-6) independence and up-regulation of Bcl-x_L. *Blood* 92 (Suppl. 1): 383a, 1998.
32. Zhu, Y.X., Suen, T.C., Zhang, N., Lu, M., Goss, P.E., and **Hawley, R.G.** The HOX11 oncoprotein represses transcription. *Blood* 92 (Suppl. 1): 573a, 1998.
33. Wen, X.-Y., Stewart, A.K., Hawley, T.S., Malek, L., Sooknanan, R., Henderson, G., and **Hawley, R.G.** Identification of IL-6-induced cDNAs in myeloma cells by subtractive transcriptional amplification of mRNA (STAR). *Blood* 92 (Suppl. 1): 681a, 1998.
34. Donahue, R.E., Rowe, T.K., Sorrentino, B.P., **Hawley, R.G.**, An, D.S., Chen, I.S.Y., and Wersto, R.P. Transduction kinetics of non-human primate immunoselected CD34⁺ cells using retroviral and lentiviral vectors that express the green fluorescent protein. *Blood* 92 (Suppl. 1): 376b, 1998.
35. Li, Z.H., Mandelbaum, S., Hawley, T.S., **Hawley, R.G.**, and Stewart, A.K. Improved therapeutic outcome following combination immunogene vaccination therapy in murine myeloma. *Blood* 94 (Suppl. 1): 602a, 1999. (Oral Presentation)
36. Ramezani, A., Hawley, T.S., and **Hawley, R.G.** Lentiviral vector design for long-term transgene expression in human hematopoietic stem cells. *Mol. Ther.* 1: S138, 2000. (Oral Presentation)
37. Gao, Z., Golob, J., **Hawley, R.G.**, Civin, C.I., and Cheng, L. Human hematopoietic stem cell transduction by MSCV-based oncoretroviral vectors and HIV-based lentiviral vectors: a direct comparison. *Mol. Ther.* 1: S99, 2000.
38. Dorrell, C., Pereira, D.S., **Hawley, R.G.**, and Dick, J.E. Overexpression of the H-ras oncogene in primary primitive human hematopoietic cells alters proliferation and differentiation. *Exp. Hematol.* 28 (Suppl. 1): 104, 2000.
39. Gao, Z., Golob, J., **Hawley, R.G.**, Tanavde, V.M., Civin, C.I., and Cheng, L. Sustained and high level transgene expression in human hematopoietic stem cells transduced by an MSCV/HIV hybrid lentiviral vector. *Blood* 96 (Suppl. 1): 429a, 2000.
40. Zuberek, K., Runyon, K., **Hawley, R.G.**, Goad, B., Leonard, J.P., and Dunussi-Joannopoulos, K. The novel antitumor activity of the chemokine stromal cell-derived factor-1B (SDF-1B) leads to T cell dependent tumor rejection and antitumor memory responses. *Blood* 96 (Suppl. 1): 456a, 2000.
41. Owens, B., Allen, T.D., Zhu, Y.-X., Hawley, T.S., and **Hawley, R.G.** Functional interactions between the HOX11 oncoprotein and TALE cofactors. *Proc. Amer. Assoc. Cancer Res.* 42: 334, 2001.
42. Ramezani, A., Hawley, T.S., and **Hawley, R.G.** HIV-based HUMV lentiviral vectors for protection against position effect variegation and transgene silencing. *Mol. Ther.* 3: S127, 2001. (Oral Presentation)
43. Bradley, H.L., Owens, B., Hawley, T.S., Sorrentino, B.P., **Hawley, R.G.**, and Bunting, K.D. Alteration of myeloid differentiation by ectopic retroviral P-glycoprotein expression in immortalized bone marrow-derived cells *in vitro*. *Mol. Ther.* 3: S385, 2001.
44. Yamada, K., Ramezani, A., **Hawley, R.**, and Walsh, C. Functional correction of Fanconi anemia group A side population stem cells using a novel lentiviral vector. *Exp. Hematol.* 29 (Suppl. 1): 15, 2001.
45. Dorrell, C., **Hawley, R.G.**, Squire, J.A., and Dick, J.E. Expression of the HOX11 oncogene in primary primitive human hematopoietic cells blocks myeloid differentiation and impairs the response to DNA damage. *Blood* 98 (Suppl. 1): 96a, 2001.
46. Dorrell, C., Pereira, D.S., **Hawley, R.G.**, and Dick, J.E. The level of Ras signaling in primary primitive human hematopoietic cells influences their proliferative and differentiative fate. *Blood* 98 (Suppl. 1): 574a, 2001.
47. Yamada, K., Ramezani, A., **Hawley, R.G.**, Ebell, W., Arwert, F., and Walsh, C.E. Phenotypic correction of Fanconi anemia group A hematopoietic cells using lentiviral vectors. *Blood* 98 (Suppl. 2): 412b, 2001.
48. Owens, B.M., Hawley, T.S., and **Hawley, R.G.** Mechanisms of HOX11-mediated transformation. *Proc. Amer. Assoc. Cancer Res.* 43: 1132, 2002.
49. Telford, W.G., Hawley, T.S., and **Hawley, R.G.** Analysis of violet-excited fluorochromes by flow cytometry

