

CURRICULUM VITAE

LAWRENCE STEINMAN, M. D.

Born: November 14, 1947, Los Angeles, California
Child: Jonathan Baruch

Education

B.A. Dartmouth College, 1964-1968
Major: Physics; Minor: Russian, Phi Beta Kappa, Magna Cum Laude
M.D. Harvard University, 1968-1973
NIH Fellow Chemical Neurobiology at Harvard Medical School, 1970-1971

Post-graduate Training

Internship: 1973 Stanford University Hospital, Surgery
Resident: 1974 Stanford University Hospital, Pediatrics
Resident: 1977-1980 Stanford University Hospital, Pediatric and Adult Neurology

Fellow: 1975-1977 Weizmann Institute of Science, Chemical Immunology
1975-1976 Aharon Katzir Katchalsky Fellow
1976-1977 National Institutes of Health Visiting Fellow

Academic Posts

Assistant Professor: 1980-1985 Stanford University, Departments of Neurology and Pediatrics
Associate Professor: 1985-1991 Stanford University, Departments of Neurology, Pediatrics and Genetics
Professor 1994-1997 Weizmann Institute of Science
Professor 1991-present Stanford University, Departments of Neurology and Neurological Sciences, Pediatrics and Genetics
Chair 2002-present Stanford University Program in Immunology

Professional Awards

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| 1979 | S. Weir Mitchell Award, American Academy of Neurology |
| 1981-1986 | Teacher-Investigator Award, National Institutes of Health (5 yr award) |
| 1988-2002 | Senator Jacob Javits Neuroscience Investigator Award from Congress of the United States and National Institutes of Health |
| 1994 | Dr. Friedrich Sasse Award for Outstanding Contributions in Immunology from the Free University of Berlin |
| 2004 | John M. Dystel Prize for Outstanding Contributions in Multiple Sclerosis Research, National MS Society & the American Academy of Neurology |

Professional Organizations

American Academy of Neurology
 American Neurological Association
 American Association of Immunologists
 Clinical Immunology Society

Board Certification

American Board of Psychiatry and Neurology (Neurology), 1984

Patents [partial list]

Immunotherapy of Autoimmune Disease, US Patent Number 4,695,459, issued 9/22/87.
 Polypeptide Pertussis Toxin Vaccine, US Patent Number 5,000,952, issued 3/19/91.
 Anti-T-Cell Receptor Determinants as Autoimmune Disease Treatment,
 Patent Serial 635202 (Australia), 3/18/93,
 European Application 89 401190.7-2116, allowed 3/27/95. Patent EP 0340109B1.
 T cell receptor variable transcripts as disease related markers.
 US patent 5667967 9/16/97.
 Treatment of central nervous system inflammatory disease with matrix metalloprotease
 inhibitors.
 US Patent 5532265, issue 7/2/96.
 DNA Vaccination for induction of suppressive T cell response.
 US patent 5,939,400, issued 8/17/99.
 Treatment of Demyelinating Disease with Ordered Peptide, US patent 6531130

Administrative Posts

Organizer of the following conferences:

Midwinter Immunology Conference, Asilomar, CA	1986
FASEB Autoimmunity Meeting, Vermont	1990
National Multiple Sclerosis Meeting, "Immunologic Tolerance", Santa Fe	1991

Advisory Committees and Study Sections:

Advisory Committee on Pertussis Immunization, National Institute of Medicine,	1987-1990
Fellowship Advisory Committee, National Multiple Sclerosis Society	1988-1991
Medical and Scientific Advisory Committees Myasthenia Gravis Foundation	1983-
present	
Medical Advisory Committee, Muscular Dystrophy Association	1990-present
Medical Advisory Committee, National Multiple Sclerosis Society	1990-1995
Task Force on Genetics, Muscular Dystrophy Association	1990-present
Member Immunological Sciences Study Section, NIH	1991-1995
Chairman, Interdepartmental Program in Immunology Stanford	2002-
present	

