

CURRICULUM VITAE

Ellen V. Rothenberg

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Education:

Harvard University, Cambridge, Massachusetts
September 1969-June 1972. A.B. summa cum laude in Biochemical Sciences, 1972
Harvard University--Massachusetts Institute of Technology, Boston, Massachusetts
September 1972-January 1973. Joint program in Health Sciences and Technology
Courses toward M.D. (no degree)
Massachusetts Institute of Technology, Cambridge, Massachusetts
Department of Biology and Center for Cancer Research
September 1972-January 1977. Ph.D. in Cell Biology, 1977 (advisor: David Baltimore)
Memorial Sloan-Kettering Cancer Center, New York, New York
Department of Cell Surface Immunogenetics
November 1977-September 1979. Postdoctoral (advisor: Edward A. Boyse)

Positions Held:

Albert Billings Ruddock Professor of Biology—California Institute of Technology, Division of Biology, Pasadena, CA, April 2007-present
Professor of Biology--California Institute of Technology, Division of Biology, Pasadena, CA, September 1994-present
Associate Professor of Biology--California Institute of Technology, Division of Biology, Pasadena, California, July 1988-August 1994.
Assistant Professor of Biology--California Institute of Technology, Division of Biology, Pasadena, California, June 1982-June 1988
Assistant Research Professor--The Salk Institute for Biological Studies, Department of Cancer Biology, September 1979-May 1982
Postdoctoral Research Fellow--Memorial Sloan-Kettering Cancer Center, New York, New York, November 1977-September 1979
Research Associate--Center for Cancer Research, Massachusetts Institute of Technology (advisor: David Baltimore), February 1977-October 1977

Honors and Awards:

Fellow, American Academy of Arts and Sciences, elected 2018
Fellow, American Association for the Advancement of Science, elected 2017

Richard P. Feynman Prize for Excellence in Teaching, 2016
 American Association of Immunology Distinguished Lectureship, 2014
 NIH Director's Wednesday Afternoon Lecture, Feb 2010
 Associated Students of Caltech (ASCIT) Award for Excellence in Undergraduate Teaching, 1998
 & 2007
 Ferguson Prize for Undergraduate Teaching, 1995 & 1999
 Biology Undergraduate Students Advisory Committee Award for Excellence in Teaching, 1988,
 2001, 2004, and 2014
 Jane Coffin Childs Memorial Fund for Medical Research Postdoctoral Fellowship, 1977-1979
 National Science Foundation Predoctoral Fellowship, 1973-1976
 Phi Beta Kappa, 1971; A.B. summa cum laude, 1972, Harvard University
 National Merit Scholar, 1969

Special Lectureships (selected recent) and Invited Teaching:

Faculty, American Association of Immunologists Advanced Course in Immunology, July 1996
 Faculty, Japanese Society for Immunology summer immunology course, 2004
 Faculty, AAI Advanced Immunology Course, July 2005, July 2006.
 Faculty, Gene Regulatory Networks course, Marine Biological Laboratory, Woods Hole, MA.
 2008 – present.
 Faculty, RIKEN Institute Summer Program in Immunology (Yokohama, Japan), 2009
 Invited “guru”, NIH intramural Immunology Interest Group retreat, 2011.
 Visiting Professor, Chiba University Graduate School of Medicine, 2012-2019.
 Keynote speaker, ESH-EHA conference on T-cell Acute Lymphoblastic Leukemia, Lisbon, 2013
 Presidential Symposium speaker, International Society for Experimental Hematology, Vienna,
 2013
 Faculty member and RIKEN IMS-JSI Symposium speaker, RIKEN Institute Summer Program in
 Immunology, Yokohama, Japan, 2014
 Keynote speaker, RECOMB-ISCB meeting on Regulatory and Systems Genomics, San Diego,
 Nov. 2014
 Keynote speaker, Walter & Eliza Hall Institute Centenary Symposium, July 2015
 Watson Lecturer, California Institute of Technology, November 2015
 Distinguished Lecturer, Edythe & Eli Broad CIRM Center for Regenerative Medicine and Stem
 Cell Research at the University of Southern California, April 2017.
 Keynote speaker, Cold Spring Harbor Workshop on Single Cell Analysis, November 2017.
 Keynote Speaker, David Wells Memorial Symposium, University of Alabama Birmingham,
 December 2017