- using a violet diode laser. International Society for Analytical Cytology XXI International Congress, San Diego, California, May 2002. *Cytometry* (Suppl. 11): 123, 2002.
50. Ramezani, A., Hawley, T.S., and **Hawley, R.G.** Lentiviral vectors utilizing the chicken β -globin 5'HS4 insulator and the human interferon- β scaffold attachment region for high level and sustained factor VIII gene expression. *Mol. Ther.* 5: S425, 2002. (Oral Presentation; American Society of Gene Therapy Travel Award to A. Ramezani)
 51. Yamada, K., Ramezani, A., **Hawley, R.G.**, Ebell, W., Arwert, F., and Walsh, C.E. Phenotypic correction of Fanconi anemia hematopoietic stem cells using lentiviral vectors. *Mol. Ther.* 5: S396, 2002.
 52. Owens, B.M., Spain, L.M., Hawley, T.S., and **Hawley, R.G.** HOX11 arrests thymocyte development at the double negative stage of T cell differentiation. *Blood* 100 (Suppl. 1): 150a, 2002. (Oral Presentation)
 53. Yu, W.M., Hawley, T.S., **Hawley, R.G.**, and Qu, C.K. SHP-2 tyrosine phosphatase overrides the role of SHP-1 phosphatase in interleukin-3 signaling, functioning in both catalytic dependent and independent manners. *Blood* 100 (Suppl. 1): 518a, 2002.
 54. Bradley, H.L., Hawley, T.S., Ramezani, A., Stetler-Stevenson, W.G., Stetler-Stevenson, M., **Hawley, R.G.**, and Bunting, K.D. Autocrine inhibition of M1 myeloid differentiation by constitutive expression of tissue inhibitor of matrix metalloproteinase-1. *Blood* 100 (Suppl. 1): 734a, 2002.
 55. Ramezani, A., Hawley, T.S., and **Hawley, R.G.** Development of improved lentiviral vectors for hemophilia A gene therapy. *Blood* 100 (Suppl. 1): 869a, 2002.
 56. Eaker, S.S., Hawley, T.S., and **Hawley, R.G.** Isolation of human SCID-repopulating cells in umbilical cord blood and mobilized peripheral blood samples using the side population assay. *Blood* 100 (Suppl. 2): 148b, 2002.
 57. Riz, I., Akimov, S.S., Chase, M.B., Ramezani, A., Hawley, T.S., and **Hawley, R.G.** Maturation-specific expression of the ITM2A gene is an integrated response to differentiation and proliferation signals. *Blood* 100 (Suppl. 2): 163b, 2002.
 58. Moayeri, M., Ramezani, A., Myrup, A.C., Wagner, S.J., Morgan, R.A., Hawley, T.S., and **Hawley, R.G.** Toward cell therapy for hemophilia A: recombinant factor VIII production from blood endothelial cells. *Mol. Ther.* 7: S393, 2003.
 59. **Hawley, R.G.**, Eaker, S.S., McKeague, W.J., Molete, J.M., Soukharev, S., and Hawley, T.S. Regulatable HOX11-mediated immortalization of hematopoietic precursors from mouse embryonic stem cells. *Blood* 102 (Suppl. 1): 167a, 2003. (Oral Presentation)
 60. **Hawley, R.G.**, Moayeri, M., Ramezani, A., Morgan, R.A., and Hawley, T.S. Toward safe and efficient hemophilia A gene therapy. *Blood* 102 (Suppl. 1): 742a, 2003.
 61. Moayeri, M., Ramezani, A., Morgan, R.A., Hawley, T.S., and **Hawley, R.G.** Phenotypic correction of hemophilic mice using hematopoietic stem cells transduced with an MSCV-based oncoretroviral vector. *Mol. Ther.* 9: S71, 2004.
 62. Ramezani, A., Hawley, T.S., and **Hawley, R.G.** Amelioration of gammaretroviral silencing during embryonic stem cell-derived hematopoiesis: preclinical assessment of safety-improved vectors. *Mol. Ther.* 11: S36, 2005.
 63. **Hawley, R.G.**, Moayeri, M., and Hawley, T.S. Correction of murine hemophilia A by hematopoietic stem cell gene therapy. *Blood* 106 (Suppl. 1): 376a, 2005.
 64. Akimov, S.S., Ramezani, A., Hawley, T.S., and **Hawley, R.G.** Immortalization of human umbilical cord blood-derived hematopoietic progenitor cells. *Blood* 106 (Suppl. 1): 488a, 2005.
 65. Riz, I., Akimov, S.S., Eaker, S.S., Marino-Ramírez, L., Landsman, D., Hawley, T.S., and **Hawley, R.G.** TLX1/HOX11-mediated disruption of hematopoietic differentiation programs. *Blood* 106 (Suppl. 1): 840a, 2005.
 66. Ramezani, A., Hawley, T.S., and **Hawley, R.G.** Toward hemophilia A gene therapy: safety-modified gammaretroviral vector expressing a secretion-enhanced FVIII molecule with reduced immunogenicity. *Mol. Ther.* 15 (Suppl. 1): S364, 2007.
 67. Riz, I., Baxter, K.K., Lee, H.J., Behnam, R., Hawley, T.S., and **Hawley, R.G.** Role of the T-cell acute lymphoblastic leukemia oncoprotein TLX1/HOX11 in chromatin dynamics and gene regulatory networks. 49th American Society of Hematology Annual Meeting, Atlanta, GA, December 8-11, 2007. *Blood* 110 (Suppl. 1): 25a, 2007. (Oral Presentation)
 68. Ramezani, A., Hawley, T.S., and **Hawley, R.G.** Correction of murine hemophilia A following non myeloablative transplantation of hematopoietic stem cells engineered to encode a secretion-enhanced FVIII molecule with reduced immunogenicity. *Mol. Ther.* 16 (Suppl. 1): S330, 2008.

