

BIOGRAPHICAL SKETCH

NAME John J. Rossi, Ph.D.		POSITION TITLE Lidow Family Research Chair and Professor, Division Molecular Biology Dean, Graduate School of Biological Sciences	
eRA COMMONS USER NAME JROSSI			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
University of New Hampshire, NH	B.A.	1969	Biology
University of Connecticut, CT	M.S.	1971	Microbial Genetics
University of Connecticut, CT	Ph.D.	1976	Microbial Genetics
Brown University, Providence, RI	Postdoc	1976-1979	Biology and Medicine

A. Positions and Honors

Positions and Employment

1980 - 1984	Assist. Res. Scientist, Dept. of Mol. Genetics, City of Hope Res. Institute, Duarte, CA
1984 - 1989	Assoc. Res. Scientist, Dept. of Mol. Genetics, Beckman Res. Institute of City of Hope, Duarte, CA
1988 - 1992	Assoc. Chairman, Div. of Biology, Beckman Res. Institute of City of Hope, Duarte, CA,
1990 - 1994	Res. Scientist, Dept. of Mol. Genetics, Beckman Res. Institute of City of Hope, Duarte, CA,
1990 - 1994	Director, Dept. of Mol. Genetics, Beckman Res. Institute of City of Hope, Duarte, CA
1992 - 1994	Chairman, Div. of Biology, Beckman Res. Institute of City of Hope, Duarte, CA
1994 - 1996	Assoc. Director, Ctr. for Molecular Biology and Gene Therapy, Loma Linda University, Loma Linda, CA
1996 - 1996	Director, Ctr. for Mol. Biology and Gene Therapy, Loma Linda University, Loma Linda, CA
1996 - 2001	Director, Dept. of Mol. Biology, Section Head, Gene Regulation, Beckman Res. Institute of City of Hope, Duarte, CA
1994 - present	Adjunct Prof., Div. of Biology and Dept. of Hematology, BMT, City of Hope National Medical Center, Duarte, CA
1996 - present	Adjunct Prof., Dept. of Biochemistry and Microbiology, Loma Linda Univ., Loma Linda, CA
1998 - present	Dean, Graduate School of Biological Sciences, Beckman Research Institute of the City of Hope, Duarte, CA.
2001 - present	Assoc. Director for Basic Research, City of Hope Comprehensive Cancer Center, City of Hope National Medical Center, Duarte, CA.
2001 - present	Assoc. Chair, Share Resources Advisory Committee, City of Hope Comprehensive Cancer Center, City of Hope National Medical Center, Duarte CA.
2001 - present	Co-Program Director, Cancer Biology Program, City of Hope Comprehensive Cancer Center, City of Hope National Medical Center, Duarte, CA.
2001 - present	Adjunct Prof., Div. of Biomedical Sciences, Univ. of California, Riverside, Riverside, CA
2001 - present	Chair and Prof., Division of Mol. Biology, Beckman Research Institute of the City of Hope, Duarte, CA.

Honors and Awards

1990	Walter MacPherson Society Research Award, Loma Linda Univ. School of Medicine
1991	American Association for Clinical Chemistry Outstanding Speaker Award
1993	Gallery of Scientific and Medical Achievement, City of Hope National Medical Center
2002	Merit Award, Division of AIDS, National Institute of Allergy and Infectious Diseases

B. Selected peer-reviewed publications (in chronological order).

1. Gu, S., Ji, J., Kim, J.D., Yee, J.-K., and **Rossi, J.J.** (2006) Inhibition of infectious HIV-1 virions via lentiviral vector encoded short antisense RNAs. *Oligonucleotides* **16**: 287-295
2. Kolb, G., Reigadas, S., Castanotto, D., Ventura, M., **Rossi, J.J.** and Toulme, J.-J. (2006) Endogenous Expression of an Anti-TAR Aptamer Reduces HIV-1 Replication. *RNA Biol.* **3**(4): 150-156.
3. Kim, D.H. and **Rossi, J.J.** (2007) Strategies for silencing human disease using RNA interference. *Nat. Rev. Genetics* **8**(3): 173-184.
4. Saetrom, P., Heale, B., Snove, O. Aagaard, L. and **Rossi, J.J.** (2007) Distance constraints between microRNA target sites dictate efficacy and cooperativity. *Nucl. Acids Res.* **35**(7): 2333-2342.

