CURRICULUM VITAE

Philip Rudolph Johnson, Jr., M.D.

Room 1216B
Abramson Research Center
Children's Hospital of Philadelphia
3615 Civic Center Boulevard
Philadelphia, PA 19104-4318

Phone: 267-426-0351
Fax: 267-426-0363
E-mail: johnsonphi@chop.edu

I. GENERAL INFORMATION

Date & Place of Birth

July 15, 1954 / Goldsboro, NC

Education

1972 – 1976 University of North Carolina at Chapel Hill
BA Chemistry & Interdisciplinary Studies, with Highest Honors

1976 – 1980 University of North Carolina School of Medicine
Doctor of Medicine

Residency & Fellowship

1980 – 1983 Residency in Pediatrics, Vanderbilt University, Nashville, TN

1983 – 1985 Fellowship, Pediatric Infectious Diseases, Vanderbilt University

1983 – 1985 Medical Staff Fellow, Laboratory of Infectious Diseases, NIAID/NIH, Bethesda, MD (assigned to Vanderbilt University)

Board Certification

1985 American Board of Pediatrics, General Pediatrics (No. 32633)

1994 American Board of Pediatrics, Pediatric Infectious Diseases (No. 50295)

2002 Re-certified No. 50295

Medical Licensure

1981 Tennessee (No. MD013482 - inactive)

1985 North Carolina (No. 29196)

1991 Ohio (No. 35-06-1707)

II. EMPLOYMENT AND APPOINTMENTS

2007 - present	Chief Scientific Officer and Executive Vice President, Children's Hospital of Philadelphia, Philadelphia, PA
2005 - present	Director, Joseph Stokes Research Institute and Edmond Notebaert Chair in Pediatric Research, Children's Hospital of Philadelphia
2005 - present	Professor, Department of Pediatrics, University of Pennsylvania School of Medicine, Philadelphia, PA
2005 - 2007	Chief Scientific Officer and Senior Vice President, Children's Hospital of Philadelphia, Philadelphia, PA
2002 - 2004	Director, Center for Gene Therapy, Columbus Children's Research Institute, Columbus Children's Hospital, Inc., Columbus, OH
1996 - 2004	President, Columbus Children's Research Institute, Columbus Children's Hospital, Inc., Columbus, OH
	Vice-Chair for Research, Department of Pediatrics, College of Medicine and Public Health, The Ohio State University, Columbus, OH
1995 - 2004	Director, Division of Molecular Medicine, Department of Pediatrics, College of Medicine and Public Health, The Ohio State University, Columbus, OH
	Professor, Department of Veterinary Biosciences, College of Veterinary Medicine, The Ohio State University, Columbus, OH
1991 - 2004	Henry G. Cramblett Chair in Medicine, College of Medicine and Public Health, The Ohio State University, Columbus, OH
	Professor, College of Medicine and Public Health (Departments of Pediatrics and Medical Microbiology and Immunology), The Ohio State University, Columbus, OH
	Attending Physician, Children's Hospital, Columbus, OH
1989 - 1991	Research Associate Professor and Head, Retroviral Pathogenesis Section, Division of Molecular Virology and Immunology, Department of Microbiology, Georgetown University School of Medicine, Rockville, MD
1987 - 1989	Research Assistant Professor, Division of Molecular Virology and Immunology, Department of Microbiology, Georgetown University School of Medicine
1985 - 1991	Guest Worker, Laboratory of Infectious Diseases, NIAID, NIH, Bethesda, MD (on sabbatical from Vanderbilt University, 1985-1987)
1985 - 1987	Instructor, Department of Pediatrics, Vanderbilt University Hospital, Nashville, TN

III. HONORS AND AWARDS

Fellow, American Academy of Microbiology (Elected, 2005)
Edmond F. Notebaert Chair, The Children's Hospital of Philadelphia (Selected, 2005)
Fellow, American Association for the Advancement of Science (Elected, 2004)
Distinguished Scholar Award, The Ohio State University (Selected, 2004)
American Pediatric Society (Elected, 2002)
Fellow, American Academy of Pediatrics (Elected, 1998)
Society for Pediatric Research (Elected, 1993)
Henry G. Cramblett Chair in Medicine, The Ohio State University (Selected, 1991)
Lange Award for Academic Achievement, UNC School of Medicine (Selected, 1980)
Duke Endowment Clinical Scholar, UNC School of Medicine (Selected, 1979)
Phi Beta Kappa, University of North Carolina at Chapel Hill (Selected, 1975)
Phi Eta Sigma, University of North Carolina at Chapel Hill (Selected, 1973)
Morehead Scholar, University of North Carolina at Chapel Hill (Selected, 1972)