Editorial Posts

International Immunology, Transmitting Editor	1988-present
Journal of Immunology, Associate Editor	1991-1995
Neurobiology of Disease, Associate Editor	1998-present

Business Positions

Centocor, Board of Directors 1991-1999, when sold to Johnson and Johnson

Neurocrine Biosciences, Founder 1992-present, Board of Directors, Scientific Advisory Board

Roche Biosciences, Scientific Advisory Board 1998-2002

Neuronyx, 2000-present Board of Directors and Scientific Advisory Board

Bayhill Therapeutics, Founder 2001-present, Head of SAB, and member of Board of Directors

BIBLIOGRAPHY

Journals

1. Budin J and Steinman L. Theory of transfinite numbers. In: *Research Papers in Mathematics* (R.E. Gaskill, ed.), National Science Foundation and Oregon State University, 1963, pp 9-31.
2. Lam DMK and Steinman L. Uptake of gamma-aminobutyric acid in the goldfish retina. *Proceedings of the National Academy of Sciences USA*, 68:2777, 1971.
3. Steinman L and Ames A. The sites of synthesis and the subsequent migration of newly synthesized protein in retina. *Tissue and Cell*, 6:137, 1971.
4. Steinman L. Maldistribution of physicians in Yugoslavia. *Journal of Medical Education*, 49:182, 1974.
5. Steinman L, Cohen I, Teitelbaum D, and Arnon R. Regulation of auto sensitization to encephalitogenic myelin basic protein by macrophage-associated and soluble antigen. *Nature*, 265:173, 1977.
6. Teitelbaum D, Steinman L and Sela M. Unprimed spleen cell populations recognize macrophage-bound antigen with opposite net electrical charge. *Proceedings of the National Academy of Sciences USA*, 74:1693, 1977.
7. Lonai P and Steinman L. Physiological regulation of antigen binding to T cells: Role of a soluble macrophage factor and of interferon. *Proceedings of the National Academy of Sciences USA*, 74:5662, 1977.
8. Steinman L, Cohen I, Teitelbaum D, Glickman E and Arnon R. Regulation of autoimmunity by the mode of presentation of autoantigen to lymphocytes. In: *Regulatory Mechanisms in Lymphocyte Activation*. DO Lucas (ed), New York Academic Press, p. 728, 1977.
9. Lonai P, Steinman L, Zeicher M and Puri I. Physiological regulation of the H-2 complex. *Cellular Immunology*, 27:341, 1977.
10. Steinman L, Tzehoval E, Cohen I, Segal S, and Glickman E. Sequential interactions of macrophages, initiator T lymphocytes and recruited T lymphocytes in cell-mediated responses to soluble antigen. *European Journal of Immunology*, 8:29, 1978.
11. Lonai P, Ben-Neriah Y, Steinman L, and Givol D. Selective participation of immunoglobulin V region and major histocompatibility complex products in antigen binding T cells. *European Journal of Immunology*, 8:827, 1978.
12. Sogg R, Steinman L, Rathjen B, Tharp B and O'Brien J. Cherry red spot myoclonus syndrome. *Ophthalmology*, 86:1861, 1979.
13. Steinman L, Cohen I and Teitelbaum D. Natural occurrence of thymocytes with receptors for myelin basic protein. *Neurology (Minneapolis)*, 30:755, 1980.

