RESUME

Name Lung-Ji Chang

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Birth October 14, 1958

Citizenship US

Marital Status Married with one child

Education

1980 B.S. National Taiwan University
1986 Ph.D. University of Iowa

Government Service

1980-1982 Mandatory military service, Taiwan

Employment

1986-1989 Postdoctoral (Supervisor: Harold Varmus, Nobel Laureate - 1989)
Department of Microbiology and Immunology
University of California, San Francisco

1990-1993 Visiting Associate
Laboratory of Molecular Microbiology
National Institutes of Allergy and Infectious Diseases
National Institutes of Health, Bethesda, Maryland

1993-1997 Assistant - Associate Professor (tenured)
Department of Medical Microbiology & Immunology
University of Alberta, Edmonton, Alberta
Division of Infectious Disease, Department of Medicine
University of Alberta, Edmonton, Alberta

1997-Present Associate Professor - Professor
Department of Molecular Genetics and Microbiology, Powell Gene Therapy Center, McKnight Brain Institute, Shands Cancer Center, University of Florida, Gainesville, Florida

Research Grants and Funds Received (completed and active)

AHFMR (Alberta Heritage Foundation for Medical Research) $200,000 1993-1997
Project title: 'Isolation of human cDNA encoding for the HIV attachment and penetration factors'
MRC (Medical Research Council) $ 210,750 1993-1996

Project title: 'Characterization of human host factors necessary for HIV attachment and penetration'.
ANR Trust Fund $ 5,000 1994-1995
Project title: 'Molecular design and testing of an anti-HIV mega-ribozyme'
NHRDP (AIDS Grant) $ 285,000 1995-1998.
Project title: 'Development of retroviral delivery system for anti-HIV gene therapy'.
Cancer Research Funds (Central Research & Cross Cancer Institute's Special Funds) $ 50,000 1995
Project title: 'Anti-tumor immuno-gene therapy'.
ANR Trust Fund $5,000 1995-1996
Project title: 'Study of HIV-specific cellular immune response in HIV-seronegative high-risk individuals'.
Alberta Cancer Board, Research Initiative Program Director $200,000/yr 1996-1998
Project title: 'Anti-cancer gene therapy: development of hu-PBL-SCID mouse human tumor models and assessment of combined immuno-gene therapeutic effects'
Briana Biotech Inc., Research Contract $60,000/yr 1997
Project title: 'Combination immunogene therapy for brain and skin cancer'
National Institutes of Health, R21-NIDDK (awarded, returned due to overlap) $100,000/yr 1997-1999
Project title: 'Development of lentiviral vectors'.
University of Florida, College Investment Fund Grant $20,000 1999
Project title: 'Comparison of transduction efficiencies for CD34+ hematopoietic stem cells by the amphotropic Moloney murine leukemia virus (MLV) and the HIV based lentiviral vector system'.
Elsa Pardee Foundation (Co-investigator, 5%, PI: Dr. J. R. Zucali) $97,986/yr 1999
Project title: 'Lentiviral gene transfer in human hemopoietic stem cells'
NIH, NHLBI (subproject 4 PI, PPG Director Muzyczka) $137,000/yr 1997-2002
Project title: 'Development of lentiviral vectors'.
National Institutes of Health, RO3 PI $50,000/yr 1999-2003
Project title: 'HIV-1 Vaccine and Immunity Studies in Hu-PBL SCID/beige Mice'.
AMDL Inc., Breast Cancer Research (Tustin, California) $68,750 2002-2004
Project title: 'Combination immunogene therapy for breast cancer'
UF sponsored research, Co-PI (PI, Dr. Rowan Milner) $50,000 2002-2004
Project title: 'In Vitro Analysis of Anti-Feline Vaccine-Associated Sarcoma (FVS) Immunity of Immunogene Modified FVS Vaccine'
Multiple Myeloma Research Foundation 2004 Senior Researcher Award $100,000/yr 2004-2005
Project title: 'Dendritic cell and T cell therapy targeting multiple myeloma-specific antigens'
NIH, R21 Co-PI (PI, Yang, L.-J.) $100,000/yr 2004-2006
Project title: 'Transdifferentiation of hepatocytes into insulin-producing cells by genetic modifications'
National Institutes of Health, NHLBI (subproject 3 PI, PPG Director Muzyczka) $240,000/yr 2002-2008
Project title: 'Improvement of safety, efficacy and in vivo models of lentiviral vectors'

