

**BIOGRAPHICAL SKETCH**

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.  
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NAME Ando, Dale Genji	POSITION TITLE President Gene Editing and Gene Therapy Consulting		
eRA COMMONS USER NAME			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
Stanford University	BS	1976	Chemistry
U. Michigan Medical School	MD	1980	Medicine

Please refer to the application instructions in order to complete sections A, B, and C of the Biographical Sketch.

**A. Positions and Honors**

1980-1983 University of Michigan  
Residency in Internal Medicine, Department of Internal Medicine

1983-1986 UCLA  
Fellowship in Rheumatology, Division of Rheumatology

1986-1987 UCLA  
Instructor of Medicine, Division of Rheumatology

1987-1988 UCLA School of Medicine  
Assistant Professor of Medicine, Division of Rheumatology  
Co PI and Research Member NIH Multipurpose Arthritis Center Award 1986

1988 CETUS Corporation  
Scientist, Division of Cell Biology

1989 CETUS Corporation  
Project Director of C101 IND

1990 CETUS Corporation  
Senior Scientist, Division of Cell Biology

1990 CETUS Corporation  
Physician, Clinical Research and Development  
Project Leader MCSF In Cancer, Fungal Infections and Osteopetrosis

1992 Chiron Corporation  
Associate Director, Chiron Therapeutics and Division of Cell Biology

1994 Chiron Corporation  
Associate Director, Clinical Gene Therapy and Division of Cell Biology  
Project leader for Inex DNA/liposome collaboration, IND application or retroviral Interferon gamma In melanoma, retroviral HSV TK In Graft versus Host Disease, Phase II trial of retroviral Env vaccine In HIV patients

1996 Chiron Corporation  
Director, Clinical Development, Gene Therapy

1997 National Institute of Health '97-'01  
Member, Recombinant DNA Advisory Committee  
Adenoviral Safety committee member  
Harmonization of FDA and NIH applications Committee

1997 Cell Genesys, Inc.

Principal Investigator/Program Director (Last, First, Middle):

1998 Vice President, Clinical Research  
Phase I and II trials In T cell chimaeric receptor products In HIV and cancer  
Cell Genesys, Inc.

1999 Vice President, Clinical Research and Regulatory Affairs  
Initiated IND's In GVAX Lung, GVAX prostate and GVAX heme malignancies.  
Current Research in Molecular Therapeutics

2001 Editorial Board  
Cell Genesys, Inc.

2002-Present Vice President, Clinical Research  
Responsible for clinical development of Phase I-3GVAX programs In prostate cancer, lung cancer, pancreatic cancer, hematologic malignancies. Took over oncolytic viral clinical programs after aquirement of Calydon and GTI. Phase I/II programs with TRE selective oncolytic virus In hormone naïve prostate cancer (2002) and pan-oncolytic virus In bladder and head and neck cancer (2004).

2002-2003 Reviewer Alliance for Cancer Gene Therapy Grants  
NIH reviewer SBIR Cancer Study Section

2002 – Present Member ASGT Clinical and Regulatory Committee

2004-2017 Vice President Therapeutic Development and Chief Medical Officer Sangamo Biosciences

2105 Member FDA Advisory Committee Office of Cell and Gene Therapy  
February 2015 mtg Combined OCGT and ODAC meeting on Amgen HSV-GMCSF in Melanoma

2017 President Gene Editing And Gene Therapy Consulting

## B. Other Experience and Professional Memberships

Medical Specialty certification:

Diplomate American Board of Internal Medicine

California #G050003 1983

## C. Selected Publications

4) Ando, D.G., Sercarz, E.E., and B.H. Hahn. Mechanism of T and B cell collaboration in the in vitro production of anti-DNA antibodies in the NZB/NZW F1 murine SLE Model. *J. Immunology*. 138:3185-3190, 1987.

5) Kono, D.K., Urban, J.L., Horvath, S.J., Ando, D.G., Saavedra, R.A., and L. Hood. Two minor determinants of myelin basic protein induce Experimental Allergic Encephalomyelitis. *J. Exp. Med*. 168:213-227 1988.