IV. PROFESSIONAL SOCIETIES

American Society of Microbiology
American Association for the Advancement of Science
American Society for Virology
Pediatric Infectious Diseases Society
American Academy of Pediatrics
Infectious Diseases Society of America
American Society for Gene Therapy
Molecular Medicine Society

V. NATIONAL REVIEW PANELS AND COMMITTEES (last 5 years)

American Society for Virology Program Committee (2005 – present)
American Society for Gene Therapy Program Committee (2004 – present)
Recombinant DNA Advisory Committee (RAC/OBA/OD/NIH) (2002 - 2005)
NIH Ad Hoc Advisory Committee on Primate Resources (OAR/NIH) (2000 – 2004)
Scientific Advisory Board, International AIDS Vaccine Initiative (2000 – 2004)
NIH/NIAID/DAIDS Vaccine Development Resources Group (1999 – 2003)
NIH Special Emphasis Panel for RFP PAR-03-095, Bethesda, MD (2004)

VI. OTHER PROFESSIONAL ACTIVITIES (last 5 years)

Board of Directors, University Science Center, Philadelphia, PA (2008 - present)

Board of Directors, Cangene Corporation, Winnipeg MB, Canada (2008 – present)

Scientific Advisory Board, University Science Center, Philadelphia, PA (2007 - present)

Member, Greater Philadelphia Life Sciences Congress, Philadelphia, PA (2007 - present)

Editorial Board, AIDS Research and Human Retroviruses (1992 – present)

Member, Columbus Technology Council, Columbus, OH (2003 – 2004)

Bioscience Advisory Board, Reservoir Venture Partners, Columbus, OH (2002 – 2004)

Life Sciences Advisory Committee, Omeris (now BioOhio), Columbus, OH (2002 - 2004)

Scientific Advisory Board, Therion Biologics Corporation, Cambridge, MA (1993 – 2003)

VII. LOCAL HOSPITAL AND ACADEMIC ACTIVITIES (last 5 years)

Information Technology Steering Committee, CHOP (2008 – present)

Research Coordinating Council, School of Medicine, University of Pennsylvania (2006 - 2007)

Executive Committee, Penn Genomics Institute, University of Pennsylvania (2006 - 2007)

Committee on Promotions and Tenure, Department of Pediatrics, University of Pennsylvania School of Medicine (2005 - present)

Faculty, Biomedical Graduate Program, University of Pennsylvania School of Medicine (2005 - present)

Office of the President, Children's Hospital of Philadelphia (2005 - present)

College of Medicine Research Committee, The Ohio State University (2002 - 2004)

Center-Departmental Interaction Task Force, College of Medicine, OSU (2003)

Faculty, Integrated Biomedical Graduate Program, College of Medicine, OSU (2000 – 2004)

Office of the CEO, Columbus Children's Hospital (1999 – 2004)

Board of Directors, Pediatric Clinical Trials, Inc., Columbus, OH (1998 – 2004)

Chairman’s Advisory Committee, Dept of Pediatrics, College of Medicine, OSU (1997 - 2004)

Member, Board of Trustees, Columbus Children’s Research Institute (1996 - 2004)

Virology Advisory Committee, Department of Medical Microbiology and Immunology, College of Medicine, OSU (1995 - 2004)

Faculty, Molecular and Cellular Developmental Biology Program, OSU (1994 - 2004)

Attending Physician, Inpatient Wards and Consult Service, Infectious Diseases and General Medicine, Columbus Children’s Hospital (1991 - 2004)