Professional Societies:

American Association of Immunologists
 International Society for Experimental Hematology
 AAAS

Committee Memberships, Editorial Boards, and Advisory Panels

Council Member--Midwinter Conference of Immunologists, 1/1981-1/1986

Member of review committee--American Cancer Society (California Division) Postdoctoral Fellowship Program, 9/1982-8/1985

Associate Editor, *Journal of Molecular and Cellular Immunology*, 1984-

Associate Editor, *Journal of Immunology*, 7/1986-6/1991

Associate Editor, *Molecular Reproduction and Development*, 1987-1997

Member, Awards Committee, American Association of Immunologists, 7/1986-6/1989

Member, Immunological Sciences Study Section, Division of Research Grants, National Institutes of Health/Public Health Service, 9/1988-6/1992

Program (Block) Chairman, American Association of Immunologists, T Cells (Block B), 1989-1992

Member of review committee--American Cancer Society (California Division) Postdoctoral Fellowship Screening Panel, 9/1992-7/1995 (2nd term)

American Institute of Biological Sciences Scientific Working Group and Peer Review Panel to NASA: Physiological and Anatomical Rodent Experiment.04, 1992-1994

Member, Scientific Advisory Board, Hereditary Disease Foundation, 5/1991-2/1995

Member, NIAID-NIA Task Force on Immunology and Aging, 1994

International Union of Immunology Societies designated reporter for 9th International Congress of Immunology, 1995

Member, National Research Council panel for review of Howard Hughes Medical Institute Predoctoral Fellowships in the Biological Sciences, 1996

Editorial Board Member, *Journal of Clinical Immunology*, 1997-2000

Editorial Board Member, *Developmental and Comparative Immunology*, 1997-2000

Member, External Advisory Board, The Lerner Research Institute (Cancer Center), Cleveland Clinic Foundation, 1997-2003

External Advisory Board, Institute of Molecular Biology, Academia Sinica, Taipei, Taiwan, 2001

Founding organizer, Aegean Conference on Gene Regulation in Lymphocyte Development, and co-chairman, 2002-2004

Section Editor, *Journal of Immunology*, 2004-2006

Associate Editor, *Immunity*, January 2005 – present

Scientific Advisory Board, La Jolla Institute for Allergy and Immunology: 2005 – 2017.

Program (Block) Co-Chairman, American Association of Immunologists, Hematopoiesis and Immune System Development, 2007-2010.

External Advisory Board, second appointment, Institute of Molecular Biology, Academia Sinica, Taipei, Taiwan, 2008

Editorial Board member, *Immunological Reviews*, 2009—present.

Co-organizer, FASEB summer conference “Molecular Mechanisms of Lymphocyte Differentiation”, 2009

Organizer, AbCam sponsored symposium on Transcriptional Mechanisms of Early Lymphocyte Development, November 2009

14th International Congress of Immunology Program Committee, 2010

Faculty of 1000, 2010-2016

Program Committee, Aegean Conference on Pathways, Networks and Systems Medicine, 2010-.