Major Invited Speeches

Local and Regional Invited Lectures

1. **Hawley, R.G.** Retroviral vectors for studies of B-cell development, Department of Medicine, University of Ottawa, Research Tea, January 7, 1988.
2. **Hawley, R.G.** Retroviral vectors for gene transfer in animals: targetting expression to differentiating B-cells, Kingston Cancer Centre, Kingston, Ontario, March 24, 1988.
3. **Hawley, R.G.** Recent advances in molecular oncology, Ottawa Cancer Centre, Civic Division, Ottawa Citywide Oncology Rounds, April 25, 1989.
4. **Hawley, R.G.** Molecular mechanisms of oncogenesis, Ottawa Cancer Centre, Civic Division, E.N.T. Rounds, June 8, 1989.
5. **Hawley, R.G.** Oncogenes and anti-oncogenes, Ottawa General Hospital, Department of Laboratory Medicine, Lymphoma Rounds, January 15, 1990.
6. **Hawley, R.G.** The role of interleukins in hematopoiesis and neoplasias, Ottawa Civic Hospital, Department of Laboratory Medicine, Grand Rounds, May 18, 1990.
7. **Hawley, R.G.** Nonmalignant hematologic disorders in mice transplanted with genetically-modified bone marrow, Department of Biochemistry, University of Ottawa, October 24, 1990.
8. **Hawley, R.G.** Cytokines in normal and leukemic hematopoiesis, Department of Medical Biophysics, University of Toronto, April 16, 1991.
9. **Hawley, R.G.** Hematopoiesis and metastasis: why the bone marrow? Division of Cancer Research, Sunnybrook Health Science Centre, Toronto, Ontario, April 17, 1991.
10. **Hawley, R.G.** Cell adhesion molecules in bone marrow metastasis, Lake Ontario Metastasis Group Meeting, Sunnybrook Health Science Centre, Toronto, Ontario, November 29, 1991.
11. **Hawley, R.G.** Hematopoietic and pathophysiologic effects of interleukin-6, Department of Biochemistry, McMaster University, Hamilton, Ontario, February 18, 1992.
12. **Hawley, R.G.** Leukemia and the disruption of normal blood cell development, Research Committee of the Board of Trustees, Sunnybrook Health Science Centre, Toronto, Ontario, March 12, 1992.
13. **Hawley, R.G.** The role of IL-6 in myeloid leukemoid reaction and anemia of chronic disease, Division of Trauma Research, Sunnybrook Health Science Centre, Toronto, Ontario, March 24, 1992.
14. **Hawley, R.G.** Experimental leukemia: the role of autocrine and paracrine growth stimulatory mechanisms, Toronto-Bayview Cancer Centre, Oncology Grand Rounds, April 1, 1992.
15. **Hawley, R.G.** Experimental models of hematologic disease: genetically manipulating the bone marrow, Department of Chemistry and Biochemistry, Laurentian University, Sudbury, Ontario, February 10, 1993.
16. **Hawley, R.G.** Comparative biologic properties of IL-6 and IL-11, The Ontario Cancer Institute/Princess Margaret Hospital Immunology Group Meeting (Organizer, Tak W. Mak), Toronto, Ontario, March 10, 1993.
17. **Hawley, R.G.** Murine bone marrow chimeras for toxicity studies of biopharmaceuticals: results with interleukin-6, Cangene Corporation, Mississauga, Ontario, March 25, 1993.
18. **Hawley, R.G.** Basic science and preclinical studies of interleukins 6 and 11, Clinical Epidemiology Rounds, Sunnybrook Health Science Centre, Toronto, Ontario, September 1, 1993.
19. **Hawley, R.G.** Precursor T and B acute lymphoblastic leukemia/lymphoma induced by activated H-ras in murine bone marrow transplant recipients, Metro Toronto Basic Science of Lymphoma Seminar Series, Sunnybrook Health Science Centre, Toronto, Ontario, October 27, 1993.
20. **Hawley, R.G.** "Cytokine storms" and the yang of hematopoiesis, Terry Fox Immunology and Cancer Research Seminar Series, Hospital for Sick Children, Toronto, Ontario, November 10, 1993.
21. **Hawley, R.G.** The *HOX11* homeobox-containing gene of human leukemia efficiently immortalizes murine hematopoietic precursors but infrequently induces leukemia in mice, Academic Half-Day in Hematology, Sunnybrook Health Science Centre, Toronto, Ontario, January 29, 1994.
22. **Hawley, R.G.** Modifying hematopoietic and embryonic stem cell function by retroviral gene delivery, Genetics Rounds, McMaster University, Hamilton, Ontario, February 4, 1994.
23. **Hawley, R.G.** From experimental hematology/oncology to molecular medicine, Toronto-Sunnybrook Cancer Centre, Oncology Grand Rounds, September 28, 1994.
24. **Hawley, R.G.** *Bcl-x*: a cytokine-inducible gene involved in tumor cell survival, Terry Fox Immunology and Cancer Research Seminar Series, Hospital for Sick Children, Toronto, Ontario, March 29, 1995.
25. **Hawley, R.G.** Multiple myeloma as a paradigm of bone marrow metastasis: prospects for gene therapy, The University of Western Ontario Molecular Biology Seminar Series, London, Ontario, April 13, 1995.
26. **Hawley, R.G.** Retroviral gene transfer into hematopoietic progenitors, Hematopoiesis Research Department, Hemosol Inc., Etobicoke, Ontario, April 18, 1995.
27. **Hawley, R.G.** Cancer research at the Sunnybrook Health Science Centre, Toronto Hadassah-WIZO, Toronto, Ontario, October 30, 1995.

28. **Hawley, R.G.** Retroviral vector design, Metro Toronto Basic Science of Lymphoma Seminar Series, Sunnybrook Health Science Centre, Toronto, Ontario, November 22, 1995.
29. **Hawley, R.G.** Murine stem cell virus retroviral vector system (Inaugural Lecture), The Toronto Gene Therapy Network Seminar Series, Princess Margaret Hospital, Toronto, Ontario, April 16, 1996.
30. **Hawley, R.G.** Hematopoietic immortalization technology based on *HOX11/TCL3* of T-ALL, Leukemia Rounds, Toronto General Hospital/Princess Margaret Hospital Joint Oncology Program, January 13, 1997.
31. **Hawley, R.G.** Transforming function of the *HOX11/TCL3* gene of T-ALL, Academic Half-Day in Hematology, Sunnybrook Health Science Centre, Toronto, Ontario, February 8, 1997.
32. **Hawley, R.G.** FACS-based reporter systems for measuring gene transfer and expression, Ontario Flow Cytometry Users Association Meeting, Hospital for Sick Children, Toronto, Ontario, March 20, 1997.
33. **Hawley, R.G.** Translational Research: Immunotherapy of multiple myeloma, Basic Science Rounds, Toronto General Hospital/Princess Margaret Hospital Joint Oncology Program, July 23, 1997.
34. **Hawley, R.G.** Retrovirus-mediated gene therapy (Session Chair, Gene Therapy), Department of Medical Biophysics Annual Retreat, Rama, Ontario, October 19, 1997.
35. **Hawley, R.G.** The pharmacology of cancer gene therapy: separating fact from fiction, Department of Pharmacology and Toxicology, Queen's University, Kingston, Ontario, October 27, 1997.
36. **Hawley, R.G.** Novel sequence-tagged clones expressed in a human CD34⁺CD38^{lo} hematopoietic progenitor cell line, Senior Investigators Meeting, Toronto General Hospital-Ontario Cancer Institute/Princess Margaret Hospital, February 6, 1998.
37. **Hawley, R.G.** Development of new gene therapy vectors, Amgen Research Institute/Ontario Cancer Institute Technology Thinktank on the Latest Developments and Ideas Concerning New Scientific Technologies, Toronto, Ontario, March 4, 1998.
38. **Hawley, R.G.** Control and disruption of blood cell development, Human Genome Sciences, Gaithersburg, MD, March 17, 1999.
39. **Hawley, R.G.** Blood stem cells in research and medicine, American Medical Writers Association/D.C. Science Writers Association, Holland Laboratory, American Red Cross, April 17, 1999.
40. **Hawley, R.G.** Gene transfer approaches to hematopoietic stem cell function and fate, Department of Anatomy and Cell Biology, The George Washington University Medical Center, Washington, DC, September 8, 1999.
41. **Hawley, R.G.** Hematopoietic differentiation blockade by the HOX11 homeoprotein, Hematopoiesis and Immunology Society, Johns Hopkins University School of Medicine, Baltimore, MD, December 10, 1999.
42. **Hawley, R.G.** Insights into hematopoiesis from stem cell gene transfer studies, Coriell Institute for Medical Research, Camden, NJ, February 15, 2000.
43. **Hawley, R.G.** Stem cell gene transfer: embryonic progress with complex viruses, Hematology Branch, National Heart, Lung, and Blood Institute, National Institutes of Health, Bethesda, MD, June 28, 2000.
44. **Hawley, R.G.** MSCV-based vectors for genomics and gene therapy, National Human Genome Research Institute Division of Intramural Research Seminar Series, National Institutes of Health, Bethesda, MD, February 15, 2001.
45. **Hawley, R.G.** Flow cytometry approaches to hematopoietic stem cell identification and genetic modification, National Institutes of Health, Flow Cytometry User Group Meeting, Bethesda, MD, September 25, 2002.
46. **Hawley, R.G.** Gene transfer approaches to hematopoietic stem cell function and therapy, Hematopoiesis and Immunology Society, Johns Hopkins University School of Medicine, Baltimore, MD, November 22, 2002.
47. **Hawley, R.G.** Performance- and safety-enhanced lentiviral vectors, VIRxSYS Corporation, Gaithersburg, MD, April 17, 2003.
48. **Hawley, R.G.** Gene transfer approaches to stem cell function and therapy, Faculty Research Symposium: Human Stem Cells (Symposium Co-organizer), 8th Annual George Washington University Medical Center Research Day, Washington, DC, April 25, 2003.
49. **Hawley, R.G.** Gene therapy approaches for hemophilia A (Inaugural Lecture), Gene Therapy Interest Group, National Institutes of Health, Bethesda, MD, September 11, 2003.
50. **Hawley, R.G.** Stem cell engineering: mechanistic insights and clinical applications, Department of Pathology, University of Maryland School of Medicine, Baltimore, MD, December 18, 2003.
51. **Hawley, R.G.** The science of stem cells, School of Medicine and Health Sciences' Ethics Night Primer, The George Washington University Medical Center, March 22, 2004.
52. **Hawley, R.G.** Stem cell biology: toward regenerative medicine. Alumni Medical School, The George Washington University Medical Center, June 25, 2004.
53. **Hawley, R.G.** Genetic modification of hematopoietic stem cells using FACS-selectable reporters. Flow