NIH R21 DK 68031 Co-PI (PI: Yang, L.J.) $100,000/yr 2005-2007
Project title: 'Autoimmunity of hepatocyte-derived insulin-producing cells'
NIH R01 DK071831 Co-PI (PI: Yang, L.J.) $1,732,350 2005-2010
Project title: 'Liver to Endocrine Transdifferentiation'
NIH R01 HD37432 Co-PI (PI: Chengini, N.) $191,500/yr 2005-2010
Project title: 'Molecular mechanism of leiomyoma growth and regression'
VBI $700,000 2006-2007
Project title: 'Immunotherapy for leukemia'
VBI $800,000 2007-2012
Project title: 'Immunotherapy for cancer'
UF/Moffitt Cancer Center Collaborative Initiative Co-PI (PI: Sheng, W.)
$100,000/yr 2009-2010
Project title: 'Target Identification of Lenalidomide in del5q MDS'
UF/Moffitt Cancer Center Fall 2008 Competition PI $75,000/yr 2009-2011
Project title: 'Immune cell therapy targeting multiple myeloma'

Training Grants:

NIH - Microbiology and Infectious Diseases
NCI - Cancer cell biology

Pending

NIH RO1 'Safety and efficacy evaluation of an advanced lentiviral vector system'.
Responsibility: PI

Honor/Awards

1977-1980	Tuition Award, National Taiwan University
1978-1980	Book Coupon Award (1978, 1979, 1980)
1979	Matsumoto Scholar, National Taiwan University
1981	Commissioned Officer Award ($2,000 NTD)
1982-1986	Teaching Assistance Scholarship, University of Iowa
1986-1989	Postdoctoral Fellowship, University of California, San Francisco
1990-1993	Fogarty Visiting Associate, National Institutes of Health
1993-1998	Research Scholar, Alberta Heritage Foundation for Medical Research
1998-2003	Senior Research Scholar, Alberta Heritage Foundation for Medical Research
1994	AHFMR Travel Award $ 1,800; Purpose: Presentation at the 10th International Conference on AIDS, Yokohama, Japan, Aug. 7-11/94.
1994-1995	AHFMR Tech Commercialization Phase 1 Award: 'Retroviral vector for gene therapy'; $15,000.
1996	AHFMR Lecturer Award: "HIV gene therapy and animal models" $700
1997	Howard Hughes Medical Institute, Scholar Nominee, Univ. of Alberta
1997-1999	Scholar, Lucille P. Markey Charitable Trust
2004-2005	Multiple Myeloma Research Foundation Senior Scholar

Patents (Issued and Pending)

'Retroviral vectors' Issued US Pat. No. 5,693,50.
'Recombinant Hepatitis B Virus Vectors' Issued US Pat. No. 5,981,274.

'Combination immunogene therapy' Issued US Pat . No. 6,730,512.
'Method of using mouse model for evaluation of HIV vaccines' Issued US Pat. No. 6,248,721.
'Animal model for evaluation of vaccines' Issued US and PCT filed (97)
'Lentiviral vectors' Issued US Pat. No. 6,207,455.
'Lentiviral vectors' Issued US Pat. No. 6,531,123.
'Long term expression of lentiviral vector' 60/385986, 2002.
'Modulation of dendritic cell function' PCT 7655 1WO, 2002.
'Small interference RNA gene therapy' PCT filed 2003.
'Engineered dendritic cells for gene therapy' US filed 2007.
'Materials and methods for control of infections' PCT/US/2007/011519 filed May 2007.
'Production of mature and functional CD4 T cells developed from adult stem cells' US filed 2008.

Members and Services

1979-1980	Society of Phytopathology Studies
1983-1985	Foreign Language House, University of Iowa
1984-present	American Society of Microbiology
1991-present	American Association of Advancement of Science
1998-present	American Society of Gene Therapy
1994-1997	Graduate Study Training Committee, Dept. of Medical Microbiology and Immunology, University of Alberta
1995-1997	Alberta Gene Therapy Advisory Committee, Founder and Member
1996-1999	Ad hoc reviewer, Canadian Foundation for AIDS Research (CANFAR)
1996-1999	Ad hoc reviewer, NHRDP HIV/AIDS Biomedical/Clinical Review Committee
1996-1999	Ad hoc reviewer, MRC Microbiology & Infectious Disease Committee
1997-1998	Ad hoc reviewer, BioTechniques
1997/8	Current Drugs Panel of Evaluators (Investigation Drug Data base, IDdb)
1997/8	NIH Special Emphasis Panel for HIV Vaccine Research.
1997-1998	NIH Special Review Committee, "Pilot Studies on Gene Therapy Vectors for Metabolic Diseases" Exploratory Grant Applications, NIDDK/NIH.
1999 May	NIDDK Special Grants Review Committee PPG Site Visit
1999-2001	USAMRMC, Breast Cancer Research Program, DOD, Genetics Panel Member.
1997-2000	Council member, Faculty of Medicine, UF.
1997-1999	UF Senate, Faculty of Medicine
1998-2003	Interdepartment Graduate Study Program (IDP) Admission Committee member, Genetics Concentration, College of Medicine, University of Florida
2000-present	Associate Editor, "Current Gene Therapy", Bentham Science Publishers.
2001-2005	Ad hoc reviewer, Biotechnology Progress, Biotechnology & Bioengineering
2002-present	Ad hoc reviewer, Journal of Biomedical Science
2004-present	Ad hoc reviewer, Human Gene Therapy
2001-present	American Association for Cancer Research