American Association of Immunologists Nominating Committee Chairman, 2009-2010

Co-organizer, FASEB summer conference “Molecular Mechanisms of Immune Cell Development & Function” 2011

Scientific Advisory Board member, Institute for Systems Biology, Seattle, WA, 2012—present.
 External Scientific Advisory Board, SyMMyS: Centre of Excellence in Molecular Systems Immunology and Physiology Research, the Academy of Finland, 2012-2017.
 Lead organizer, FASEB summer conference “Molecular Mechanisms of Lymphocyte Development & Function”, 2013
 Scientific Advisory Board member, Max Planck Institute of Immunobiology and Epigenetics, Freiburg, Germany, 2014-2019.
 Co-organizer, Wellcome Trust Genome Science Center Single Cell Biology meetings, Cambridge, UK 2016, 2018.
 Editorial Board, *Wiley Interdisciplinary Reviews (WIREs) in Systems Biology & Medicine*, 2016-
 Editorial Advisory Board Member, *Science Immunology*, 2016 - .
 Editorial Board, *Experimental Hematology*, International Society for Experimental Hematology, 2017-- .

Site visitor and ad hoc reviewer for NCI, NIA, and CSR (NIH); NASA; other agencies

Publications:

1. Rothenberg, E. and D. Baltimore. 1976. Synthesis of long, representative DNA copies of the murine RNA tumor virus genome. *J. Virol.* **17**, 168-174. PMID: PMC515400
2. Haseltine, W. A., D. G. Kleid, A. Panet, E. Rothenberg and D. Baltimore. 1976. Ordered transcription of RNA tumor virus genomes. *J. Mol. Biol.* **106**, 109-131.
3. Rothenberg, E. and D. Baltimore. 1977. Increased length of DNA made by virions of murine leukemia virus at limiting magnesium ion concentration. *J. Virol.* **21**, 168-178. PMID: PMC353803
4. Rothenberg, E., D. Smotkin, D. Baltimore and R. A. Weinberg. 1977. *In vitro* synthesis of infectious DNA of murine leukemia virus. *Nature (London)* **269**, 122-126.
5. Rothenberg, E., D. J. Donoghue and D. Baltimore. 1978. Analysis of a 5' leader sequence on murine leukemia virus 21S RNA; heteroduplex mapping with long reverse transcriptase products. *Cell* **13**, 435-451.
6. Donoghue, D. J., E. Rothenberg, N. Hopkins, D. Baltimore and P. A. Sharp. 1978. Heteroduplex analysis of the nonhomology region between Moloney MuLV and the dual host range derivative HIX virus. *Cell* **14**, 959-970.
7. Shields, A., O. N. Witte, E. Rothenberg and D. Baltimore. 1978. High frequency of aberrant expression of Moloney murine leukemia virus in clonal interactions. *Cell* **14**, 601-609.

8. Baltimore, D., E. Gilboa, E. Rothenberg and F. Yoshimura. 1979. Production of a discrete infectious, double-stranded DNA by reverse transcription in virions of Moloney leukemia virus. *Cold Spring Harbor Symp. in Quant. Biol.* **43**, 869-874.
9. Rothenberg, E. and E. A. Boyse. 1979. Synthesis and processing of molecules bearing thymus leukemia antigen. *J. Exp. Med.* **150**, 777-791. PMID: PMC2185687
10. Rothenberg, E. 1980. Expression of differentiation antigens in subpopulations of mouse thymocytes: regulation at the level of de novo synthesis. *Cell* **20**, 1-9.
11. Michaelson, J., E. Rothenberg and E. A. Boyse. 1980. Genetic polymorphism of murine β_2 -microglobulin detected biochemically. *Immunogenetics* **11**, 93-95.
12. Rothenberg, E. and D. Triglia. 1980. *In vitro* maintenance of differentiation marker synthesis by subpopulations of mouse thymocytes. *Proc. 1980 ICN-UCLA Symp. on Control of Cellular Division and Development and J. Supramolec. Struct.* **14**, 371-382.
13. Triglia, D. and E. Rothenberg. 1981. "Mature" thymocytes are not glucocorticoid-resistant *in vitro*. *J. Immunol.* **127**, 64-68.
14. Rothenberg, E. and D. Triglia. 1981. Structure and expression of glycoproteins controlled by the *Qa-1^a* allele. *Immunogenetics* **14**, 455-468.
15. Rothenberg, E. 1982. A specific biosynthetic marker for immature thymic lymphoblasts: active synthesis of thymus-leukemia antigen restricted to proliferating cells. *J. Exp. Med.* **155**, 140-154. PMID: PMC2186575
16. Rothenberg, E. 1982. What is the role of T-lymphocyte surveillance in neoplastic disease? *Am. J. Surgery* **143**, 664-669.
17. Rothenberg, E. and D. Triglia. 1983. Lyt-2 glycoprotein is synthesized as a single molecular species. *J. Exp. Med.* **157**, 365-370. PMID: PMC2186898
18. Rothenberg, E. and D. Triglia. 1983. Clonal proliferation unlinked to terminal deoxynucleotidyl transferase synthesis in thymocytes of young mice. *J. Immunol.* **130**, 1627-1633.
19. Rothenberg, E., B. Caplan, J. Trotter and D. Triglia. 1984. Thymic lymphoblasts: heterogeneity and developmental fates. In *Recognition and Regulation in Cell-Mediated Immunity*. J. D. Watson and J. Marbrook (Eds.). Marcel Dekker, Inc., New York, pp. 61-86.
20. Caplan, B. and E. Rothenberg. 1984. High-level secretion of interleukin-2 by a subset of proliferating thymic lymphoblasts. *J. Immunol.* **133**, 1983-1991.