Cytometry Core Facility Seminar Series, Department of Microbiology, University of Virginia Health System, Charlottesville, VA, February 11, 2005.

54. **Hawley, R.G.** Stem cell biology: toward regenerative medicine. Alumni Medical School, The George Washington University Medical Center, June 24, 2005.
55. **Hawley, R.G.** T-cell acute lymphoblastic leukemia: evolving concepts and experimental models. Pathology Grand Rounds, Children's Memorial Hospital, Chicago, IL, August 25, 2005.
56. **Hawley, R.G.** Stem cell engineering. Chesapeake Cytometry Consortium Annual Meeting, Johns Hopkins University, Montgomery County Campus, Rockville, MD, September 23, 2005.
57. **Hawley, R.G.** Research applications of retroviral vectors. Viral Vectors Symposium, Johns Hopkins University School of Medicine, Baltimore, MD, May 9, 2006.
58. **Hawley, R.G.** Lentiviral vectors. Viral Vectors Symposium, Johns Hopkins University School of Medicine, Baltimore, MD, May 9, 2006.
59. **Hawley, R.G.** Stem cell research. Alumni Medical School, The George Washington University Medical Center, June 14, 2006.
60. **Hawley, R.G.** Reverse genetic, genomic, bioinformatic and proteomic approaches to TLX1/HOX11 oncoprotein function. The Cancer Institute, Department of Biochemistry and Molecular Biology, and McCormick Genomics Center, The George Washington University Medical Center, October 31, 2006.
61. **Hawley, R.G.** Engineering stem cell fate and function. Lecture on Stem Cell Research Applications, Human Embryonic Stem Cell Course, Stem Cell Institute, University of Minnesota, Minneapolis, MN, March 28, 2007.
62. **Hawley, R.G.** Stem cell research: toward regenerative medicine. Alumni Medical School, The George Washington University Medical Center, June 27, 2007.
63. **Hawley, R.G.** Retroviral vector technology for basic and translational science. Department of Microbiology, Immunology and Tropical Medicine, The George Washington University Medical Center, September 26, 2007.
64. **Hawley, R.G.** Stem cell biology: toward regenerative medicine. Research and Discovery Frontiers of Applied Life Sciences Session, GW Presidential Inauguration 2007, November 14, 2007.

National and International Invited Lectures

1. **Hawley, R.G.** Handicapped retroviral vectors: an experimental model for human gene transfer, Gordon Research Conference, Chemotherapy of Experimental and Clinical Cancer, Colby-Sawyer College, New London, NH, July 23, 1987.
2. **Hawley, R.G.** The molecular biology story, 12th Clinical Cancer Research Conference, Molecular Biology of Cancer, The Ontario Cancer Treatment and Research Foundation, Lake Couchiching, Ontario, April 23, 1990.
3. **Hawley, R.G.** Interleukins in cancer, Growth Factors in Cancer Symposium, Canadian Association of Medical Oncologists, Royal College of Physicians and Surgeons of Canada Annual Meeting, Toronto, Ontario, September 14, 1990.
4. **Hawley, R.G.** Hematopoietic and systemic effects of dysregulated interleukin-11 expression, Keystone Symposium, Cytokines and Cytokine Receptors, Keystone, CO, February 6, 1993. Workshop: Cytokines and Hematopoiesis.
5. **Hawley, R.G.** Long-term reconstitution of mice with hematopoietic stem cells producing rhIL-11: chronic high circulating rhIL-11 levels selectively stimulate platelet excess, Genetics Institute, Cambridge, MA, February 18, 1993.
6. **Hawley, R.G.** The mouse as a model for human hematologic disease, Visiting Professor in the Division of Hematology and Internal Medicine, Mayo Clinic, Rochester, MN, March 18, 1993.
7. **Hawley, R.G.** An improved retroviral vector for high efficiency gene transfer into hematopoietic stem cells, The New York Academy of Sciences Conference on Gene Therapy for Neoplastic Diseases, Washington, DC, June 28, 1993.
8. **Hawley, R.G.** Immortalization of primitive murine hematopoietic cells by retroviral gene delivery, Genetics Institute, Cambridge, MA, November 18, 1993.
9. **Hawley, R.G.** Genetically modified stem cells in hematopoiesis and leukemia, The Institute for Cancer Research, Fox Chase Cancer Center, Philadelphia, PA, February 17, 1994.
10. **Hawley, R.G.** Biology and biochemistry of interleukin-6-type cytokines, Department of Radiation Oncology, Massachusetts General Hospital, Harvard Medical School, Boston, MA, May 13, 1994.
11. **Hawley, R.G.** Interleukin-6-type cytokines in emergency and leukemic hematopoiesis, Fels Institute for Cancer Research and Molecular Biology, Temple University School of Medicine, Philadelphia, PA, May 19, 1994.
12. **Hawley, R.G.** Interleukin-6-type cytokines in myeloproliferative disease, The New York Academy of