2002-present	Member, European Society of Gene Therapy
2002	JDRF International, Program project write-in reviewer.
2003 January	Member, NIAID Special Review Committee, AIDS Clinical & Epidemiological Research – "Primate Core Immunology-Virology Laboratories".
2003	Abstract reviewer for RNA virus vector category, and meeting moderator in Advances in Technology and Applications, ASGT 2003 6th Annual Meeting, Washington DC, June 4-8, 2003.
2002-present	IAEA, Vienna, Austria, United Nation Consultant.
2004 March	Member, NIAID Special Review Committee, HIV Vaccine Research and Design Program (HIVRAD).
2004-2008	Member, NHLBI Special Emphasis Panel. The pathogenesis of HIV-associated nephropathy.
2004 April	Reviewer, Technology Development Corporation (TEDCO) Maryland Technology Transfer Fund (MTTF).
2005 June	Abstract reviewer, ASGT 2005 8th Annual Meeting, St. Louis, MO.
2007 July	International AIDS Society 4th Conference Abstract Reviewer, Sydney, Australia
2007-present	Editorial Advisory Board: The Open Gene Therapy Journal, The Open Vaccine Journal, The Open Genomics Journal, Bentham Open
2007-present	Associate Editor, Journal of Formosa Medial Association, Elsevier
2008-prsent	Member, American Society of Hematology
2008	Member, Study Section of National Research Program for Genomic Medicine, National Science Council, Taiwan

Visiting Professorship

1993	Univ. of California, San Diego, CA.

Current Research Interests

My laboratory has been developing oncoretroviral and lentiviral vectors as gene transfer tools and uses innovative approaches to study the development of stem cells and functional immune cells. The emphasis of research has been to translate basic science into clinical treatment for genetic diseases, infectious diseases and cancer. Research activities include characterization of cellular and immune modulatory factors that are essential to the development of protective immunity in patients. Innovative immunotherapy approaches are developed for the treatment of infections and cancer. The long-term goal is to translate basic scientific discovery into clinical applications.

Teaching Experience

Mechanism of Pathogenicity (MMID 415; 1994, 1996); DNA Cloning (MMID 516; 1994, 1995); Bacterial Plasmids (MMID 520; 1994); Human Gene Therapy (Microbiology 514; 1995); Gene Therapy (Oncology 520; 1995); Seminar in Immunology (IMM 502; 1996); Medical Virology (Controversies in Medical Virology; 1998); IDP Section II on Molecular Biology (9/21, 9/24-98); Immunology/Microbiology Journal Club Course (1998); Advanced IDP module (GMS6040) "Host-Pathogen Interactions" (1998-present); IDP Human Genetics Module "Gene Therapy" (12/4/98-/02); "Microbiology, Immunology and Immunotherapeutics" (PHA 5752, Spring 1999-

2000); "Retrovirus and Hepatitis B Virus Replication", Advanced Virology (IDP, GMS6035, 1999-present); "Gene Therapy: From Bench to Bedside" (GMS 6059, 2003-present); Fundamentals of Cancer Biology "Cancer Vaccines" (GMS 6065, 2003-present).

Invited International Research Workshops and Policy Conferences

OCDE Workshop Ottawa, Canada: '95 on Gene Delivery Systems'

Gene Therapy Policy Conference, NIH/FDA: 'Lentiviral Vectors for Gene Delivery' 3-98.

International Atomic Energy Agency (IAEA), Division of Human Health, Consulting Conference on "Radiotherapy modifications of cancer treatments in AIDS patients", Vienna, Austria, 2002-2006.