VIII. STUDENTS AND FELLOWS (formal training)

NAME	POSITION	DATES
Scott Hoffman	Medical Student	2005 - 2008
Ryan Jensen	Ph.D. Graduate Student	2003 - 2008
Adam Studebaker, Ph.D.	Postdoctoral Fellow	2003 - 2004
Rui Xu, Ph.D.	Postdoctoral Fellow	2003 - 2004
Clifford Beall, Ph.D.	Postdoctoral Fellow	2002 - 2004
Chun-Liang Chen, Ph.D.	Postdoctoral Fellow	2000 - 2004
Lauretta Turin, Ph.D.	Postdoctoral Fellow	2000 - 2004
Bruce Schnepp, Ph.D.	Research Scientist	1998 - 2004
Eric Lubert, Ph.D.	Postdoctoral Fellow	2003 - 2004
Kristen Thomas	Medical Student	2000 - 2001
Clifford Beall, Ph.D.	Postdoctoral Fellow	1997 - 2000
Jessica Philpott	M.D./Ph.D. student	1995 - 1999
Xinglou Liu	Ph.D. Graduate Student	1995 - 1999
Anne D. Lewis, D.V.M.	Ph.D. Graduate Student	1992 - 1999
Thomas. J. Sferra, M.D.	Postdoctoral Fellow	1994 - 1996
David Fraley	Ph.D. Graduate Student	1994 - 1996
Frosso Voulgaropoulou	Ph.D. Graduate Student	1993 - 1996
Karen Davis	Ph.D. Graduate Student	1993 – 1997
K. Reed Clark, Ph.D.	Postdoctoral Fellow	1992 - 1996
Kimberly Klaiber, Ph.D.	Postdoctoral Fellow	1991 - 1994
Frank Novembre, Ph.D.	Postdoctoral Fellow	1989 - 1991
Anders Fommsgard, M.D., Ph.D.	Postdoctoral Fellow	1989 - 1990

IX. INVITED EXTERNAL PRESENTATIONS (last 5 years)

2008 NIH Vaccine Research Center Annual Meeting, Philadelphia, PA
Institute for Advanced Studies, Princeton, NJ
International AIDS Vaccine Initiative, White Plains, NY
Institute for Human Virology Annual Meeting, Baltimore, MD

2007 International AIDS Vaccine Initiative, New York, NY
Vanderbilt University, Peter F. Wright Symposium, Nashville, TN
National SIV Symposium, Center for AIDS Research, Univ. of Pennsylvania
American Society for Gene Therapy Annual Meeting, Boston, MA

2006 Visiting Professor, Comprehensive Cancer Center, University of Alabama-Birmingham
Center for AIDS Research, Univ. of Pennsylvania, Philadelphia, PA
Phacilitate Vaccine Forum, Baltimore, MD

2005 DAIDS/NIAID/NIH AIDS Vaccine, Rockville, MD
Keystone Symposium: HIV Vaccines. Banff, Alberta, Canada
Conference on Retroviruses and Opportunistic Infections, Boston, MA
HIV Vaccine Trials Network, NIH, Washington, DC
Institute for Human Virology Annual Meeting, Baltimore, MD

2004 Visiting Professor, Center for AIDS Research, University of Alabama-Birmingham
Visiting Scientist, Vaccine Research Center, NIAID/NIH, Bethesda, MD
American Society for Gene Therapy Annual Meeting, Minneapolis, MN
AIDS Vaccine 2004, Lausanne, Switzerland
Xth International Parvovirus Workshop, St. Petersburg, FL

2003 Keystone Symposium: HIV Vaccines, Banff, Alberta, Canada
AIDS Vaccine 2003, New York, New York
Symposium on New Vaccines, AAP Annual Meeting, New Orleans, LA
Visiting Professor, Rainbow Babies and Children's Hospital, Cleveland, OH

X. EXTRAMURAL RESEARCH SUPPORT

CURRENT	AWARD DATES	TOTAL COSTS
International AIDS Vaccine Initiative: 1301 Project Title: HIV T-cell Vaccine Program PI: Philip R. Johnson	07/06 - 06/11	$1,476,979
HHS N266200500008C Project Title: "HIV Vaccine Design and Development Teams" PI: Philip R. Johnson	08/05 - 07/10	$21,752,051
1 R01 MH67751-01 Project Title: "Characterization of CNS-compartmentalized SIV *env* Genes" PI: Ronald Swanstrom (P. Johnson, Co-Investigator)	01/03 - 12/08	$333,687
R21 A1064063/01 Project Title: Characterization of a single-cycle SIV vaccine candidate. PI: Ronald Swanstrom (P. Johnson, Co-Investigator)	08/06-07/08	$456,856

Recently completed:

1U01AI56580-01 (NIAID) Project Title: "Molecularly Targeted Vaccines for Anthrax" PI: Kemp Cease (P. Johnson, Co-Investigator)	08/03 - 01/08	$1,377,886
2 PO1 AI56354-01 (NIAID) Project Title: "Novel Prophylactic HIV Vaccines Based on rAAV Vectors" PI: Philip R. Johnson	09/04 – 08/07	$1,293,752
International AIDS Vaccine Initiative: 1062 Project Title: Determination of the contribution of env from live-attenuated SIV in conferring protection from pathogenic SIV challenge in Indian Rhesus macaques PI: Philip R. Johnson	12/05-12/07	$274,850

XI. PATENTS ISSUED

U.S. patent number 5,658,785, issued 08/19/97: "Adeno-associated Virus and Materials"

U.S. patent number 5,786,211, issued 07/28/98: "Adeno-associated Virus and Materials"

U.S. patent number 5,858,775, issued 01/12/99: "Adeno-associated Virus and Materials"

U.S. patent number 7,070.998, issued 02/23/05: "Adeno-associated Virus and Materials"

XII. PUBLICATIONS

1. Cooper HA, Wilkins KW, **Johnson PR**, Wagner RH. Platelet aggregating factor and the aggregation of fixed washed platelets. J Lab Clin Med 90:512-521, 1977.

2. Santos F, **Johnson PR**, Hall M, Clark HR, Wagner RH. Preparation of bovine platelet aggregating factor (PAF). Thromb Res 13:741-750, 1978.

3. **Johnson PR**, Roloff JS. Vitamin B12 deficiency in an infant strictly breast-fed by a mother with latent pernicious anemia. J Peds 100:917-919, 1982.

4. Ghishan F, Lee PC, Levinthal E, Bradley C, **Johnson PR**, Greene HL. Isolated congenital enterokinase deficiency: recent findings and review of the literature. Gastro 85:727-731, 1983.

5. **Johnson PR**, Krafcik J, Greene JW. Massive pulmonary embolism in a varsity athlete: a case report. Phys Sportsmed 12:61-63, 1984.

6. Wright PF, Bhargava M, **Johnson PR**, Thompson JM, Karzon DT. Simultaneous administration of live attenuated influenza A vaccines representing different serotypes. Vaccine 3:305-308, 1985.

7. Feldman S, Wright PF, Webster RG, Robertson PK, Mahoney Y, Thompson JM, Doolittle M, Lott L, **Johnson PR**, Christoph RC. Live cold-adapted versus inactivated whole-virus influenza A vaccines in seronegative children with a natural H1N1 challenge. J Infect Dis 152:1212-1218, 1985.

8. **Johnson PR**, Feldman S, Thompson JM, Mahoney J, Wright PF. Comparison of long-term systemic and secretory antibody responses in children given live attenuated or inactivated influenza A vaccine. J Med Virol 17:325-335, 1985.

9. **Johnson PR**, Edwards KM, Wright PF. Failure of intraventricular gammaglobulin to eradicate echovirus encephalitis in a patient with X-linked agammaglobulinemia. New Eng J Med 313:1545-1546, 1985.

10. Wright PF, **Johnson PR**, Karzon DT. Clinical experience with live attenuated vaccines in children. Options for the control of influenza, UCLA Symposia on Molecular and Cellular Biology, New Series, Kendal A and Patriaca P, eds. Alan R. Liss, Inc., New York, 36:243-253, 1986.

11. **Johnson PR**, Feldman S, Thompson JM, Mahoney J, Wright PF. Immunity to influenza A infection in young children: a comparison of natural infection, live attenuated intranasal cold-adapted vaccine, and inactivated intramuscular vaccine. J Infect Dis 154:121-127, 1986.

12. Edwards KM, Synder P, Thompson JM, **Johnson PR**, Wright PF. In vitro production of anti-influenza virus antibody after simultaneous administration of H3N2 and H1N1 cold-adapted vaccines in seronegative young children. Vaccine 4:50-54, 1986.

13. **Johnson PR**, Decker MD, Edwards KM, Schaffner W, Wright PF. Frequency of Broviac catheter infections in pediatric oncology patients. J Infect Dis 154:570-578, 1986.

