

## Curriculum Vitae

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### PROFESSIONAL HISTORY

**Currently: Lecturer in Molecular and Cell Biology, Harvard University  
Special Advisor to the Life Science practice, Atlas Ventures**

#### **VERTEX PHARMACEUTICALS INCORPORATED, Cambridge, MA**

2000-May 2005 *President*  
1994-2000 *Sr. Vice President of Research & Development*  
Chief Scientific Officer  
Chair, Scientific Advisory Board  
1992-1994 *Vice President of Research*  
Chief Scientific Officer  
Chairman, Scientific Advisory Board

#### **BIOGEN, INC., Cambridge, MA**

1986-1992 *Vice President of Research*  
Member, Scientific Advisory Board  
Member, Biogen Senior Management Operating Team  
Member, Biogen Patent Committee  
1984-1986 *Director of Cell Biology/Immunology*

#### **ANGENICS, INC., Cambridge, MA**

1982-1984 *Director of Research*

#### **HARVARD UNIVERSITY, Cambridge, MA**

1993-present Board of Tutors, Department of Biochemistry and Molecular Biology  
1980-1983 Associate Professor of Biology  
1975-1980 Assistant Professor of Biology

#### **STANFORD UNIVERSITY MEDICAL SCHOOL, Stanford, California**

1973-1975 Postdoctoral Fellow, Immunology and Genetics

#### **UNIVERSITY OF CALIFORNIA, Berkeley, California**

1971-1973 Postdoctoral Fellow, Physical Chemistry

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### EDUCATION

SLOAN SCHOOL OF MANAGEMENT, MASSACHUSETTS INSTITUTE OF TECHNOLOGY  
Completion of Executive Management Program, 2000  
HARVARD UNIVERSITY, Cambridge, Massachusetts  
A.M., Ph.D., Biology, 1971  
RADCLIFFE COLLEGE, Cambridge, Massachusetts  
A.B., cum laude, Biology, 1969

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### BOARD MEMBERSHIPS

Perkin-Elmer, Inc., Board of Directors, 2001-present  
Infinity Pharmaceuticals, Board of Directors, 2001-present  
Mitotix Incorporated, Board of Directors, 1997-2000  
Vertex Pharmaceuticals Europe, Ltd., Board of Directors, 1997-2005  
Chair, Vertex Pharmaceuticals Incorporated Scientific Advisory Board, 1992-2000  
Vertex Pharmaceuticals Incorporated, Scientific Advisory Board, 1992-2005  
MIT Biotechnology Process Engineering Center, Advisory Board, 1995-1996  
New England Medical Center, Board of Overseers, 1993-1995  
New England Medical Center, Member, Research Committee, 1992-1995  
Biogen, Inc., Scientific Board of Directors, 1988-1992

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### **PROFESSIONAL SERVICE**

Member, Systems Biology Advisory Council, Harvard Medical School, 2003-present  
Member, Cell Biology & Pathology Advisory Council, 2000-2003  
Harvard Medical School  
Member, Scientific Advisory Committee, The Goldhirsh Foundation Brain Tumor  
Research Awards Program, 2000-present  
Member, Visiting Committee, Gillette Center for Women's Cancer, 1999-present  
Dana Farber Cancer Center  
Charles S. Mott Award Selection Committee: Member, 1996; Vice Chair, 1997  
General Motors Cancer Research Foundation  
Member, National Research Council Committee on Biotechnology, 1991-1993

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### **TEACHING EXPERIENCE, Harvard University**

Introductory Biology  
Introductory and Advanced Immunology  
Cell Biology  
Genetics  
Various tutorial topics in drug discovery

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### **BOOKS PUBLISHED**

Sato, V. L., and Gefter, M.G.  
*Cellular Immunology: Selected Readings*  
Addison-Wesley, 1981

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### **PUBLICATIONS**

- Sato, V.L. (1970) "Studies on the Chloroplast Membranes of a Mutant Strain of *Chlamydomonas reinhardi* Lacking a Photosynthetic ATPase", Tenth Annual Meeting of the American Society of Cell Biology, p. 179.
- Sato, V.L. and Levine, R.P. (1971) "Studies of a Mutant Strain of *Chlamydomonas reinhardi* with Impaired Photosynthetic Phosphorylation" Plant Physiol., 47:9.
- Sato, V.L., Levine, R.P. and Neumann, J. (1971) "Photosynthetic Phosphorylation in *Chlamydomonas reinhardi*: Effects of a Mutation Altering an ATP-synthesizing Enzyme", Biochim. Biophys. Acta, 253:437-448.
- Sato, V.L., Levine, R.P. and Neumann, J. (1972) "A *Chlamydomonas reinhardi* Mutant with no Photosynthetic ATP-forming Capacity", Proceedings of the II International Congress of Photosynthesis Research.