Invited Presentation/Workshops

Xth International AIDS Conference, Yokohama, Japan. Aug. 7-11, 1994. Topics: 'Tat-minus HIV-1 Replication'.

University of Tokyo, The Third Department of Internal Medicine, Tokyo, Japan. Aug. 1994. Topics: 'Human Gene Therapy and Retroviral Vectors'.

IBC's Fourth Conference on Gene Therapy. Washington, DC, USA. Nov. 14-15, 1994. Topics: 'Retroviral Vectors for Antiviral, Anti-Tumor and Gene Therapy'.

Division of Experimental Oncology, Dept. of Oncology, Cross Cancer Institute, Edmonton, Jan. 12, 1995. Topics: 'Tumor immunogene therapy: expression of T-cell costimulator B7-2 and therapeutic cytokine GM-CSF gene using an improved retroviral vector'.

The Kennedy Krieger Research Institute, Dept. of Neurology, John's Hopkins Medical School, Maryland, USA, April 1995. Topics: 'Anti-cancer Immunogene Therapy'.

Schepens Eye Research Institute, Harvard Medical School, Boston, USA, May 1995. Topics: 'Human Gene Therapy and Retroviral Vectors'.

The First Symposium on Gene Therapy in Canada, Toronto, June 26-27, 1995. Topics: 'Murine Anti-HIV Models'.

University Hospitals Foundation, University of Alberta, Edmonton, Alberta, May 7, 1996. "Health Talks: Cancer Immunogene Therapy: A Futuristic Treatment Strategy"

University of Calgary, AHFMR Lecture: "HIV gene therapy and animal models".

Western Pharmacology Society 40th Annual Meeting, Feb. 9-13, 1997. "Retroviral Vectors for HIV and Cancer Gene Therapy".

National Institutes of Health, Advances in AIDS pathogenesis and Preclinical Vaccine Development: Ninth Annual Meeting of the National Cooperative Vaccine Development Groups for AIDS, May 4-7, 1997. "Development of a hu-PBL-SCID/beige mouse model for the evaluation of HIV protective immunity".

University of Toronto Molecular Medicine Seminar Series, June 3, 1997. "B7-2 and GM-CSF combination immunogene therapy in a human glioblastoma/humanized SCID mouse model".

National Institutes of Health, Office of AIDS Research, Nov. 16-18, 1997. "2nd HIV Primary Infection Workshop".

University of Florida, Division of Dermatology & Cutaneous Surgery, March 12, 1998. "Immunogene therapeutic strategies against melanoma and other tumors".

UF/Shands Outreach Series Speaker, Leesburg Regional Medical Center, Sept. 18, 1998. "HIV protective immunity in multiply-exposed but uninfected homosexual and heterosexual partners".

RPR Gencell, Hayward, California, March 5, 1999. "An improved humanized mouse-human tumor model for immunogene therapy".

Human Gene Therapy Research Institute Speaker, April. 5, 1999. "Efficacy and safety improvement of lentiviral vectors for gene therapy applications"

University of Iowa, April. 6, 1999. "Efficacy and safety improvement of lentiviral vectors for gene therapy applications".

University of Pennsylvania, June 4, 1999. "Safety and efficacy improvements of lentiviral vectors for gene therapy applications".

MLA 2001: An Information Odyssey, Orlando, Florida, May, 2001. "Cancer Gene Therapy 2001 – Hype or Hope?" Medical Library Association's Molecular Biology and Genomics Special Interest Group.

IBMS Academia Sinica, Taipei, Taiwan. July 5th, 2004, , National Cheng Kung University Medical college, Tainan, Taiwan, July 8th, Chung Shan Medical University July 8th Lecture "Lentiviral modification of dendritic cell and T cell immunity".

Chang-Gong University, Taipei, Lecture "Lentiviral immune modulation for cancer therapy - current trend and future prospect", July 7, 2004.

CSMU 3rd AIDS Symposium, Taipei, Taiwan. July 10, 2004. Lectures: "Lentiviral modification of dendritic cell and T cell immunity" and "Lentiviral siRNA applications: HIV therapy and functional genome discovery".

National Institute of Health, Thailand, Invited Lecturer "Lentiviral siRNA for HIV/AIDS therapy". July 14, 2004, Bangkok, Thailand.

National Veteran Administration Hospital, Taipei, Taiwan, July 12, 2005. Invited Lecturer "Lentiviral modulation of dendritic cell function for cancer therapy".