5. Heidel, J.D., Liu, J.Y.-C., Yen, Y., Zhou, B., Heale, B.S.E., **Rossi, J.J.**, Bartlett, D.W. and Davis, M.E. (2007) Potent siRNA Inhibitors of Ribonucleotide Reductase Subunit RRM2 Reduce Cell Proliferation *In vitro* and *In vivo*. *Clin. Cancer Res.* **13**(7): 2207-2215.
6. Aagaard, L., Amarzguioui, M., Sun, G., Santos, L.C., Ehsani, A., Prydz, H. and **Rossi J.J.** (2007) A Facile Lentiviral Vector System for Expression of Doxycycline-Inducible shRNAs: Knockdown of the Pre-miRNA Processing Enzyme Drosha. *Mol. Ther.* **15**(5): 938-945.
7. Scherer, L., Frank, R. and **Rossi, J.J.** (2007) Optimization and Characterization of tRNA-shRNA Expression Constructs. *Nucl. Acids Res.* **35**(8): 2620-2628.
8. Anderson, J., Li, M.-J., Palmer, B., Remling, L., Li, S., Yam, P., Yee, J.-K., **Rossi, J.J.**, Zaia, J. and Akkina, R. (2007) Safety and Efficacy of a Lentiviral Vector Containing Three Anti-HIV Genes-CCR5 Ribozyme, Tat-rev siRNA, and TAR Decoy in SCID-hu mouse-Derived T Cells. *Mol. Ther.* **15**: 1182-1188.
9. Aagaard, L. and **Rossi, J.J.** (2007) RNAi Therapeutics: Principles, Prospects and Challenges. *Adv. Drug Delivery Rev.* **59**: 75-86.
10. Saetrom, P., Snove, O. and **Rossi, J.J.** (2007) Epigenetics and MicroRNAs. *Pediatric Res.* **61**(5 Pt 2): 17R-23R.
11. Scherer, L., **Rossi, J.J.** and Weinberg, W.S. (2007) Review, Progress and Prospects: RNA-based therapies for treatment of HIV infection. *Gene Ther.* **14**(14): S1057-1064.
12. Cantin, E. M. and **Rossi, J.J.** (2007) News and Views: Molecular Medicine – Entry Granted. *Nature* **448**: 33-34.
13. Castanotto, D., Sakurai, K., Lingeman, R., Li, H., Shively, L., Aagaard, L., Soifer, H., Gatignol, A., Riggs, A. and **Rossi, J.J.** (2007) Combinatorial delivery of small interfering RNAs reduces RNAi efficacy by selective incorporation into RISC. *Nucl. Acids Res.* **35**(15): 5154-5164.
14. Held, D.M., Kissel, J.D., Thacker, S.J., Michalowski, D., Saran, D., Ji, J. Hardy, R.W., **Rossi, J.J.** and Burke, D.H. (2007) Cross-clade inhibition of recombinant HIV-1 HIV-2 and SIVcpz reverse transcriptases by RNA pseudoknot aptamers. *J. Virol.* **81**(10): 5375-5374.
15. Sano, M., Li, H., Nakanishi, M. and **Rossi, J.J.** (2007) Expression of Long Anti-HIV1 Hairpin RNAs for the Generation of Multiple siRNAs: Advantages and Limitations. *Mol. Ther.* **16**: 170-177.
16. Soifer, H., **Rossi, J.J.** and Saetrom, P. (2007) MicroRNAs in disease and potential therapeutic applications. *Mol. Ther.* **15**: 2070-2079.
17. Unwalla, H and **Rossi J.J.** (2008) Tat-regulated Expression of RNA Interference: Triggers for the Treatment of HIV Infection. *Current HIV/AIDS Reports* **5**(1): 40-43.
18. **Rossi, J.J.** and Scherer, L.J. (2008) In *RNA and the Regulation of Gene Expression*, pp. 201-226, (Ed. Morris, K.V.) Caister Academic Press, Norfolk, NJ. Therapeutic Potential of RNA-mediated Control of Gene Expression: Options and Designs.
19. Amarzguioui, M and **Rossi, J.J.** (2007) Principles of Dicer Substrate (D-siRNA) Design and function. *Methods Mol. Biol.* **442**: 3-10.
20. Morris, K.V. and **Rossi, J.J.** (2007) In *Concepts in Genetic Medicine*, pp. 207-222, (Eds. B. Dropulic and B. Carter) John Wiley & Sons, Inc., Hoboken, NJ. Lentiviral Vector Delivery of RNAi Triggers for the Treatment of HIV-1 Infection.
21. Zhou, J., Li, H., Li, S., Zaia, J. and **Rossi J.J.** (2008) Novel dual inhibitory function aptamer-siRNA delivery system for HIV-1 therapy. *Mol. Ther.* **16**(8): 1481-1489.
22. **Rossi, J.J.** and Scherer, L.J. (2007) In *Gene and Cell Therapy: Therapeutic Mechanisms and Strategies*, Taylor & Francis, CRC Press Inc., Boca Raton, FL. RNA interference based gene therapy strategies for the treatment of HIV infection. (In Press)
23. Scherer, L. and **Rossi, J.J.** (2008) RNA Based Therapies for Treatment of HIV Infection. *Therapeutic Oligo.* (In Press)
24. **Rossi, J.J.** (2008) Expression Strategies for Short Hairpin RNA Interference Triggers. *Hum. Gene Ther.* (In Press)
25. **Rossi, J.J.** and Kim, D. (2008) RNAi Mechanisms and Applications. *Bio Techniques* (In Press)
26. Zhou, J. and **Rossi, J.J.** (2008) Bivalent Aptamers Deliver the Punch. *Chem. & Biol.* **15** 644-645.