14. Olmsted RA, Elango N, Prince GA, Murphy BR, **Johnson PR**, Moss B, Chanock RM, Collins PL. Expression of the F glycoprotein of respiratory syncytial virus (RSV) by a recombinant vaccinia virus: comparison of the individual contributions of the F and G glycoproteins to host immunity. Proc Natl Acad Sci 83:7462-7466, 1986.

15. Spriggs MK, **Johnson PR**, Collins PL. Sequence analysis of the matrix (M) protein of human parainfluenza virus type 3: sequence homology among paramyxoviruses. J Gen Virol 68:1491-1497, 1987.

16. Collins PL, Olmsted RA, Spriggs MK, **Johnson PR**, Buckler-White AJ. Gene overlap and site-specific attenuation of the viral polymerase (L) gene of human respiratory syncytial virus. Proc Natl Acad Sci 84:5134-5138, 1987.

17. Olmsted RA, **Johnson PR**, Prince GA, Murphy BR, Elango N, Moss B, Chanock RM, Collins PL. Immunogenicity and protective efficacy of a recombinant vaccinia virus expressing the F glycoprotein of respiratory syncytial virus. In Brown F et al (eds), Vaccines 87: Modern Approaches to New Vaccines Including the Prevention of AIDS. Cold Spring Harbor Laboratory, pp 350-355, 1987.

18. **Johnson PR**, Spriggs MK, Olmsted RA, Collins PL. The G glycoprotein of human respiratory syncytial viruses of subgroups A and B: Extensive sequence divergence between antigenically related proteins. Proc Natl Acad Sci 84:5625-5629, 1987.

19. **Johnson PR**, Olmsted RA, Prince GA, Murphy BR, Alling DW, Walsh EE, Collins PL. Antigenic relatedness between the glycoproteins of human respiratory syncytial virus subgroups A and B: evaluation of the contributions of the F and G glycoproteins to immunity. J Virol 61:3163-3166, 1987.

20. Murphy BR, Clements ML, **Johnson PR**, Wright PF. The mucosal and systemic immune responses of children and adults to live and inactivated influenza A virus vaccines. In Strober W et al (eds), Mucosal Immunity and Infection at Mucosal Surfaces. Oxford University Press, pp 303-318, 1988.

21. Decker MD, **Johnson PR**. Recurrent Broviac catheter infections. J Infect Dis 157:214, 1988.

22. **Johnson PR**, Parks DE, Norrby E, Lerner RA, Purcell RH, Chanock RM. Site-directed ELISA identifies a highly antigenic region of the simian immunodeficiency virus transmembrane glycoprotein. AIDS Res Hum Retro 4:159-164, 1988.

23. **Johnson PR**, Collins PL. The fusion glycoprotein of human respiratory syncytial virus of subgroups A and B: sequence conservation provides a structural basis for antigenic relatedness. J Gen Virol 69:2623-2628, 1988.

24. **Johnson PR**, Collins PL. The A and B subgroups of human respiratory syncytial virus: comparison of intergenic and gene overlap sequences. J Gen Virol 69:2901-2906, 1988.

25. **Johnson PR**, Parks DE, Norrby E, Lerner RA, Purcell RH, Chanock RM. Site-directed ELISA identifies a highly antigenic region of the simian immunodeficiency virus transmembrane glycoprotein. In Lerner RA et al (eds), Vaccines 88: Modern Approaches to Vaccines Including the Prevention of AIDS. Cold Spring Harbor, pp 271-276, 1988.

26. Koenig S, Hirsch VM, Olmsted RA, Powell D, Maury W, Rabson A, Fauci AS, Purcell RH, **Johnson PR**. Selective infection of CD4+ human cells by SIV: Productive infection associated with envelope glycoprotein-induced fusion. Proc Natl Acad Sci 86:2442-2447, 1989.

27. Olmsted RA, Barnes AK, Yamamoto JK, Hirsch VM, Purcell RH, **Johnson PR**. Molecular cloning of feline immunodeficiency virus. Proc Natl Acad Sci 86:2448-2453, 1989.

28. **Johnson PR**, Collins PL. The 1B (NS2), 1C (NS1), and N proteins of human respiratory syncytial virus (RSV) of antigenic subgroups A and B: sequence conservation and divergence within RSV genomic RNA. J Gen Virol 70:1539-1547, 1989.