National Institute of Aging, NIH, Bethesda, Maryland, Invited Lecturer "Immunotherapy for cancer and HIV/AIDS". March 2007.

Shanghai Daopei Hospital, Shanghai, China, March 2008. "Immunotherapy for infectious diseases and cancer – current and future prospective"

The 19th CASPAF Annual Conference, May 24, 2008, Orlando FL. "From genes to cells to novel immunotherapies for cancer".

Bibliography

Ficht, T.A., Chang, L.-J. and Stoltzfus, C.M. (1984). Avian sarcoma virus *gag* and *env* genes contain a common amino-terminal sequence. **Proc. Natl. Acad. Sci. USA** 81, 362-366.

Chang, L.-J. and Stoltzfus, C.M. (1985). Cloning and nucleotide sequences of cDNA spanning the splice junctions of Rous sarcoma virus mRNAs. **J. Virol**. 53, 969-972.

Chang, L.-J. and Stoltzfus, C.M. (1985). Gene expression from both intronless and intron-containing Rous sarcoma virus clones is specifically inhibited by anti-sense RNA. **Mol. Cell. Biol.** 5, 2341-2348.

Perlman, S., Bolger, E., Chang, L.-J. and Stoltzfus, C.M. (1986). Synthesis of genomic and subgenomic RNA in MHV-A59 cells have different requirements for protein synthesis. **Virus Res.** 6, 261-272.

Chang, L.-J. and Stoltzfus, C.M. (1987). Inhibition of Rous sarcoma virus replication by antisense RNA. **J. Virol.** 61, 921-924.

Stoltzfus, C.M., Chang, L.-J., Cripe, T.P. and Turek, L.P. (1987). Efficient transformation by Prague A Rous sarcoma virus plasmid DNA requires the presence of *cis*-acting regions within the *gag* gene. **J. Virol.** 61, 3401-3409.

Chang, L.-J., Pryciak, P., Ganem, D. and Varmus, H.E. (1989). Biosynthesis of the reverse transcriptase of hepatitis B viruses involves *de novo* translational initiation not ribosomal frameshifting. **Nature** 337, 364-368.

Chang, L.-J., Dienstag, J., Ganem, D. and Varmus, H.E. (1989). Detection of antibodies against hepatitis B virus polymerase antigen in hepatitis B virus-infected patients. **Hepatology** 10, 332-335.

Hirsch, R., Lavine, J., Chang, L.-J., Varmus, H. E. and Ganem, D. (1990). Polymerase gene products of hepatitis B virus are required for genomic RNA packaging as well as for reverse transcription. **Nature** 344, 552-555.

Chang, L.-J., Ganem, D. and Varmus, H. E. (1990). Mechanism of translation of the hepadnaviral polymerase (P) gene. **Proc. Natl. Acad. Sci. USA** 87, 5158-5162.

Chang, L.-J., Hirsch, R., Ganem, D. and Varmus, H. E. (1990). Effects of insertional and point mutations on the functions of the duck hepatitis B virus polymerase. **J. Virol.** 64, 5553-5558.

Chang, L.-J., McNulty, E. and Martin, M. (1993). Human immunodeficiency viruses containing heterologous enhancer/promoters are replication competent and exhibit different lymphocyte tropisms. **J. Virol.** 67, 743-752.

Dimitrov. D., Willey, R., Sato, H., Chang, L.-J., Blumenthal, R. and Martin, M. (1993). Quantitation of HIV-1 infection kinetics. **J. Virol.** 67, 2182-2190.

Amendt. B. A., Hesslein, D., Chang, L.-J. and Stoltzfus, C. M. (1994). Presence of negative and positive cis-acting RNA splicing elements within and flanking the first *tat* coding exon of the human immunodeficiency virus type 1. **Mol. Cell. Biol.**14, 3960-3970.

Lawrence, R., Chang, L.-J., Siebenlist, U., Bressler, P. and Sonenshein, G. E. (1994). Vascular smooth muscle cells express a constitutive NF-kB-like activity. **J. Biol. Chem.** 269, 28913-28918.

Chang, L.-J., Chen, Y.-M. A., Chen, M.-Y., Chou, C.-C., Twu, S.-J. and Huang, L.-M. (1995). Meeting report: Xth International AIDS Meeting, Yokohama, Japan. HIV 10 years later: where do we stand now? **J. Biomedical Sci.** 2, 1-11.

Robinson, D., Elliott, J. F. and Chang, L.-J. (1995). Retroviral vector with a CMV-IE/HIV-TAR hybrid LTR gives high basal expression levels and is upregulated by HIV-1 Tat. **Gene Therapy** 2, 269-278.