21. Haas, M., A. Altman, E. Rothenberg, M. H. Bogart and O. W. Jones. 1984. Mechanism of T-cell lymphomagenesis: transformation of growth-factor-dependent T-lymphoblastoma cells to growth-factor-independent T-lymphoma cells. *Proc. Natl. Acad. Sci. USA* **81**, 1742-1746. PMID: PMC344995
22. Rothenberg, E., B. Caplan and R. D. Sailor. 1984. Toward a molecular basis for growth control in T-lymphocyte development. In *Molecular Biology of Development*. UCLA Symposia on Molecular and Cellular Biology, New Series, Vol. 19. E. H. Davidson and R. A. Firtel (Eds.). Alan R. Liss, Inc., New York, pp. 511-525.
23. Lugo, J. P., S. N. Krishnan, R. D. Sailor, P. Koen, T. Malek and E. Rothenberg. 1985. Proliferation of thymic stem cells with and without receptors for interleukin-2: implications for intrathymic antigen recognition. *J. Exp. Med.*, **161**, 1048-1062. PMID: PMC2187600
24. Rothenberg, E. and J. P. Lugo. 1985. Differentiation and cell division in the mammalian thymus. *Dev. Biol.* **112**, 1-17.
25. Lugo, J. P., S. N. Krishnan, R. Diamond Sailor and E. V. Rothenberg. 1986. Early precursor thymocytes can produce interleukin 2 upon stimulation with calcium ionophore and phorbol ester. *Proc. Natl. Acad. Sci. USA* **83**, 1862-1866. PMID: PMC323184
26. Novak, T. J. and E. V. Rothenberg. 1986. Differential transient and long-term expression of DNA sequences introduced into T lymphocyte lines. *DNA* **5**, 439-451.
27. Kinnon C., R. A. Diamond and E. Rothenberg. 1986. Activation of T-cell antigen receptor α and β chain genes in the thymus. Implications for the lineages of developing cortical thymocytes. *J. Immunol.* **137**, 4010-4015.
28. Rothenberg, E. V., C. Kinnon, K. L. McGuire, J. P. Lugo and R. A. Diamond. 1987. Activation of receptor and response genes in T lymphocyte development. In *Molecular Approaches to Developmental Biology*, UCLA Symposia on Molecular and Cellular Biology, New Series, Vol. 51. R. A. Firtel and E. H. Davidson (Eds.). Alan R. Liss, Inc., New York, pp. 453-467.
29. Haas, M., A. Altman, E. Rothenberg, M. H. Bogart and O. W. Jones. 1987. Radiation leukemia virus and x-irradiation induce in C57BL/6 mice two distinct T-cell neoplasms: a growth factor-dependent lymphoma and a growth factor-independent lymphoma. *Leukemia Res.* **11**, 223-239.
30. McGuire, K. L. and E. V. Rothenberg. 1987. Inducibility of interleukin-2 (IL2) RNA expression in individual mature and immature T lymphocytes. *EMBO J.* **6**, 939-946. PMID: PMC553486