29. **Johnson PR**, Gravell M, Allan J, Goldstein S, Olmsted RA, Dapolito G, McGann CJ, London WT, Purcell RH, Hirsch VM. Genetic diversity among SIV isolates from African green monkeys. J Med Primatol 18:271-277, 1989.

30. Norrby E, Biberfeld G, **Johnson PR**, Parks DE, Houghton RA, Lerner RA. The chemistry of site-directed serology for AIDS. AIDS Res Hum Retro 5:487-493, 1989.

31. Hirsch VM, Dapolito G, McGann C, Olmsted RA, Purcell RH, **Johnson PR**. Molecular cloning of SIV from sooty mangabey monkeys. J Med Primatol 18:279-285, 1989

32. Hirsch VM, Olmsted RA, Murphey-Corb M, Purcell RH, **Johnson PR**. An African non-human primate lentivirus (SIVsm) closely related to HIV-2. Nature 339:389-392, 1989.

33. Olmsted RA, Hirsch VM, Purcell RH, **Johnson PR**. Nucleotide sequence of feline immunodeficiency virus: genome organization and relationship to other lentiviruses. Proc Natl Acad Sci 86:8088-8092, 1989.

34. Hirsch VM, Edmondson P, Murphey-Corb M, Arbeille B, **Johnson PR**, and Mullins JI. SIV adaptation to human cells. Nature 341:573-574, 1989.

35. **Johnson PR**, Collins PL. Sequence comparison of the respiratory syncytial virus phosphoprotein mRNAs of antigenic subgroups A and B identifies a highly divergent domain in the predicted protein. J Gen Virol 71:481-485, 1990.

36. Goldstein S, Engle R, Olmsted RA, Hirsch VM, **Johnson PR**. Detection of SIV antigens by HIV-1 antigen capture immunoassays. JAIDS 3:103-108, 1990.

37. Montefiori DC, Robinson W, Hirsch VM, Modliszewski A, Mitchell WM, **Johnson PR**. Antibody-dependent enhancement of SIV infection in vitro by plasma from SIV infected rhesus macaques. J Virol 64:113-119, 1990.

38. **Johnson PR**, Fomsgaard A, Olmsted RA, Hirsch VM. Genetic diversity of simian lentiviruses: implications for the evolution of human lentiviruses. In Chanock, RM et al (eds), Vaccines 90: Modern Approaches to New Vaccines Including the Prevention of AIDS. Cold Spring Harbor Laboratory, pp 383-388, 1990.

39. Hirsch VM, Zack P, **Johnson PR**. SIV-infected macaques harbor multiple proviral genotypes: selection of a predominant genotype in tissue culture. In Chanock, RM et al (eds), Vaccines 90: Modern Approaches to New Vaccines Including the Prevention of AIDS. Cold Spring Harbor Laboratory, pp 379-382, 1990.

40. Olmsted RA, Hirsch VM, Purcell RH, **Johnson PR**. Sequence analysis of feline immunodeficiency virus: genome organization and relationship to other lentiviruses. In Chanock, RM et al (eds), Vaccines 90: Modern Approaches to New Vaccines Including the Prevention of AIDS. Cold Spring Harbor Laboratory, pp 369-374, 1990.

41. Cheng SM, Blume M, Lee SG, Hung PP, Hirsch VM, **Johnson PR**. Rev is required for SV40-directed expression of SIVsm Env. In Chanock, RM et al (eds), Vaccines 90: Modern Approaches to New Vaccines Including the Prevention of AIDS. Cold Spring Harbor Laboratory, pp 401-406, 1990.

42. **Johnson PR**, Fomsgaard A, Allan J, Gravell M, London WT, Olmsted RA, Hirsch VM. Simian immunodeficiency viruses from African green monkeys display unusual genetic diversity. J Virol 64:1086-1092, 1990.

43. Cox JH, Yewdell JW, Eisenlohr LC, **Johnson PR**, Bennink JR. Expression of adenovirus E19K glycoprotein in recombinant vaccinia virus: transport of MHC class I molecules from the endoplasmic reticulum is required for presentation of protein antigens to cytotoxic T lymphocytes. Science 247:715-718, 1990.

44. **Johnson PR**. Vaccines 90: Overview and Summary. In Chanock, RM et al (eds), Vaccines 90: Modern Approaches to New Vaccines Including the Prevention of AIDS. Cold Spring Harbor, 485-488, 1990.