Chang, L.-J. and Zhang, C. (1995). Infection and replication of Tat^- human immunodeficiency viruses: genetic analyses of LTR and *tat* mutants in primary and long-term human lymphoid cells. **Virology** 211, 157-169.

Kao, G. Y., Chang, L.-J. and Allen, T. M. (1996). Use of targeted cationic liposomes in enhanced DNA delivery to cancer cells. **Cancer Gene Therapy** 3, 250-256.

Dickie, P., Gazzinelli, R., and Chang, L.-J. (1996). Models of HIV type 1 proviral gene expression in wild-type HIV and MLV/HIV transgenic mice. **AIDS Research and Human Retroviruses** 12, 1103-1116.

Dickie, P., Mounts, P., Miller, G., Frederickson, T., Chang, L.-J. and Martin, M. A. (1996). Myopathy and spontaneous Pasteurella pneumotropica infection in a transgenic mouse model of HIV-infected disease. **J. of AIDS and Human Retrovirology** 13, 101-116.

Zhang, C., Cui, Y., Houston, S. and Chang, L.-J. (1996). Protective immunity to HIV-1 in SCID/beige mice reconstituted with peripheral blood lymphocytes of exposed but uninfected individuals. **Proc. Natl. Acad. Sci. USA** 93, 14720-14725.

Cui, Y. and Chang, L.-J. (1997). Computer-assisted, quantitative cytokine ELISPOT analysis of human immune effector cell function. **BioTechniques** 22, 1146-1149.

Zhang, C, Colin, R. and Chang, L.-J. (1997) Cell cycle inhibitory effects of HIV and SIV Vpr and Vpx in the yeast *Schizosaccharomyces pombe*. **Virology** 230, 103-112.

Parney, I. F., Petruk, K. C., Zhang, C., Farr-Jones, M. Sykes, D. and Chang, L.-J. (1997) GM-CSF and B7-2 combination immunogene therapy in an allogeneic hu-PBL-SCID mouse-human glioblastoma multiforme model. **Human Gene Therapy** 8, 1073-1085.

Kilani, R. T., Chang, L.-J., Garcia-Lloret, M., Hemmings, D., Winkler-Lowen, B. and Guilbert, L. J. (1997) Placental trophoblasts resist infection by multiple HIV-1 variants even with CMV co-infection but support HIV replication after provirus transfection. **J. Virol.** 71, 6359-6372.

Chaisomchit, S., Tyrrell, D. L. J. and Chang, L.-J. (1997). Development of replicative and non-replicative human hepatitis B virus vectors. **Gene Therapy** 4, 1330-1340.

Cui, Y. and Chang, L.-J. (1998) A rapid and reliable bioassay for functional human interleukin-12 by interferon-g ELISPOT. **Prep. Biochem. and Biotechnol.** 28 (1), 23-36.

Ghahary, A., Tredget, E. E., Chang, L.-J., Scott, P. G. and Shen, Q. (1998) Genetically modified dermal keratinocytes express high levels of transforming growth factor-b1. **The J. of Investigative Dermatology** 110, 800-805.

Chang, L.-J., V. Urlacher, T. Iwakuma, Y. Cui, and J. Zucali (1999). Efficacy and safety analyses of a recombinant human immunodeficiency virus derived vector system. **Gene Therapy** 6, 715-728.

Cui, Y., T. Iwakuma and L.-J. Chang (1999). Contributions of viral splice sites and cis-regulatory elements to lentivirus vector functions. **J. Virol.** 73, 6171-6176.

Iwakuma T., Y. Cui, and L.-J. Chang (1999). Self-inactivating lentiviral vectors with U3 and U5 modifications. **Virology** 261, 120-132.

Parney, I., M. A. Farr-Jones, L.-J. Chang and K. C. Petruk (2000). Human glioma immunobiology in vitro: implications for immunogene therapy. **Neurosurgery** 46. 1169-1177; discussion 1177-1178.

Chang, L.-J., C. Chen, V. Urlacher and Tse-fun Lee (2000). Differential apoptotic effects of primate lentivial Vpr and Vpx in mammalian cells. **Journal of Biomedical Science** 7(4): 277-338.

Higashikawa, F. and Chang, L.-J. (2001). Kinetic analyses of simple and complex retroviral vectors. **Virology**. 280: 124-131.