31. Kinnon, C., K. L. McGuire and E. V. Rothenberg. 1987. Differential regulation of T-cell receptor gamma genes in immature thymocyte populations. *Eur. J. Immunol.* **17**, 1265-1269.
32. Boyer, P. D. and E. V. Rothenberg. 1988. Interleukin-2 receptor inducibility is blocked in cortical-type thymocytes. *J. Immunol.* **140**, 2886-2892.
33. McGuire, K. L., J. A. Yang and E. V. Rothenberg. 1988. Influence of activating stimulus on functional phenotype: interleukin-2 mRNA accumulation differentially induced by ionophore and receptor ligands in subsets of murine T cells. *Proc. Natl. Acad. Sci. USA* **85**, 6503-6507. PMID: PMC282001
34. Rothenberg, E. V., K. L. McGuire, and P. D. Boyer. 1988. Molecular indices of functional competence in developing T cells. *Immunol. Rev.* **104**, 29-53.
35. Boyer, P. D., R. A. Diamond and E. V. Rothenberg. 1989. Changes in inducibility of interleukin-2 receptor alpha chain and T-cell receptor expression during thymocyte differentiation in the mouse. *J. Immunol.* **142**, 4121-4130.
36. Rothenberg, E. V. 1989. The long road to functional maturity for developing T cells. *Immunology Today* **10**, 116-117.
37. Rothenberg, E. V. and D. DeLuca. 1990. Discussion summary: Lymphocyte evolution and development. In *Defense Molecules*, UCLA Symposia on Molecular and Cellular Biology, New Series, Vol. 121. J. J. Marchalonis and C. Reinisch (Eds.). Alan R. Liss, Inc., New York, pp. 235-239.
38. Rothenberg, E. V., R. A. Diamond, K. A. Pepper and J. A. Yang. 1990. Interleukin-2 gene inducibility in T cells prior to T-cell receptor expression: changes in signaling pathways and gene expression requirements during intrathymic maturation. *J. Immunol.* **144**, 1614-1624.
39. Rothenberg, E. V., R. A. Diamond, T. J. Novak, K. A. Pepper and J. A. Yang. 1990. Mechanisms of effector lineage commitment in T lymphocyte development. In *Developmental Biology*, UCLA Symposia on Molecular and Cellular Biology, New Series, Vol. 125. E. H. Davidson, J. Ruderman and J. Posakony (Eds.). Alan R. Liss, Inc., New York, pp. 225-249.
40. Rothenberg, E. V. 1990. Death and transfiguration of cortical thymocytes: A reconsideration. *Immunol. Today* **11**, 116-119.
41. Novak, T. J., P. M. White, and E. V. Rothenberg. 1990. Regulatory anatomy of the murine interleukin-2 gene. *Nucl. Acids Res.* **18**, 4523-4533. PMID: PMC331273