- Sciences Conference on Interleukin-6-type Cytokines, Poznan, Poland, June 22, 1994.
13. **Hawley, R.G.** Hematopathology of IL-6-type cytokines, The Metcalf Forum: Polyfunctionality of Hemopoietic Regulators, Dublin, Ireland, September 8, 1994.
 14. **Hawley, R.G.** Retroviral vectors for preclinical studies and gene therapy, Center for Molecular Medicine and Genetics, Wayne State University, Detroit, MI, October 3, 1994.
 15. **Hawley, R.G.** Retroviral gene delivery, Keystone Symposium, Drug Delivery: Barriers to Drug Transport and the Design of Novel Therapeutics, Hilton Head Island, SC, January 10, 1995.
 16. **Hawley, R.G.** Retrovectors for gene delivery to hematopoietic cells and tissues, Genetics Institute, Cambridge, MA, February 13, 1995.
 17. **Hawley, R.G.** Retrovectors: therapeutic applications and potential, The Toronto Biotechnology Initiative and The Canadian Institute of Biotechnology Symposium on Gene Therapy in Canada, Toronto, Ontario, June 26, 1995.
 18. **Hawley, R.G.** Cytokine gene transfer to hematopoietic cells: blood cell dynamics in bone marrow-chimeric mice, The Global Network for Cell and Molecular Biology of UNESCO Conference on New Frontiers in Cell and Molecular Biology, Warsaw, Poland, October 4, 1995.
 19. **Hawley, R.G.** Next generation retroviral vectors for clinical gene transfer, Biotechnology Research Institute, National Research Council of Canada, Montreal, Quebec, November 29, 1995.
 20. **Hawley, R.G.** Genetic modification of hematopoietic cells: potential for cancer gene therapy, McGill University Cancer Centre, Montreal, Quebec, November 30, 1995.
 21. **Hawley, R.G.** Retrovirus-based gene delivery system for mice (and men?), Bone Marrow Transplant Program Seminar Series, Division of Oncology, University of Colorado Health Sciences Center, Denver, CO, December 18, 1995.
 22. **Hawley, R.G.** Developmental potential of genetically-modified hematopoietic and embryonic stem cells, Keystone Symposium, Gene Therapy for Hematopoietic Stem Cells in Genetic Disease and Cancer, Taos, NM, February 6, 1996.
 23. **Hawley, R.G.** Generation of primitive erythroid cell lines capable of switching from embryonic to adult globin gene expression, Amgen Inc., Thousand Oaks, CA, November 18, 1996.
 24. **Hawley, R.G.** Retroviral vectors expressing fluorescent and cell-surface reporters as FACS-selectable markers of gene transfer into human hematopoietic cells, Becton Dickinson Canada Flow Cytometry Symposium, Toronto, Ontario, January 23, 1997.
 25. **Hawley, R.G.** Combination IL-12/B7-1 immunogene therapy of cancer, Genetics Institute, Andover, MA, March 17, 1997.
 26. **Hawley, R.G.** MSCV retroviral vector platform for human gene transfer, 2nd Canadian Symposium on Gene Therapy, Vancouver, British Columbia, June 22, 1997.
 27. **Hawley, R.G.** Vectors for gene therapy and tissue engineering, Toronto/Pittsburgh Tissue Engineering Conference, Pittsburgh, PA, February 13, 1998.
 28. **Hawley, R.G.** Molecular informatics and gene therapy of the hematopoietic system, Genetics Institute, Andover, MA, March 26, 1998.
 29. **Hawley, R.G.** Gene transfer to hematopoietic stem cells: insights into regulatory mechanisms and implications for gene therapy, Holland Laboratory, American Red Cross, Rockville, MD, April 3, 1998.
 30. **Hawley, R.G.** Propitious gene transfer and expression with 'pre-lentiviral' vectors, The Second Conference on Stem Cell Gene Therapy: Biology and Technology, Orcas Island, WA, June 2, 1998.
 31. **Hawley, R.G.** Clinically relevant gene transfer and expression in hematopoietic stem cells, Session: Hematopoietic Stem Cells and Cancer Therapy, 3rd Canadian Gene Therapy Symposium, Montreal, Quebec, June 27, 1998.
 32. **Hawley, R.G.** MSCV retroviral platform for gene transfer to ES cells, BD Biosciences Clontech, Palo Alto, CA, July 10, 1998.
 33. **Hawley, R.G.** New HIV-based lentivirus vectors for gene delivery to the human hematopoietic system, Session: RNA Vectors I, 2nd Annual Meeting of the American Society of Gene Therapy, Washington, DC, June 10, 1999.
 36. **Hawley, R.G.** Retroviral vectors and packaging cell lines, Session: Biology and Applications to Gene Therapy, 3rd Annual Meeting of the American Society of Gene Therapy, Denver, CO, May 31, 2000.
 37. **Hawley, R.G.** Vector designs for stem cell expression, Session: Gene Therapy, 42nd Annual Meeting of the American Society of Hematology, San Francisco, CA, December 2, 2000.
 38. **Hawley, R.G.** Lentiviral vectors for position-independent transgene expression, Session: Towards a Transitional Post-Genomic Era and Its Clinical Implications, Pharmaceutical Congress of the Americas, Orlando, FL, March 28, 2001.
 39. **Hawley, R.G.** Combinatorial association of a chromatin insulator and a scaffold attachment region provides superior protection against position effect variegation and transgene silencing, 3rd Conference