14. Steinman L, Dorfman L, Tharp B, Forno L, Kelts K, O'Brien J and Sogg R. Peripheral neuropathy in the cherry red spot-myoclonus syndrome (Sialidosis Type 1). *Annals of Neurology*, 7:450-456, 1980.
15. Lonai P, Puri I, Zeicher M and Steinman L. Regulation of antigen binding to T cells: The role of products of adherent cells, and the H-2 restrictions of the antigen bound. In: *Advances in Experimental Medicine and Biology*. MR Escobar and H Friedman (eds), New York, Plenum Press, pp. 451-458, 1980
16. Chan CC, Sogg RL and Steinman L. Isolated oculomotor palsy after measles immunization. *American Journal of Ophthalmology*, 89:446, 1980.
17. Steinman L, Smith ME and Forno LS. Genetic control of susceptibility to experimental allergic neuritis and the immune response to P₂ protein. *Neurology (Minneapolis)*, 31:950-954, 1981.
18. Lonai P, Steinman L, Friedman V, Drizlikh G and Puri J. Specificity of antigen binding by T cells: Competition between soluble and Ia associated antigen. *European Journal of Immunology*, 11:382-387, 1981.
19. Steinman L, Rosenbaum JT, Sriram S and McDevitt HO. *In vivo* effects of antibodies to immune response gene products: Prevention of experimental allergic encephalitis. *Proceedings of the National Academy of Sciences USA*, 78:7111-7114, 1981.
20. Steinman L. Neurologic complications of routine immunization. *Western Journal of Medicine*, 137:315, 1982
21. Steinman L, Sriram S, Adelman NE, Zamvil S, McDevitt HO and Urich H. Murine model for pertussis vaccine encephalopathy: Linkage to H-2. *Nature*, 299:738-740, 1982.
22. Sriram S, Solomon D, Rouse RV and Steinman L. Identification of T cell subsets and B lymphocytes in mouse brain EAE lesions. *Journal of Immunology*, 129:1649, 1982.
23. Steinman L, Clancy RR, Cann H and Urich H. Neuropathology of propionic acidemia. *Developmental Medicine and Child Neurology*, 25:87-94, 1983.
24. Waldor M, Sriram S, McDevitt HO and Steinman L. *In vivo* therapy with monoclonal anti I-A antibody suppresses immune response to acetylcholine receptor. *Proceedings of the National Academy of Sciences USA*, 80:2713-2717, 1983.
25. Steinman L, Solomon D, Zamvil S, Lim M and Sriram S. Prevention of EAE with anti I-A antibody: Decreased accumulation of radiolabeled lymphocytes in the central nervous system. *Journal of Neuroimmunology*, 5:91-97, 1983.
26. Sriram S and Steinman L. Anti I-A antibody suppresses active encephalomyelitis: Treatment model for IR gene linked diseases. *Journal of Experimental Medicine*, 158: 1362-1367, 1983.
27. Sriram S, Schwartz G and Steinman L. Myelin basic protein coupled spleen cells prevent EAE. *Cellular Immunology*, 75:378-382, 1983.
28. Dave P, Curless RG and Steinman L. Cerebellar hemorrhage complicating methylmalonic and propionic acidemia. *Archives of Neurology*, 41:1293-1296, 1984.

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33. Sriram S and Steinman L. Postinfectious and postvaccinial encephalomyelitis.. In: *Neurology Clinics*. Saunders, Philadelphia, 2:341-353, 1984.
34. Steinman L, Sriram S and Waldor MK. Therapy of autoimmune diseases with antibodies to immune response gene products. *Clinical Immunology Newsletter*, Vol. 5, 3:43-45, 1984.
35. Steinman L, Trotter J, Waldor MK and Sriram S. New approaches to therapy of autoimmune disease. In: *Concepts in Immunopathology*. J. Cruse (ed). Karger, Basel, Vol. 1, pp. 85-95, 1985.
36. Shalev R and Steinman L. Whooping cough immunization: The experiments and the lessons. *Harefuah (Journal of the Israel Medical Association)*, 109:47-49, 1985.
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38. Steinman L. Introduction to Immunotherapy. *Annual Course, Neuroimmunology-Virology*. American Academy of Neurology, pp 15-30, 1985.
39. Waldor MK, Hardy R, Herzenberg LA, Herzenberg LA, Lanier L, Sriram S, Lim M and Steinman L. Reversal of EAE with monoclonal antibody to a T cell subset marker (L3T4). *Science*, 227:415-417, 1985.
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43. Zamvil S, Nelson P, Mitchell D, Knobler R, Fritz R and Steinman L. Encephalitogenic T cell clones specific for myelin basic protein: An unusual bias in antigen presentation. *Journal of Experimental Medicine*, 162:2107-2124, 1985.
44. Novotny E, Singh G, Wallace D, Dorfman LJ, Louis A, Sogg R and Steinman L. Leber's disease and dystonia: A mitochondrial disease. *Neurology*, 36(8):1053-1060, 1986.
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50. Steinman L, Weiss A, Adelman N, Lim M, Zuniga R, Oehlert J, Hewlett E, Falkow S and Zamvil S. Molecular analysis of pertussis vaccine encephalopathy. In: *Vaccines 86, Modern Approaches to Immunization*. R Lerner, R Channock and F Brown (eds). Cold Spring Harbor, pp. 187-190, 1986.
51. Steinman L. *Neuroimmunology Update, Scientific Basis of Neurology*. American Academy of Neurology, 1986 Course, pp. 43-50.
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55. Steinman L. Monoclonal antibodies and therapy of multiple sclerosis. In: *Multiple Sclerosis*. FC Rose (ed). John Libbey, London, pp 57-61, 1987.