42. Rothenberg, E. V. 1990. Developmental shifts in signaling pathways for lymphokine production and growth response. In *Forum on Interleukins and T-Cell Development*, C. Martinez-A., (Ed.). Research in Immunology **141**, 289-293.
43. Novak, T. J. and E. V. Rothenberg. 1990. cAMP inhibits induction of IL2 but not of IL4 in T cells. *Proc. Natl. Acad. Sci. USA* **87**, 9353-9357. PMID: PMC55163
44. Novak, T. J., D. Chen, and E. V. Rothenberg. 1990. Interleukin 1 synergy with phosphoinositide pathway agonists for induction of interleukin 2 gene expression: Molecular basis of costimulation. *Mol. Cell. Biol.***10**, 6325-6334. PMID: PMC362908
45. Rothenberg, E. V., D. Chen, R. A. Diamond, M. Dohadwala, T. J. Novak, P. M. White, and J. A. Yang-Snyder. 1991. Acquisition of mature functional responsiveness in T cells: Programming for function via signaling. In: *Mechanisms of Lymphocyte Activation and Immune Regulation III*, S. Gupta, W. C. Paul, M. D. Cooper, and E. V. Rothenberg (Eds.). Plenum Publishing Corp., New York, NY, pp. 71-83.
46. Rothenberg, E. V. 1991. Cell separation and analysis: a strategic overview. *Methods: A Companion to Methods in Enzymology* **2**, 168-172.
47. Novak, T. J., F. K. Yoshimura, and E. V. Rothenberg. 1992. *In vitro* transfection of fresh thymocytes and T cells shows subset-specific expression of viral promoters. *Mol. Cell. Biol.* **12**, 1515-1527. PMID: PMC369593
48. Rothenberg, E. V. 1992. The development of functionally responsive T cells. *Adv. Immunol.* **51**, 85-214.
49. Chen, D. and E. V. Rothenberg. 1993. Molecular basis for developmental changes in interleukin-2 gene inducibility. *Mol. Cell. Biol.* **13**, 228-237. PMID: PMC358902
50. Yang-Snyder, J. A. and E. V. Rothenberg. 1993. Developmental and anatomical patterns of IL-2 gene expression *in vivo* in the murine thymus. *Devel. Immunol.* **3**, 85-102. PMID: PMC2275923
51. Rothenberg, E. V., D. Chen, and R. A. Diamond. 1993. Functional and phenotypic analysis of thymocytes in SCID mice: evidence for functional response transitions before and after the SCID arrest point. *J. Immunol.* **151**, 3530-3546.
52. Garrity, P. A., D. Chen, E. V. Rothenberg and B. J. Wold. 1994. IL-2 transcription is regulated *in vivo* at the level of coordinated binding of both constitutive and regulated factors. *Mol. Cell. Biol.* **14**, 2159-2169. PMID: PMC358576
53. Rothenberg, E. V. and R. A. Diamond. 1994. Costimulation by interleukin-1 of multiple activation responses in a developmentally restricted subset of immature thymocytes. *Eur. J. Immunol.* **24**, 24-33.

54. Chen, D. and E. V. Rothenberg. 1994. Interleukin-2 transcription factors as molecular targets of cAMP inhibition: delayed inhibition kinetics and combinatorial transcription roles. *J. Exp. Med.* **179**, 931-942. PMID: PMC2191402
55. Rothenberg, E. V. 1994. Signaling mechanisms in thymocyte selection. *Curr. Opin. Immunol.* **6**, 257-265.
56. Rothenberg, E. V., R. A. Diamond, and D. Chen. 1994. Programming for recognition and programming for response: separate developmental subroutines in the murine thymus. *Thymus* **22**, 215-244.
57. Lindenboim, L., R. Diamond, E. Rothenberg, and R. Stein. 1995. Apoptosis induced by serum-deprivation of PC12 cells is not preceded by growth arrest and can occur at each phase of the cell cycle. *Cancer Res.* **55**, 1242-1247.
58. Scherer, L. J., R. A. Diamond, and E. V. Rothenberg. 1995. Developmental regulation of cAMP signaling pathways in thymocyte development. *Thymus* **23**, 231-257.
59. Reya, T., J. A. Yang-Snyder, E. V. Rothenberg, and S. R. Carding. 1996. Regulated expression and function of IL2/IL15R- β (CD122) during lymphoid development. *Blood* **87**, 190-201.
60. Rothenberg, E. V. 1995. Developmental biology of lymphocytes. *The Immunologist* **3**, 172-175.
61. Rothenberg, E. V. and Ward, S. B. 1996. A dynamic assembly of diverse transcription factors integrates activation and cell-type information for interleukin-2 gene regulation. *Proc. Natl. Acad. Sci. USA* **93**, 9358-9365. PMID: PMC38432
62. Rothenberg, E. V. 1996. How T cells count. *Science* **273**, 78-79.
63. Diamond, R. A., Ward, S. B., Owada-Makabe, K., Wang, H., and Rothenberg, E. V. 1997. Different developmental arrest points in RAG-2^{-/-} and *scid* thymocytes on two genetic backgrounds: developmental choices and cell death mechanisms before TCR gene rearrangement. *J. Immunol.* **158**, 4052-4064.
64. Yang-Snyder, J. A., and Rothenberg, E. V. 1998. Spontaneous expression of interleukin-2 *in vivo* in specific tissues of young mice. *Devel. Immunol.* **5**, 223-245. PMID: PMC2275993
65. Wang, H., Diamond, R. A., and Rothenberg, E. V. 1998. Cross-lineage expression of Ig- β (B29) in thymocytes: positive and negative gene regulation to establish T-cell identity. *Proc. Natl. Acad. Sci. USA* **95**, 6831-6836. PMID: PMC22652