6) Urban J.L., V. Kumar, C. Gomez, D. Kono, J.C. Rhim, E. Tobias, S. J. Horvath, J. Clayton, D. G. Ando, E.E. Sercarz, and L. Hood. Restricted use of T cell receptor V genes in autoimmune encephalomyelitis. *Cell* 54:577, 1988.

- 8) Clayton, J.C., G.M. Gammon, D.G. Ando, D. K. Kono, L. Hood and E.E. Sercarz. Peptide-Specific Prevention of Experimental Allergic Encephalitis: Neonatal tolerance induced to the dominant T cell determinant of Myelin Basic Protein. *J. Exp. Med* 169:1681, 1989.
- 9) Ando, D.G., Clayton, J.C., Kono, D.K., Urban, J.L., and Eli E. Sercarz. Encephalitogenic T cells in the B10.PL model of experimental allergic encephalomyelitis (EAE) are of the Th-1 lymphokine subset. *Cell. Immunol.* 124:132, 1989.
- 10) Felsher, D.W., Denis, K.A., Weiss, D., Ando, D.G. and J. Braun. A murine model for B-cell lymphomagenesis in immunocompromised hosts: C-myc-rearranged B-cell lines with a premalignant phenotype. *Cancer Research*, 50:7042, 1990.
- 11) Gammon, G., J. Klotz, D.G. Ando, and E.E. Sercarz. The T cell repertoire to a multideterminant antigen: heterogeneity in the specificity of response between individuals of the same inbred mouse strain. *J. Immunol.* 144:1570, 1990.
- 15) Nemunaitis, J., Shannon-Dorcy K., Appelbaum, F.R., Meyers, J., Owens, A., Day, R., Ando, D., O'Neill, C, Buckner, D., and J. Singer. Long term followup of patients with invasive fungal disease who received adjunctive therapy with recombinant human macrophage colony-stimulating factor. *Blood* 82(5) 1422-7, 1993
- 18) Nemunaitis J, Bohart C, Fong T, Meyer W, Edelman G, Paulson RS, Orr D, Jain V, O'Brien J, Kuhn J, Kowal KJ, Burkeholder S, Bruce J, Ognoskie N, Wynne D, Martineau D, Ando D. Phase I trial of retroviral vector-mediated interferon (IFN)-gamma gene transfer into autologous tumor cells in patients with metastatic melanoma. *Cancer Gene Ther.* 1998 Sep-Oct;5(5):292-300.
- 19) Nemunaitis J, Fong T, Burrows F, Bruce J, Peters G, Ognoskie N, Meyer W, Wynne D, Kerr R, Pippen J, Oldham F, Ando D. Phase I trial of interferon gamma retroviral vector administered intratumorally with multiple courses in patients with metastatic melanoma. *Hum Gene Ther.* 1999 May 20;10(8):1289-98.
- 21) Simons JW, Mikhak B, Chang JF, DeMarzo AM, Carducci MA, Lim M, Weber CE, Baccala AA, Goemann MA, Clift SM, Ando DG, Levitsky HI, Cohen LK, Sanda MG, Mulligan RC, Partin AW, Carter HB, Piantadosi S, Marshall FF, Nelson WG Induction of immunity to prostate cancer antigens: results of a clinical trial of vaccination with irradiated autologous prostate tumor cells engineered to secrete granulocyte-macrophage colony-stimulating factor using ex vivo gene transfer. *Cancer Res.* 1999 Oct 15;59(20):5160-8.
- 22) Nelson WG, Simons JW, Mikhak B, Chang JF, DeMarzo AM, Carducci MA, Kim M, Weber CE, Baccala AA, Goeman MA, Clift SM, Ando DG, Levitsky HI, Cohen LK, Sanda MG, Mulligan RC, Partin AW, Carter HB, Piantadosi S, Marshall FF. Cancer cells engineered to secrete granulocyte-macrophage colony-stimulating factor using ex vivo gene transfer as vaccines for the treatment of genitourinary malignancies. *Cancer Chemother Pharmacol.* 2000;46 Suppl:S67-72.