- on Stem Cell Gene Therapy, Rockville, MD, March 23, 2002.
40. **Hawley, R.G.** ABCs of lentiviral vectors, Session: Retrovirus Vectors, 5th Annual Meeting of the American Society of Gene Therapy, Boston, MA, June 5, 2002.
 41. **Hawley, R.G.** Genetic modification of hematopoietic stem cells, Mount Desert Island Biological Laboratory and The Jackson Laboratory Conference on Stem Cells on Land and at Sea, Bar Harbor, ME, August 12, 2002.
 42. **Hawley, R.G.** Flow cytometry approaches to hematopoietic stem cell identification and genetic modification, American Society for Histocompatibility and Immunogenetics/Clinical Cytometry Society Combined Meeting, Nashville, TN, October 22, 2002.
 43. **Hawley, R.G.** Performance- and safety-enhanced lentiviral vectors for stem cell modification and therapy, Corporate Symposium: Quality Biological, Inc.'s 8th Ex Vivo Workshop, 44th Annual Meeting of the American Society of Hematology, Philadelphia, PA, December 6, 2002.
 44. **Hawley, R.G.** ABCs of lentiviral vectors, Session: Retrovirus Vectors, 6th Annual Meeting of the American Society of Gene Therapy, Washington, DC, June 4, 2003.
 45. **Hawley, R.G.** Regulatable HOX11-mediated immortalization of hematopoietic precursors from mouse embryonic stem cells, Session: Hematopoietic Development, 45th Annual Meeting of the American Society of Hematology, San Diego, CA, December 8, 2003.
 46. **Hawley, R.G.** Retroviral FVIII into hematopoietic stem cells. National Hemophilia Foundation's Seventh Workshop on Novel Technologies and Gene Transfer for Hemophilia, Philadelphia, PA, September 30, 2004.
 47. **Hawley, R.G.** The Carleton and Sigrid Stewart Plenary Lecture: Rainbow reporters for multispectral marking and genetic modification of hematopoietic stem cells. 13th Annual Great Lakes International Imaging and Flow Cytometry Association Meeting, Windsor, Ontario, October 23, 2004.
 48. **Hawley, R.G.** Retroviral FVIII into hematopoietic stem cells: molecular chimerism therapy for hemophilia A. National Hemophilia Foundation's Eighth Annual Workshop on Novel Technologies and Gene Transfer for Hemophilia, Philadelphia, PA, March 31, 2006.
 49. **Hawley, R.G.** Vectors for human pluripotent stem cell transduction, Session: Retro/Lentivirus Strategies for Modification of Stem Cells, 11th Annual Meeting of the American Society of Gene Therapy, Boston, MA, May 28, 2008.
 50. **Hawley, R.G.** Immortalization of murine and human hematopoietic progenitors, Session: Reprogramming and Cell Expansion, 12th Annual Meeting of the American Society of Gene Therapy, San Diego, CA, May 27-30, 2009.

Proffered Communications

1. Hozumi, N., **Hawley, R.**, and Murialdo, H. Isolation and characterization of the kappa constant gene from NZB mouse. 4th International Congress of Immunology, Paris, France, August 1980.
2. **Hawley, R.**, Murialdo, H., Shulman, M., and Hozumi, N. Isolation and characterization of a TNP-specific immunoglobulin kappa light chain gene. Canadian Society for Cell Biology Western Winter Workshop, Calgary, Alberta, January 1981. (Oral Presentation)
3. **Hawley, R.**, Shulman, M., Murialdo, H., Gibson, D., and Hozumi, N. Studies on the expression of TNP-specific immunoglobulin kappa light chain genes. Cellular and Molecular Biology of Hemopoietic Stem Cell Differentiation, Honey Harbour, Ontario, September 1981.
4. **Hawley, R.G.** Repetitive sequences expressed in mouse hybridomas are transposable elements. NATO/FEBS International Summer School on Immunology, Greece, September 1982. (Oral Presentation)
5. **Hawley, R.G.**, Shulman, M.J., and Hozumi, N. IAP genes: jumping genes in the mouse genome. Research Day, Graduate Organization Faculty of Medicine, University of Toronto, Toronto, Ontario, January 1983.
6. Shulman, M.J., **Hawley, R.**, Hozumi, N., Köhler, G., and Potash, M. Molecular analysis of mutations affecting immunoglobulin proteins and gene function. Canadian Federation of Biological Societies, Ottawa, Ontario, June 1983.
7. **Hawley, R.**, Shulman, M., Murialdo, H., and Hozumi, N. IAP genes: jumping genes in the mouse genome. Oncogenes and Cancer, First Terry Fox Cancer Research Conference, Vancouver, British Columbia, July 1983. (Oral Presentation)
8. Hozumi, N., Ochi, A., **Hawley, R.G.**, and Shulman, M.J. Expression of cloned immunoglobulin genes in heterologous cells. 5th International Congress of Immunology, Kyoto, Japan, August 1983.
9. **Hawley, R.G.**, Shulman, M.J., and Hozumi, N. Intracisternal A-particle genes are mammalian transposable elements. CSH Conference on Cell Proliferation and Cancer, Cold Spring Harbor, NY, September 1983. (Oral Presentation)
10. Hozumi, N., Ochi, A., Hawley, T., **Hawley, R.**, and Shulman, M. Expression of cloned immunoglobulin