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58. Bell JI, Steinman L, Toyka K and McDevitt HO. HLA-DQ restriction fragment length polymorphisms in myasthenia gravis. *Annals of the New York Academy of Science*, 505:655-668, 1987.
59. Steinman L, Kitamura K, Zuniga R, Lim M and Peroutka S. Experimental murine pertussis vaccine encephalopathy. In: *Clinical Neuroimmunology*. J Aarli, W Behan & PO Behan (eds). Blackwells, Oxford, pp. 156-161, 1987
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67. Trotter J, Zamvil S and Steinman L. Comparison of antigen specificity, class II MHC restriction, and *in vivo* behavior of myelin basic protein T cell lines and clones derived from (BALB/c x SJL/J)F1 mice. *Journal of Immunology*, 139:1834-1839, 1987.
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74. Wilner A, Steinman L, Lavie P, Peled R, Friedmann A and Brautbar C. Narcolepsy in Israeli Jews is associated exclusively with the HLA-DR2,Dw2 haplotype. *Human Immunology*, 21:15-22, 1988.
75. Sinha AA, Brautbar C, Szafer F, Friedmann A, Tzfon E, Todd JA, Steinman L and McDevitt HO. A newly characterized HLA-DQ allele associated with pemphigus vulgaris. *Science*, 239:1026-1029, 1988.
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96. Sakai K, Mitchell DJ, Hodgkinson SJ, Zamvil SS, Rothbard JB and Steinman L. Prevention of experimental encephalomyelitis with peptides that block interaction of T cells with major histocompatibility complex proteins. *Proceedings of the National Academy of Sciences USA*, 86:9470-9474, 1989.
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100. Scharf S, Friedmann A, Brautbar C, Szafer F, Steinman L, Hom G and Erlich H. HLA class II allelic variation and susceptibility to pemphigus vulgaris. *Proceedings of the Tenth International Histocompatibility Conference, Immunology of HLA*, (Vol. 2). B. Dupont (ed). Springer-Verlag, New York, 1989.
101. Sinha AA, Brautbar C, Szafer F, Friedmann A, Tzfon E, Todd J, Steinman L and McDevitt HO. Characterization of HLA-DR beta and HLA-DQ beta alleles associated with pemphigus vulgaris. In: *Immunobiology of HLA*, (Vol.2). B Dupont (ed). Springer-Verlag, New York, pp 426-428, 1989.
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105. Zamvil S and Steinman L. Autoimmune demyelinating disease. *Western Journal of Medicine*, 150:355-356, 1989.
107. Zamvil S, Nelson PA, Steinman L and Mitchell D. Treatment of autoimmune encephalomyelitis with an antibody to T cell receptor beta chain. In: *Cellular Basis of Immune Modulation*. JG Kaplan (ed). Alan R. Liss, New York, pp 461-464, 1989.

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