45. Montefiori DC, Robinson W, Hirsch VM, Modliszewski A, Mitchell WM, **Johnson PR**. Antibody-dependent enhancement of SIV infection: further charaterization and cross reactivity between macaque and sooty mangabey isolates. J Med Primatol 19:269-278, 1990.

46. **Johnson PR**, Goldstein S, London WT, Fomsgaard A, Hirsch VM. Molecular clones of SIVsm and SIVagm: experimental infection of macaques and African green monkeys. J Med Primat19:61-68, 1990.

47. Fomsgaard A, Allan J, Gravell M, London WT, Hirsch VM, **Johnson PR**. Molecular characterization of simian lentiviruses from East African green monkeys. J Med Primatol 19:219-228, 1990.

48. Hirsch VM, Zack PM, **Johnson PR**. Molecular characterization of SIV in tissues from experimentally-infected macaques. J Med Primatol 19:211-218, 1990.

49. Collins PL, Olmsted RA, **Johnson PR**. The small hydrophobic (SH) protein of human respiratory syncytial virus: comparison between antigenic subgroups A and B. J Gen Virol 71:1571-1576, 1990.

50. Cheng S-M, Blume M, Lee S-G, Hung PP, Hirsch VM, **Johnson PR**. Coexpression of biologically-active SIV Rev and Env in an SV40 system: the rev gene regulates env expression. Virology 177:816-819, 1990.

51. **Johnson PR**, Myers G, Hirsch VM. Genetic diversity and phylogeny of non-human primate lentiviruses. In Koff WC, Wong-Staal F, and Kennedy RC (eds), Annual Review of AIDS Research Vol. 1, Marcel Dekker, Inc., New York; pp 47-62, 1990.

52. Collins PL, Hill MG, **Johnson PR**. The two open reading frames of the 22K mRNA of human respiratory syncytial virus: sequence comparison of antigenic subgroups A and B and expression in vitro. J Gen Virol 71:3015-3020, 1990.

53. Chatterjee S, **Johnson PR**, Rose JA, Wong KK. Transduction of intracellular resistance to HIV production by an adeno-associated virus-based antisense vector. In Brown F. et al (eds), Vaccines 91: Modern Approaches to New Vaccines Including the Prevention of AIDS. Cold Spring Harbor Laboratory, pp 85-90, 1991.

54. **Johnson PR**, Hamm TE, Hirsch VM. Genetic variation of molecularly-cloned SIV after experimental infection of macaques. In Brown F. et al (eds), Vaccines 91: Modern Approaches to New Vaccines Including the Prevention of AIDS. Cold Spring Harbor Laboratory, pp 123-132, 1991.

55. Hirsch VM, Zack PM, Vogel AP, **Johnson PR**. Simian immunodeficiency virus infection of macaques: pathogenesis of end-stage disease is characterized by high levels of proviral DNA in tissues. J Infect Dis 163:976-988, 1991.

56. Cheng S-M, Lee SG, Ronchetti-Blume M, Hum WT, Politis-Virk K, Mizutani S, Davis A, Hung PP, Hirsch VM, Chanock RM, Purcell RH, **Johnson PR**. Robust expression of the simian immunodeficiency virus envelope protein by a recombinant human adenovirus host range mutant. In Brown F. et al (eds), Vaccines 91: Modern Approaches to New Vaccines Including the Prevention of AIDS. Cold Spring Harbor Laboratory, pp 145-150, 1991.

57. Fomsgaard A, Hirsch VM, Allan J, **Johnson PR**. A highly divergent proviral DNA clone of SIV from a distinct species of African green monkey. Virology 182:397-402, 1991.

58. Allan JS, Short M, Taylor ME, Su S, Hirsch VM, **Johnson PR**, Shaw GM, Hahn BH. Species-specific diversity among simian immunodeficiency viruses from African green monkeys. J Virol 65:2816-2828, 1991.

59. Novembre FJ, Hirsch VM, McClure HM, **Johnson PR.** Molecular diversity of SIVsmm/PBj and a cognate variant (SIVsmm/PGg). J Med Primatol 20:188-192, 1991.