- Philipson, K.D., Sato, V.L. and Sauer, K. (1972) "Exciton Interaction in the Photosystem I Reaction Center from Spinach Chloroplasts: Evidence from Adsorption in Circular Dichroism Difference Spectra", Biochemistry, ii, 4591-4595.
- Cantor, H., Simpson, E., Sato, V.L., Fathman, C.G. and Herzenberg, L.A. (1974) "Characterization of Subpopulations of T Lymphocytes. I. Separation and Functional Studies of Peripheral T Lymphocytes Binding Different Amounts of Thy 1.2 (Theta) Antibody Using a Fluorescence Activated Cell Sorter (FACS)" Cell Immunol., 15:180-196.
- Sato, V.L., Waksal, S.D. and Herzenberg, L.A. (1976) "Identification and Separation of pre-T Cells from nu/nu Mice: Differentiation by Preculture with Thymic Reticuloepithelial Cells", Cell Immunol., 24:173-185.
- Stout, R.D., Waksal, S.D., Sato, V.L., Okumura, K. and Herzenberg, L.A. (1976) "Functional Studies of Lymphoid Cells Defined and Isolated by a Fluorescence Activated Cell Sorter (FACS) from Normal and Athymic Mice", in Leukocyte Membrane Determinants Regulating Immune Reactivity, (V.P. Eijssvoogel et al eds.) Academic Press, New York.
- Herzenberg, L.A., Okumura, K., Cantor, H., Sato, V.L., Shen, F.W. and Boyse, E.A. (1976) "T-cell Regulation of Antibody Responses: Demonstration of Allotype-specific Helper T-cells and their Specific Removal by Suppressor T-cells", J. Exp. Med., 144:330-344.
- Wysocki, L.J. and Sato, V.L. (1978) "'Panning' for Lymphocytes: A Method for Cell Selection", Proc. Natl. Acad. Sci. USA, 75:2844-2848.
- Silverstone, A.E., Rosenberg, N., Baltimore, D., Sato, V.L., Schied, M.P. and Boyse, E.A. (1978) "Correlating Terminal Deoxynucleotidyl Transferase and Cell Surface Markers in the Pathway of Lymphocyte Ontogeny", in Differentiation of Normal and Neoplastic Hemopoietic Cells, (B. Clarkson, P.A. Marks and J.B. Till, eds.) Cold Spring Harbor Laboratory, Cold Spring Harbor, New York, pp. 433-453.
- Sato, V.L. (1980) "Markers of Early Lymphocyte Differentiation", in The Immune System: Function and Therapy of Dysfunction, (A. Eskol and C. Doria eds.) Academic Press, New York.
- Shinefeld, L., Sato, V.L. and Rosenberg, N. (1980) "Monoclonal Rat Anti-Mouse Brain Antibody Detects Abelson Murine Leukemia Virus Target Cells in Mouse Bone Marrow", Cell, 20:11-17.
- Howard, G., Abmayr, S., Shinefeld, L.A., Sato, V.L. and Elgin, S.C.R. (1981) "Monoclonal Antibodies Against a Specific Nonhistone Chromosomal Protein of *Drosophila* Associated with Active Genes", J. Cell Biol., 88:219-225.
- Paige, C.J., Kincade, P.W., Shinefeld, L.A. and Sato, V.L. (1981) "Precursors of Murine B Lymphocytes. Physical and Functional Characterization and Distinction from Myeloid Stem Cells", J. Exp. Med., 153:154-165.
- Siden, E., Alt, F., Shinefeld, L., Sato, V.L. and Baltimore, D. (1981) "Synthesis of Immunoglobulin Gene Products in pre-B Cells and B-lymphocytes During Murine Embryonic Development", Proc. Natl. Acad. Sci. USA, 78:1823-1827.
- Wysocki, L.J. and Sato, V.L. (1981) "The Anti-p-azophenylarsonate Cross-reactive Idiotypic Family of Strain A Mice Includes Members with no Reactivity Toward p-azophenylarsonate", Eur. J. Immunol., 11:832-839.
- Nemazee, D.A. and Sato, V.L. (1982) "Enhancing Antibody: A New Component of the Immune Response", Proc. Natl. Acad. Sci. USA, 79:3828-3832.