- genes. CFBS Workshop on Hybridomas, Saskatoon, Saskatchewan, June 1984.
11. **Hawley, R.G.** Retroviruses for transduction of interleukin-6 genes into hematopoietic cells. Conference on Development and Cancer, Quebec City, Quebec, June 1989.
 12. Hawley, T.S., McLeish, W.A., and **Hawley, R.G.** Establishment of a novel factor-dependent myeloid cell line following infection of mouse bone marrow with a retroviral vector carrying an interleukin-1 α gene. AACR Conference on Chromosomal and Growth Factor Abnormalities in Leukemia, Cape Cod, ME, October 1990.
 13. **Hawley, R.G.**, Burns, B.F., and Hawley, T.S. Leukocytosis in mice transplanted with genetically-modified hematopoietic cells constitutively expressing interleukin-1 α or interleukin-6. AACR Conference on Chromosomal and Growth Factor Abnormalities in Leukemia, Cape Cod, ME, October 1990.
 14. Sabourin, L.A. and **Hawley, R.G.** Suppression of programmed death and G₁ arrest in B-cell hybridomas by interleukin-6 is not accompanied by altered expression of immediate early response genes. Fisher Scientific Winternational Symposium on Growth Control and Cell Cycle Regulation, Quebec City, Quebec, February 1991.
 15. **Hawley, R.G.**, Lach, B., and Hawley, T.S. Expression of retrovirally transduced IL-1 α in IL-6-dependent B cells: a murine model of aggressive multiple myeloma. OCTRF 13th Clinical Cancer Research Conference on Cancer: Molecular Biology; Prognostic Factors; Innovative Therapies, Couchiching, Ontario, October 1991.
 16. **Hawley, R.G.** Selective transformation of primitive lymphoid cells by activated *ras* in murine bone marrow transplant recipients. Signal Transduction in Normal and Cancer Cells, Banff, Alberta, April 1993.
 17. Ally, B., Hawley, T., Kündig, R., **Hawley, R.G.**, and Ohashi, P. Induction of tolerance by retroviral mediated gene therapy may prevent autoimmune disease. 12th European Immunology Meeting, Barcelona, Spain, June 1994.
 18. Voura, E.B., Billia, F., Iscove, N.N., and **Hawley, R.G.** Expression of cell adhesion molecules (CAMs) in hematopoietic precursors and their differentiated progeny. Therapeutic Application of Hematopoietic Stem Cells: New Technologies, Cytokines and Gene Therapy, San Diego, CA, June 1994.
 19. Berger, L.C. and **Hawley, R.G.** IL-(interleukin)-6 signal transduction pathways in malignant plasma cells. AACR Conference on Signal Transduction of Normal and Tumor Cells, Banff, Alberta, April 1995.
 20. **Hawley, R.G.**, Fong, A.Z.C., Goldman, S.J., Lyman, S.D., and Hawley, T.S. Blood cell dynamics in bone marrow-chimeric mice expressing cytokine genes. First Conference on Stem Cell Gene Therapy: Biology and Technology, Rockville, MD, October 1995.
 21. **Hawley, R.G.**, Lieu, F.H.L., Fong, A.Z.C., Leonard, J.P., Goldman, S.J., and Hawley, T.S. Retroviral vectors for delivery of IL-12 to the bone marrow after hematopoietic stem cell autografting. Interleukin 12: Cellular and Molecular Immunology of an Important Regulatory Cytokine, New York, NY, November 1995.
 22. **Hawley, R.G.**, Lieu, F.H.L., Fong, A.Z.C., Leonard, J.P., Goldman, S.J., and Hawley, T.S. Retroviral vectors for delivery of interleukin 12 (IL-12) to normal and malignant hematopoietic cells. Keystone Symposia on Molecular and Cellular Biology: Gene Therapy for Hematopoietic Stem Cells in Genetic Disease and Cancer, Taos, NM, February 1996.
 23. Cheng, L., **Hawley, R.**, and Tsukamoto, A. Using the improved green fluorescent protein (GFP) to monitor gene transfer and expression in mammalian cells. Keystone Symposia on Molecular and Cellular Biology: Gene Therapy for Hematopoietic Stem Cells in Genetic Disease and Cancer, Taos, NM, February 1996.
 24. Wiznerowicz, M., Fong, A., Iuycki, D., Mackiewicz, A., and **Hawley, R.G.** Development of dicistronic retroviral vectors for human gene therapy. 4th Symposium on Gene Therapy, Max Delbrück Center for Molecular Medicine, Berlin, Germany, April 1996.
 25. Allen, T.D., Hawley, T.S., Fong, A.Z.C., and **Hawley, R.G.** The expression of *PBX* and *MEIS* genes in MSCV-HOX11-transduced cell lines. Frontiers of Malignant Hematology, Toronto, Ontario, June 1997.
 26. Hawley, T.S., Fong, A.Z.C., Pizzoferrato, E., Lieu, F.H.L., Berinstein, N.L., Stewart, A.K., and **Hawley, R.G.** Combination IL-12/B7-1 immunogene therapy of B-cell malignancies. 2nd Canadian Symposium on Gene Therapy, Vancouver, British Columbia, June 1997.
 27. Fong, A.Z.C., Wiznerowicz, M., Mackiewicz, A., and **Hawley, R.G.** Double-copy bicistronic retroviral vector platform for gene therapy and tissue engineering: melanoma vaccine development. 2nd Canadian Symposium on Gene Therapy, Vancouver, British Columbia, June 1997.
 28. Bor, Y.-c. and **Hawley, R.G.** Development of a retroviral gene delivery system targeting human CD38⁺ multiple myeloma cells. 2nd Canadian Symposium on Gene Therapy, Vancouver, British Columbia, June 1997.
 29. Trudel, S., Hawley, T., Zhang, J.Y., Buckstein, R., Graham, F.L., **Hawley, R.G.**, and Stewart, A.K. *In vitro* preclinical studies of gene transfer in multiple myeloma. 2nd Canadian Symposium on Gene Therapy, Vancouver, British Columbia, June 1997.
 30. Claudio, J.O., Liew, C.C., Dempsey, A.A., Cukerman, E., Bi, S., Stewart, A.K., and **Hawley, R.G.** Initial