60. **Johnson PR**, Hamm TE, Goldstein S, Kitov S, Hirsch VM. The genetic fate of molecularly cloned simian immunodeficiency virus in experimentally-infected macaques. Virology185:217-228, 1991.

61. Montefiori DC, Hirsch VM, **Johnson PR**. Cellular antigens in SIV vaccines. Nature 354:439, 1991.

62. **Johnson PR**, Hirsch VM. Pathogenesis of AIDS: the non-human primate model. In Adler MW, Gold JWM, and Levy JA (eds), AIDS '91 - A year in review. Current Science, London 5 (s2):S45-S50, 1992.

63. Novembre FJ, Hirsch VM, McClure HM, **Johnson PR**. SIV from stump-tailed macaques: molecular characterization of a highly transmissble primate lentivirus. Virology 186:783-787, 1992.

64. **Johnson PR**, Hirsch VM. Genetic variation of the simian immunodeficiency viruses in non-human primates. AIDS Res Human Retro 8:367-372, 1992.

65. **Johnson PR**, Hirsch VM. SIV infection of macaques as a model for AIDS pathogenesis. In Nara P (ed), International Reviews of Immunology 8:55-63, 1992.

66. **Johnson PR**, Montefiori DC, Goldstein S, Hamm TE, Zhou J, Kitov S, Haigwood NL, Misher L, London WT, Gerin JL, Allison A, Purcell RH, Chanock RM, Hirsch VM. Inactivated whole virus vaccine derived from a proviral DNA clone of the simian immunodeficiency virus induces high levels of neutralizing antibodies and confers protection against heterologous challenge. Proc Natl Acad Sci 89:2175-2179, 1992.

67. **Johnson PR**, Montefiori DC, Goldstein S, Hamm TE, Zhou J, Kitov S, Haigwood NL, Misher L, London WT, Gerin JL, Allison A, Purcell RH, Chanock RM, Hirsch VM. Inactivated whole virus vaccine derived from a proviral DNA clone of SIV induces protection against challenge with cell-free virus but not infected cells. In Brown F. et al (eds), Vaccines 92: Modern Approaches to New Vaccines Including the Prevention of AIDS. Cold Spring Harbor Laboratory, pp 95 - 102, 1992.

68. Haigwood NL, Misher L, Chin SM, Blair M, Planelles V, Scandella CJ, Steimer KS, Gardner MB, Yilma T, Hirsch VM, **Johnson PR**. Characterization of group specific antibodies in primates: studies with SIV envelope in macaques. J Med Primatol 21:82-90, 1992.

69. Hirsch VM, **Johnson PR**. Pathogenesis of experimental SIV-infection of macaques. Seminars in Virology 3:175-183, 1992.

70. Cheng S-M, Lee S-G, Ronchetti-Blume M, Virk KP, Mizutani S, Eichberg JW, Davis A, Hung PP, Hirsch VM, Chanock RM, Purcell RH, **Johnson PR**. Coexpression of the simian immunodeficiency virus env and rev proteins by a recombinant human adenovirus host range mutant. J Virol 66:6721-6727, 1992.

71. Kindt TJ, Hirsch VM, **Johnson PR**, Sawasdikosol S. Animal models for acquired immunodeficiency syndrome. Adv Immunol 52:425-474, 1992.

72. Fomsgaard A, Hirsch VM, **Johnson PR**. Cloning and sequences of primate CD4 molecules: diversity of the cellular receptor for SIV/HIV. Eur J Immunol 22:2789-2794, 1992.

73. Chatterjee S, **Johnson PR**, Wong KK. Dual-target inhibition of HIV-1 in vitro by means of an adeno-associated virus antisense vector. Science 258: 1485-1488, 1992.

74. **Johnson PR**, Montefiori DC, Goldstein S, Hamm TE, Zhou J, Kitov S, Haigwood NL, Misher L, London WT, Gerin JL, Allison A, Purcell RH, Chanock RM, Hirsch VM. Inactivated whole SIV vaccine in macaques: evaluation of protective efficacy against challenge with cell-free virus or infected cells. AIDS Res Hum Retro 8:367-372, 1992.

75. Hirsch VM, Dapolito GA, Goldstein S, McClure H, Emau P, Fultz PN, Isahakia M, Lenroot R, Myers G, **Johnson PR**. A distinct African lentivirus from Sykes' monkeys. J Virol 67:1517-1528, 1993.

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