66. Rothenberg, E. V. 1998. Gene regulation in T-cell lineage commitment. In: *Molecular Biology of B-Cell and T-Cell Development*, J. G. Monroe and E. V. Rothenberg (Eds.), Humana Press, Totowa, NJ, pp.337-365.
67. Ward, S. B., Hernandez-Hoyos, G., Chen, F., Waterman, M., Reeves, R., and Rothenberg, E. V. 1998. Chromatin remodeling of the interleukin-2 gene: distinct alterations in the proximal versus distal enhancer regions. *Nucl. Acids Res.* **26**, 2923-2934. PMID: PMC147656
68. Wang, H., Diamond, R. A., Yang-Snyder, J. A., and Rothenberg, E. V. 1998. Precocious expression of T-cell functional response genes *in vivo* in primitive thymocytes before T-lineage commitment. *Int. Immunol.* **10**, 1623-1635.
69. Chen, F., Chen, D., and Rothenberg, E. V. 1999. Specific regulation of Fos family transcription factors in thymocytes at two developmental checkpoints. *Int. Immunol.* **11**, 677-688.
70. Rothenberg, E. V., Telfer, J. C., and Anderson, M. K. 1999. Transcriptional regulation of lymphocyte lineage commitment. *BioEssays* **21**, 726-742.
71. Anderson, M. K. and Rothenberg, E. V. 2000. Transcription factor expression in lymphocyte development: Clues to the evolutionary origins of lymphoid cell lineages? *Curr. Top. Microbiol. Immunol.* **248**, 137-155.
72. Anderson, M. K., Hernandez-Hoyos, G., Diamond, R. A., and Rothenberg, E. V. 1999. Precise developmental regulation of Ets family transcription factors during specification and commitment to the T cell lineage. *Development* **126**, 3131-3148.
73. Hernandez-Hoyos, G., Sohn, S. J., Rothenberg, E. V., and Alberola-Ila, J. 2000. Lck activity controls CD4/CD8 T-cell lineage commitment. *Immunity* **12**, 313-322.
74. Rothenberg, E. V., Ward, S. B., Yui, M., Hernandez-Hoyos, G., Chen, F., Bardhan, S., Chen, R., Hotz, R., and Yang-Snyder, J. A. 2001. Developmental specificity of interleukin-2 expression. In: S. Umlauf & B. Beverly, (eds.) *Interleukin-2 (IL-2) Transcription*. Landes Biosciences, Austin, TX & eureka.com.
75. Telfer, J. C. and Rothenberg, E. V. 2001. Expression and function of a stem-cell promoter for the murine CBF α 2 gene: distinct roles and regulation in natural killer and T cell development. *Devel. Biol.* **229**, 363-382.
76. Rothenberg, E. V. 2000. Stepwise specification of lymphocyte developmental lineages. *Curr. Opin. Genet. Dev.* **10**, 370-379.
77. Yui, M. A., Hernandez-Hoyos, G., and Rothenberg, E. V. 2001. A new regulatory region of the murine IL-2 locus that confers position-independent transgene expression. *J. Immunol.* **166**, 1730-1739.