- assessment of the expression profile of a hematopoietic progenitor cell. 7th SCBA International Symposium, Toronto, Ontario, July 1997.
31. Claudio, J.O., Liew, C.C., Dempsey, A.A., Cukerman, E., Stewart, A.K., and **Hawley, R.G.** Understanding the molecular mechanisms regulating the early stages of hematopoiesis by single pass sequencing of expressed genes. Annual Meeting of the American Society of Human Genetics, Baltimore, MD, October-November 1997.
 32. Cheng, L., Du, C., Lavau, C., Chen, S., Tong, J., Chen, B., Scollay, R., Hill, B., and **Hawley, R.G.** Stable gene transfer and expression in engrafting human hematopoietic stem cells (HSC) and their lympho-myeloid progeny. Keystone Symposia on Molecular and Cellular Biology: Gene Therapy for Hematopoietic Stem Cells in Genetic Disease and Cancer, Incline Village, NV, January 1998.
 33. Bor, Y.-c., Hawley, T.S., Lust, J.A., Stewart, A.K., and **Hawley, R.G.** Development of retroviral vectors which use a single chain variable fragment to selectively target human CD38⁺ multiple myeloma cells. 1st Annual Meeting of the American Society of Gene Therapy, Seattle, WA, May 1998.
 34. Stewart, A.K., Hitt, M., Hawley, T.S., Li, Z.H., Mandelbaum, S., Dodgson, C., Cappe, D., Graham, F.L., and **Hawley, R.G.** Tricistronic viral vectors coexpressing human interleukin-12 (IL-12) and B7-1 (CD80) for the immunotherapy of myeloma. 3rd Canadian Gene Therapy Symposium, Montreal, Quebec, June 1998.
 35. Stewart, A.K., Hawley, T.S., Li, Z.H., Fong, A., Trudell, S., Cappe, D., Mandelbaum, S., Dodgson, C., and **Hawley, R.G.** Immunogene therapy with interleukin-12 (IL-12), B7-1 and Flt3 ligand (Flt3L) in a murine myeloma model. 1998. 3rd Canadian Gene Therapy Symposium, Montreal, Quebec, June 1998.
 36. Dodgson, C., Nanji, S., Snyder, M., Dubé, I., Thomas, T., Addison, C.L., **Hawley, R.G.**, Graham, F.L., Sutherland, D.R., and Stewart, A.K. Adenovirus infected plasma cells expressing IL-2 for use as autologous vaccines. 3rd Canadian Gene Therapy Symposium, Montreal, Quebec, June 1998.
 37. Claudio, J.O., Liew, C.C., Yoon, J., Ma, J., Dempsey, A.A., Stewart, A.K., and **Hawley, R.G.** Gene expression in human CD34⁺ hematopoietic progenitor cells. Annual Meeting of the American Society of Human Genetics, Denver, CO, October 1998.
 38. Plowright, E.E., Li, Z.H., **Hawley, R.G.**, and Stewart, A.K. An activating mutation of the myeloma associated oncogene fibroblast growth factor receptor 3 (FGFR3) promotes interleukin-6 (IL-6) independence via up-regulation of Bcl-x_L and is transforming in mice. Keystone Symposia on Molecular and Cellular Biology: B Lymphocyte Biology and Disease, Taos, NM, February 1999.
 39. Stewart, A.K., Mandelbaum, S., Hitt, M., Li, Z.H., Cappe, D., Fong, A., Graham, F.L., Hawley, T.S., and **Hawley, R.G.** Tri-cistronic viral vectors co-expressing interleukin-12 (IL-12) and CD80 (B7-1) for the immunotherapy of cancer: studies in a myeloma model. Annual Meeting of the Canadian Society of Surgical Oncology, Toronto, Ontario, April 1999.
 40. Bor, Y.-c., Stewart, A.K., and **Hawley, R.G.** New HIV-based lentivirus vectors for gene delivery to the human hematopoietic system. 2nd Annual Meeting of the American Society of Gene Therapy, Washington, DC, June 1999. (Oral Presentation)
 41. Hitt, M.M., Puetzer, B., Emtage, P., Bramson, J., Gauldie, J., Muller, W.R., Stewart, K., **Hawley, R.**, and Graham, F.L. A tricistronic adenoviral vector encoding interleukin-12 and the B7-1 costimulatory molecule expresses high levels of the transgenes *in vitro* and induces tumor regression in murine models for breast cancer. 2nd Annual Meeting of the American Society of Gene Therapy, Washington, DC, June 1999.
 42. Okada, T., **Hawley, R.G.**, Kodaka, M., and Okuno, H. Significance of VLA-4-VCAM-1 and CD44-hyaluronan interactions for transendothelial invasion in a bone marrow metastatic myeloma model. 91st Annual Meeting of the American Association for Cancer Research, San Francisco, CA, April 2000.
 43. Nakagawa, S., Massie, B., and **Hawley, R.G.** Optimizing cancer gene therapy using a tetracycline-regulatable adenovirus vector expressing IL-12. Millennial World Congress of Pharmaceutical Sciences, San Francisco, CA, April 2000.
 44. Ma, Y., Ramezani, A., Lewis, R., Kaufman, D. **Hawley, R.G.**, and Thomson, J.A. Lentivirus transduction of human embryonic stem cells. Keystone Symposia on Molecular and Cellular Biology: Stem Cells: Origins, Fates and Functions, Keystone, CO, March 2002.
 45. Refai, D., Cassiani-Ingoni, R., Reichert-Scriver, S.A., Fogdell-Hahn, A., Leitman, S.F., Read, E.J., Frank, J.A., Ramezani, A., **Hawley, R.G.**, Dubois-Dalcq, M., McFarland, H., Hudson, L.D., and Martin, R. Lineage differentiation of human hematopoietic stem cells into CNS progenitors: future remyelination therapy in multiple sclerosis. Keystone Symposia on Molecular and Cellular Biology: Stem Cells: Origins, Fates and Functions, Keystone, CO, March 2002.
 46. Ramezani, A., Hawley, T.S., and **Hawley, R.G.** Combinatorial association of a chromatin insulator and a scaffold attachment region provides superior protection against position effect variegation and transgene silencing. 3rd Conference on Stem Cell Gene Therapy, Rockville, MD, March 2002.
 47. Owens, B.M., Hawley, T.S., and **Hawley, R.G.** Dissection of domains of the HOX11 transcription factor

- that are required for immortalization of murine hematopoietic precursors. 3rd Conference on Stem Cell Gene Therapy, Rockville, MD, March 2002.
48. Moayeri, M., Ramezani, A., Morgan, R.A., Hawley, T.S., and **Hawley, R.G.** Toward hematopoietic stem cell gene therapy for hemophilia A: Recombinant factor VIII production from advanced expression systems. 3rd Conference on Stem Cell Gene Therapy, Rockville, MD, March 2002.
 49. Eaker, S.S., Hawley, T.S., and **Hawley, R.G.** Identification and characterization of side population (SP) subsets from mouse embryonic stem cell-derived embryoid bodies. 3rd Conference on Stem Cell Gene Therapy, Rockville, MD, March 2002.
 50. Riz, I., Akimov, S.S., Chase, M.B., Ramezani, A., Hawley, T.S., and **Hawley, R.G.** Developmental regulation of ITM2A gene expression. Society for Developmental Biology Mid-Atlantic Regional Meeting, Washington, DC, April 2002.
 51. Riz, I. and **Hawley, R.G.** Cell cycle transcriptional programs modulated by the HOX11 oncogene of T cell acute lymphoblastic leukemia. From Genome to Disease: A Symposium of High Throughput Biology, National Institutes of Health, Bethesda, MD, July 2003.
 52. Hong, S., Hwang, D.Y., Hwang, M., Yoon, S., Ramezani, A., **Hawley, R.G.**, and Kim, K.S. Functional analysis of different promoters in lentiviral vectors for transgene expression at different stages of *in vitro* differentiated mouse embryonic stem cells. International Society for Stem Cell Research 3rd Annual Meeting, San Francisco, CA, June 2005.
 53. Uittenbogaard, M., Riz, I., **Hawley, R.G.**, and Chiaramello, A. NeuroD6 genomic signature bridging neuronal differentiation, regeneration, and survival. 37th Annual Meeting of the Society for Neuroscience, San Diego, CA, November 2007.
 54. Uittenbogaard, M., Ramezani, A., Hawley, T., **Hawley, R.G.**, and Chiaramello, A. The neurogenic basic helix-loop-helix transcription factor NeuroD6 mediates neuritogenesis and neurite regeneration of mouse embryonic stem cells and neural precursor PC12 cells. 12th International Symposium on Neural Regeneration, Asilomar, CA, December 2007.
 55. Riz, I., Akimov, S., Baxter, K.K., Lee, H.J., Behnam, R., Mariño-Ramírez, L., Landsman, D., Hawley, T.S., and **Hawley, R.G.** TLX1/HOX11 homeodomain protein in control of cell fate. Gene Regulatory Mechanisms and Development Symposium, Harvard Medical School, Boston, MA, October 2008.