Parney I. F., Farr-Jones M. A. , Koshal A., Chang L.-.J, Petruk K. C. .(2002) Human brain tumor cell culture characterization after immunostimulatory gene transfer. **Neurosurgery**. 50(5): 1094-1102.

Zaiss, A.-K., S. Son and Chang, L.-J. (2002) RNA 3' readthrough of oncoretrovirus and lentivirus: implications for vector safety and efficacy. **J. Virol**. 76, 7209-7219.

Parney, I. F., Farr-Jones, M. A., Kane, K., Chang, L.-J., and Petruk, K. C. (2002) Human autologous in vitro models of glioma immunogene therapy using B7-2, GM-CSF, and IL-12. **Canadian Journal of Neurological Sciences** 29: 267-275.

Chang, L.-J. (2003) Vector integration: pest not guest. **Gene Therapy** 10: 193-194 (News and Commentary).

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Chen, X., He, J. and Chang, L.-J. (2004) Alteration of T cell immunity by lentiviral transduction of dendritic cells. **Retrovirology** 1, 37.

Chen, X. and Chang, L.-J. (2005) Mycoplasma-mediated alterations of in vitro generation and functions of human dendritic cells. **J. Biomed. Sci.** 12, 31-46.

Chang, L.-J., Liu, X. and He. J (2005) Lentiviral siRNAs targeting multiple highly conserved RNA sequences of human immunodeficiency virus type 1. **Gene Therapy** 12, 1133-44.

Oka, M., Meacham, A. M., Hamazaki, T., Rodic, N., Chang, L.-J. and Terada, N. (2005) *De novo* DNA methyltransferase Dnmt3a/3b primarily mediates the cytotoxic effect of 5-aza-2'-deoxycytidine. **Oncogene** 24, 3091-3099.

Lin, G, Hayashi, N., Carrion, R., Chang, L.-J., Lue, T.F., and Lin C.-S. (2005) Improving erectile function by silencing phosphodiesterase-5. **J. Urol**. 174, 1142-48.

He, J, Yang, Q and Chang, L.-J. (2005) DNA methylation and chromatin modifications Are coupled with lentiviral transgene silencing in murine embryonic carcinoma cells. **J. Virol. 79,** 13497-508.

Shao, P.-L., Hsueh, P.-R., Chang, L.-Y., Lu, C.-Y., Kao, C.-L., Chiang, Y.-P., Huang, H.-Y., Huang, F.-Y., Lee, C.-Y., Chang, L.-J., Wu, T.-C. and Huang, L.-M. (2005) Development of immunoglobulin G enzyme-linked immunosorbent assay for the serodiagnosis of severe acute respiratory syndrome. **J. Biomed. Sci.** 12, 59-64.

Xiong, C, Tang, D-Q, Xie, C-Q, Zhang, L., Xu, K-F, Thompson, WE, Chou, W., Gibbons, GH, Chang, L-J, Yang, L-J, Chen, YE (2005) Genetic engineering of human embryonic stem cells with lentiviral vectors. **Stem Cells and Development** 14, 367-377.

Tang, D.-Q, Lu, S., Sun, Y.-P., Rodrigues, E., Chou, W., Yang, C., Cao, L.-Z., Chang, L.-J. and Yang, L.-J. (2006) Reprogramming liver-stem WB cells into functional insulin-producing cells by persistent expression of Pdx1- and Pdx1-VP16 mediated by lentiviral vectors. **Lab. Invest.** 86, 83-93.

Parney, I. F., Chang, L.-J., Farr-Jones, M. A., Hao, C., Smylie, M., Petruk, K. C. (2006) Technical hurdles in a pilot clinical trial of combined B7-2 and GM-CSF immunogene therapy for glioblastomas and melanomas. **J. Neuro-Onco.** 78, 71-80.

Oka, M., Rodic, N., Graddy, J., Chang, L.-J. and Terada, N. (2006) CpG sites preferentially methylated by Dnmt3a in vivo. **J. Biol. Chem.** 28, 9901-9908.

Wang, B, He, J., Chen, L. and Chang, L.-J. (2006) An effective cancer vaccine modality: lentiviral modification of dendritic cells expressing multiple cancer-specific antigens. **Vaccine** 24, 3477-89.

Tang, D.-Q, Cao, L.-Z., Chou, W., Shun, L., Farag, C., Atkinson, M. A., Li, S.-W., Chang, L.-J. and Yang, L.-J. (2006) Role of Pax4 in Pdx1-VP16-mediated liver-to-endocrine pancreas transdifferentiation. **Lab. Invest.** 86, 829-41.