78. Makita, T., Hernandez-Hoyos, G., Chen, T. H.-P., Wu, H., Rothenberg, E. V., and Sucov, H. M. 2001. A developmental transition in definitive erythropoiesis: erythropoietin expression is sequentially regulated by retinoic acid receptors and HNF4. *Genes Dev.* **15**, 912-924. PMID: PMC312661
79. Chen, F., Rowen, L., Hood, L., and Rothenberg, E. V. 2001. Differential transcriptional regulation of individual T-cell receptor V β segments before gene rearrangement. *J. Immunol.* **166**, 1771-1780.
80. Anderson, M. K., Sun, X., Miracle, A. L., Litman, G. W., and Rothenberg, E. V. 2001. Evolution of hematopoiesis: three members of the PU.1 transcription factor family in a cartilaginous fish, *Raja eglanteria*. *Proc. Natl. Acad. Sci. USA* **98**, 553-558. PMID: PMC14625
81. Miracle, A. L., Anderson, M. K., Litman, R. T., Walsh, C. J., Luer, C. A., Rothenberg, E. V., and Litman, G. W. 2001. Complex expression patterns of lymphocyte-specific genes during the development of cartilaginous fish implicate unique lymphoid tissues in generating an immune repertoire. *Int. Immunol.* **13**, 567-580.
82. Rothenberg, E. V. 2001. Notchless T cell maturation?. *Nat. Immunol.* **2**, 189-190.
83. Rothenberg, E. V. 2001. Commentary: Mapping of complex regulatory elements by pufferfish/zebrafish transgenesis. *Proc. Natl. Acad. Sci. USA* **98**, 6540-6542. PMID: PMC34387
84. Anderson, M. K., Weiss, A. H., Hernandez-Hoyos, G., Dionne, C. J., and Rothenberg, E. V. 2002. Constitutive expression of PU.1 in fetal hematopoietic progenitors blocks T cell development at the pro-T cell stage. *Immunity* **16**, 285-296.
85. Rothenberg, E. V. and Davidson, E. H. 2003 (Nov 2002). Regulatory cooptions in the evolution of deuterostome immune systems. In: R. A. B. Ezekowitz & J. A. Hoffmann (eds.) *Innate Immunity*. Humana Press, Totowa, N. J. Chapter 4, pp. 61-87.
86. Rothenberg, E. V. and Anderson, M. K. 2002. Elements of transcription factor network design for T-lineage specification. *Devel. Biol.* **246**, 29-44.
87. Anderson, M. K., Hernandez-Hoyos, G., Dionne, C. J., Arias, A. M., Chen, D., and Rothenberg, E. V. 2002. Definition of regulatory network elements for T-cell development by perturbation analysis with PU.1 and GATA-3. *Devel. Biol.* **246**, 103-121.
88. Rothenberg, E. V. 2002. T lineage specification and commitment: a gene regulation perspective. *Semin. Immunol.* **14**, 431-440.

89. Rothenberg, E. V., Telfer, J. C., and Yui, M. A. 2003. T cell developmental biology. *In*: W. E. Paul (ed.) *Fundamental Immunology, 5th Edition*. Lippincott/Williams & Wilkins. Chapter 9, pp. 259-301.
90. Rothenberg, E. V. and Dionne, C. J. 2002. Lineage plasticity and commitment in T-cell development. *Immunol. Rev.* **187**, 96-115.
91. Hernández-Hoyos, G., Anderson, M. K., Wang, C., Rothenberg, E. V., and Alberola-Ila, J. 2003. GATA-3 expression is controlled by TCR signals and regulates CD4/CD8 differentiation. *Immunity* **19**, 83-94.
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