- 29) Simons JW, Carducci MA, Mikhak B, Lim M, Biedrzycki B, Borellini F, Clift SM, Hege KM, Ando DG, Piantadosi S, Mulligan R, Nelson WG, Phase I/II trial of an allogeneic cellular immunotherapy in hormone-naive prostate cancer. *Clin Cancer Res.* 2006 Jun 1;12(11 Pt 1):3394-401.
- 30) Small EJ, Carducci MA, Burke JM, Rodriguez R, Fong L, van Ummersen L, Yu DC, Aimi J, Ando D, Working P, Kirn D, Wilding G., A Phase I Trial of Intravenous CG7870, a Replication-Selective, Prostate-Specific Antigen-Targeted Oncolytic Adenovirus, for the Treatment of Hormone-Refractory, Metastatic Prostate Cancer. *Mol Ther.* 2006 May 8; [Epub ahead of print]
- 31) Lombardo A, Genovese P, Beausejour CM, Colleoni S, Lee YL, Kim KA, Ando D, Urnov FD, Galli C, Gregory PD, Holmes MC, Naldini L., Gene editing in human stem cells using zinc finger nucleases and integrase-defective lentiviral vector delivery. *Nat Biotechnol.* 2007 Nov;25(11):1298-306. Epub 2007 Oct 28.
- 32) Perez EE, Wang J, Miller JC, Jouvenot Y, Kim KA, Liu O, Wang N, Lee G, Bartsevich VV, Lee YL, Guschin DY, Rupniewski I, Waite AJ, Carpenito C, Carroll RG, Orange JS, Urnov FD, Rebar EJ, Ando D, Gregory PD, Riley JL, Holmes MC, June CH., Establishment of HIV-1 resistance in CD4+ T cells by genome editing using zinc-finger nucleases. *Nat Biotechnol.* 2008 Jul;26(7):808-16. Epub 2008 Jun 29. Gene
- 33) Pablo Tebas, M.D., David Stein, M.D., Winson W. Tang, M.D., Ian Frank, M.D., Shelley Q. Wang, M.D., Gary Lee, Ph.D., S. Kaye Spratt, Ph.D., Richard T. Surosky, Ph.D., Martin A. Giedlin, M.D., Geoff Nichol, M.D., Michael C. Holmes, Ph.D., Philip D. Gregory, Ph.D., Dale A. Ando, M.D., Michael Kalos, Ph.D., Ronald G. Collman, M.D., Gwendolyn Binder-Scholl, Ph.D., Gabriela Plesa, M.D., Ph.D., Wei-Ting Hwang, Ph.D., Bruce L. Levine, Ph.D., and Carl H. June, M.D., Editing of CCR5 in Autologous CD4 T-cells of Persons Infected with HIV *N Engl J Med* 2014; 370:901-910 March 6, 2014 DOI: 10.1056/NEJMoa1300662
- 34) Rethinking the Regulatory Infrastructure for Human Gene Transfer Clinical Trials. Jenkins CL, Bagarazzi ML, Kiem HP, Levine AJ, Ando D, June CH, Reid T, Emery DW. *Mol Ther.* 2016 Aug;24(7):1173-7. doi: 10.1038/mt.2016.133. No abstract available. PMID:
- 35) Clinical Scale Zinc Finger Nuclease-mediated Gene Editing of PD-1 in Tumor Infiltrating Lymphocytes for the Treatment of Metastatic Melanoma. Beane JD, Lee G, Zheng Z, Mendel M, Abate-Daga D, Bharathan M, Black M, Gandhi N, Yu Z, Chandran S, Giedlin M, Ando D, Miller J, Paschon D, Guschin D, Rebar EJ, Reik A, Holmes MC, Gregory PD, Restifo NP, Rosenberg SA, Morgan RA, Feldman SA. *Mol Ther.* 2015 Aug;23(8):1380-90. doi: 10.1038/mt.2015.71. Epub 2015 May 5.

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