Chen, X., Wang, B. and Chang, L.-J. (2006) Induction of primary anti-HIV CD4 and CD8 T cell responses by dendritic cells transduced with self-inactivating lentiviral vectors. **Cellular Immunology** 243, 10-18.

Walton, N. M., Sutter, B. M., Chen, H.-X., Chang, L.-J., Roper, S. N., Scheffler, B. and Steindler, D. A. (2006) Derivation and large-scale expansion of multipotent astroglial neural progenitors from adult human brain. **Development** 133, 3671-3681.

Ryu, B.-Y. , Orwig, KE, Oatley, JM, Lin, CC, Chang, L.-J., Avarbock, MR and Brinster, RL (2007) Efficient generation of transgenic rats through the male germline using lentivrial transduction and transplantation of spermatogonial stem cells. **J. Andrology** 28, 353-360.

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Research Personnel (past and present):

Visiting Scientists - Dr. Peter Dickie, Laboratory of Molecular Microbiology, National Institute of Health, Bethesda, Maryland, USA (6/94-7/94); Dr. Rong-Long Chen, National Taiwan Univ. Taipei, Taiwan (8/94 -10/94).

Postdoctoral Fellows - Heng-Sheng Fang (6/94-2/95), Yan Cui (10/95-10/99), Tomoo Iwakuma (7/96-1/99), Zhong-Chen Kou (3/98-1/99), Koichiro Higashikawa (4/99-4/01); Fumiko Higashikawa (4/99-4/01), Christopher Cogle (MD, 8/99-8/00); Xiaochuan Chen (4/01-5/05), Xiangguo Liu (2/03-1/02), Shuhong Han (10/04-present), Matthew Cotter (10/06-1/08).

Graduate Students - Chengsheng Zhang, (PhD, 4/94-5/98); Deborah Robinson (PhD, 9/93-5/98); Ian Parney (MD, PhD, 5/95-10/98); Carlos Chen (MSc, 8/94-11/97); Sumonta Chaisomchit (PhD, 09/93-9/98); Eric Gay (Ms/MBA, 8/98-5/01); Anne Zaiss (MSc, 2/99-9/00); Sodany Son (MSc, 8/99-12/02); Jin He (PhD, 05/00-05/05); Bei Wang (PhD, 05/03-05/07); Ekta Patel (PhD, 05/06-present); Starlyn Okada (PhD, 07/07-present).

Project Students - Brad Booth (2/94-8/94); Shannah Murland (5/94-8/94 Wisest Summer Research Program); Kathie Walters (6/94-12/94); Ted Chan (9/94-5/95); Deborah Tasa (9/94-5/95), Marjorie Yang (5/95-8/95); Claudette Rondeau (7/96-5/97); Jason Howard (12/96-5/97); Anne-Katherin Zaiss (2/99-9/00); Hugh Walters (2/99-10/00, NIH awardee); Andrew Nanton (1/99-10/00, UF Summer scholarship), Bernice Lo (8/01-4/02), Rimal Patel (9/01-12/01), Jigar Patel (9/01-12/01), Aurore Lucas (9/01-2/02), Patrick Chang (9/06-2/08), Ander Bergmann (5/08-present), Kevin Hachey (1/08-present).

SSTP and Summer Students – Rebecca Fine (2008), Kyle Jones (2008), Janice Hu (2008), Jimmy Wong (2008), Yuva Chang (2008).

American Cancer Society Summer Scholar - (2001) Luisa Della Rosa, (2003) Wayne Chou.

UF Scholar - (2003) Katherine Berg.

International Visiting Scholar – Liyin Chen (2005), Lily Lien (2006), Liheng Guo (2006), Yichen Wang (2006), Yuju Huang (2007), Maline Ho (2008).

AHFMR Awarded Summer Students - John Tam, David Sykes (5/94-8/94); Lisa Dyke (co-supervised with Dr. Stan Houston), James Baughan, Christopher Rudinsky (5/95-8/95).

Research Technicians - Vicki Urlacher (4/95-3/98), Jergen Chua (10/95-3/97), Zhong Fei (7/96-3/98), and Edward Mason (6/97-5/99), Sodany Son (5/99-12/02), Adeline Deyrieux (8/01-8/02), Qing Yang (6/02-10/06), Gina Eubank (6/05-10/06), Martin Lu (5/06-5/07), Victoria Chang (5/07-11/07), Wayne Chou (5/03-7/08), Dane Winner (6/08-1/09), Shanelle Williams (2/08 –present).