C. Research Support

Ongoing Research Support

R37 AI29329 Rossi (PI)

7/1/07 - 6/30/12

NIH

Merit Award, Division of AIDS, National Institute of Allergy and Infectious Diseases

Title: Enhancing the Intracellular Functioning of anti-HIV RNAs

The major goals of this project are: 1) mechanism of action studies, primary cell testing and SCID-NOD mouse toxicity studies of HIV-1 colocalized ribozyme constructs; 2) functional analysis of the nucleolar trafficking of HIV RNAs and regulatory proteins and *in vivo* selection for anti-HIV nucleolar localized ribozymes.

Role: Principal Investigator

RO1 AI042552 Rossi (PI)

1/1/98 - 2/28/11

NIH

Combinatorial use of anti-HIV RNA-based Therapeutics

The specific aims of this project are: 1) development of new strategies for multiplexing anti-HIV gene expression; 2) expression strategies and mechanism of action studies; 3) evaluation of *in vivo* hematopoietic repopulation capabilities and resistance to viral challenge of vector transduced macaque CD34⁺ hematopoietic progenitor cells.

Role: Principal Investigator

R01 HL074704 Rossi (PI)

4/1/08 - 3/31/12

NIH

Expression of Anti-HIV siRNA in Blood Cells

The overall goal of this project is to test the hypothesis that siRNA can be used as an anti-HIV-1 agent in hematopoietic stem cell gene therapy. The research focus of this proposal is the optimization of siRNA function and expression from lentiviral vector backbones.

R01 HL091219 Torbett (PI)

9/24/07 - 11/30/12

NIH

Anti-HIV Gene Delivery to Human Hematopoietic Cells

Major goals for this proposal are to investigate toxicity and function of lentiviral vector delivered, proven gene-based HIV-1 disruption modalities in human hematopoietic stem cells, myeloid and CD4⁺T cells.

Role: Co-Investigator - Rossi, J.

5P30 CA33572 Krontiris (PI)

12/1/02 - 11/30/08

NCI

Beckman Research Institute of the City of Hope Cancer Center Support Grant

The major goals of this project are: 1) stimulate collaborative research interactions between basic science and clinical investigators and between research groups in different areas of investigation; 2) facilitate and enhance established interdisciplinary programs in basic and clinical research; 3) develop and support core research; 4) supports the development of new investigators and/or new programs of high scientific merit

Role: Director - Program A

R01 HL077847 Bhatia (PI)

7/1/05 - 6/30/09

NIH

Human Hematopoietic Cell Transformation by BCR/ABL

To investigate critical molecular mechanisms underlying human stem and progenitor cell transformation by the BCR/ABL gene in CML.

Role: Co-Investigator - Rossi, J.

R01 DK078424 Kay (PI)

9/30/06 - 8/31/10

NIH

Studies on RNAi based delivery in Vivo

Major goals of this study are to understand the mechanism of liver toxicity induced by Pol III expressed shRNAs.

Role: Co-Investigator - Rossi, J.

Forman (PI)

1/1/08 - 12/31/10

W. M. Keck Foundation

Antibody-Directed Polymeric Particles, Small Interfering Ribonucleic Acids (siRNAs)

This project will develop siRNAs against critical genes in B cell lymphoma identified through the use of RNA libraries of lymphoma cell lines, and test them in a cyclodextran delivery system using antibody mediated targeting

Role: Project Leader

Completed Research Support

PO1 CA30206 Forman (PI)

4/1/95 - 3/31/05

NIH

Hematopoietic Cell Transplantation for Hematologic Malignancy

The goals for Project V are to evaluate HIV vector-mediated delivery of anti-HIV ribozyme gene into stem cells, followed by autologous stem cell transplantation (ASCT) for the treatment of AIDS lymphoma.

Role: Co-Investigator - Project V