- Lipsick, J., Serunian, L., Sato, V.L. and Kaplan, N.O. (1982) "Differentiation and Activation of nu/nu Splenic T-cell Precursors by Mature Peripheral T-cells in the Absence of a Thymus", J. Immunol., 129:40-45.
- Margolies, M.N., Wysocki, L.J. and Sato, V.L. (1983) "Immunoglobulin Idiotype and Anti-idiotype Utilize the Same Variable Region Genes Irrespective of Antigen Specificity", J. Immunol., 130:515-517.
- Margolies, M.N., Jusezak, E., Near, R., Marshak-Rothstein, A., Sato, V.L., Siekevitz, M., Smith, J., Wysocki, L.J. and Gefter, M.L. (1983) "Structural Correlates of Idiotype in the Arsonate System", Proc. N.Y. Academy, 418:48-64.
- Nemazee, D.A. and Sato, V.L. (1983) "Induction of Rheumatoid Antibodies in the Mouse: Regulated Production of Autoantibody in the Secondary Humoral Response", J. Exp. Med., 158:529-545.
- Wysocki, L.J., Margolies, M.N., Huang, B., Nemazee, D.A., Wechsler, D., Sato, V.L., Smith, J. and Gefter, M. (1985) "Combinational Diversity within Variable Regions Bearing the Predominant anti-paraazophenyl Idiotype of Strain A Mice", J. Immunol., 134:2740-2747.
- Schlomchik, M.J., Nemazee, D.A., Sato, V.L., van Snick, J., Carson, D.A. and Weigert, M.G. (1986) "Variable Region Sequences of Murine IgM anti-IgG<sub>1</sub> Monoclonal Autoantibodies (Rheumatoid Factors): A Structural Explanation for the High Frequency of IgM and anti-IgG B Cells", J. Exp. Med., 166:407-427.
- Ho, D.D., Sarngadharan, M.G., Hirsch, M.S., Schooley, R.T., Rota, T.R., Kennedy, R.C., Chanh, T.C. and Sato, V.L. (1987) "Human Immunodeficiency Virus Neutralizing Antibodies Recognize Several Conserved Domains on the Envelope Glycoproteins", J. Virology, 61:2024-2028.
- Blumberg, R.S., Hartshorn, K.L., Paradis, T., Vogt, M., Ho, D.D., Hirsch, M.S., Leban, J., Sato, V.L. and Schooley, R.T. (1987) "Detection of Antibody Dependent Cell Mediated Cytotoxicity (ADCC) Against Human Immunodeficiency Virus (HIV) Infected Cells", J. of Infectious Diseases, 156:878-884.
- Navia, M.A., Sato, V.L. and Tung, R.D. (1995) "Design of VX-478, a Potent Inhibitor of HIV Protease", International Antiviral News, 3:143-145.
- Gu, Y., Keisuke, K., Tsutsui, H., Ku, G., Hsiao, K., Fleming, M., Hayashi, N., Higashino, K., Okamura, H., Nakanishi, K., Kurimoto, M., Ikeda, M., Flavell, R.A., Sato, V.L., Harding, M.W., Livingston, D.L., and Su, M.S.-S. (1997) "Activation of Interferon- $\gamma$  Inducing Factor Mediated by Interleukin- $1\beta$  Converting Enzyme", Science, 275(5297) 206-209.
- Murcko, M., Caron, P. and Sato, V.L., "The Application of Biophysics to Drug Design, circa 1997: Fun with Genomics, Screening and Combi-chem" (1998) Rational Molecular Design in Drug Research: Proceedings of a symposium held at the Royal Danish Academy of Sciences and Letters, June 8-12, 1997: Alfred Benson Symposium 42:369-380.
- Sato, V.L., (1999) "Women in Biotechnology: Finding a Place", Women in Science and Engineering; Annals of the New York Academy of Sciences, 869:189-190.