Shilpa J. Buch, Ph.D.

ADDRESS:

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PERSONAL DATA:

Citizenship: USA

UNIVERSITY EDUCATION:

Institution	Degree	Date	Specialities
M.S.University, Baroda, India	B.Sc. (Hons)	1977	Chemistry & Biology
M.S.University, Baroda India	M.Sc.(Hons)	1979	Microbiology
M.S.University, Baroda India	Ph.D.	1982	Microbiology

PROFESSIONAL POSITIONS:

July 2009-Present	Professor and Vice Chair for Research Dept of Pharmacology and Experimental Neuroscience University of Nebraska Medical Center Omaha, NE
July 2006-June 2009	Associate Professor Department of Molecular & Integrative Physiology K.U. Medical School Kansas City, Kansas
2004- June 2006	Assistant Professor Department of Pathology & Lab. Medicine K.U. Medical School Kansas City, Kansas
2003 -2004:	Research Associate Professor Department of Microbiology K.U. Medical School Kansas City, Kansas

1997- 2003:	Research Assistant Professor Department of Microbiology K.U. Medical School Kansas City, Kansas
1992-1996:	Assistant Professor Division of Lung Biology Hospital for Sick Children Toronto, Canada
1988-1992:	Research Scientist Hospital for Sick Children, Toronto, Canada
1985-1986:	Research Associate, Biochemistry Department University of Western Ontario, London, Canada
1982-1985:	Post-doctoral Fellow, Faculty of Medicine Memorial University St. John's, Newfoundland, Canada

SCHOLASTIC ACHIEVEMENTS AND HONORS:

1. University Grants Commission Research Junior Fellow (1979-1980)
2. Selected as one of 25 contestants from a pool of applicants from all of Asia (India, China, Japan, Phillipines, and Korea) to participate in a CSH/EMBO sponsored 2 week course on molecular biology techniques directed by Drs. Joseph Sambrook, Ann Skalka and Ahmed Bukhari in Benaras, India in 1981.
3. Center for Scientific and Industrial Research Scholarship (1981-1982)
4. Medical Research Council Scholarship, Canada (1982-1983)
5. K-INBRE Faculty Scholar Award (2005)
6. KU Research Institute Travel Award (2002, 2005)
7. Elected at-large delegate to faculty council (2007-Present)
8. Executive Council Member(2007-Present)
9. ISNV Board Member (2008-Present)
10. Research Investigator Award (2008)

Memberships and Offices in Professional Societies

Editorial Board: Journal of Neurovirology	2006-2009
Board of Directors: International Society of Neurovirology	2009-Present
Secretary: Society on NeuroImmune Pharmacology	2010-2013
Elected at-large delegate to faculty council – KUMC	2007-2008
Executive Council Member - KUMC	2007-2008
Graduate Faculty - KUMC	2002, 2005-Present
Graduate Faculty – UNMC	2009-Present

PROFESSIONAL SERVICE:

- Mentored clinical fellows, students and post-doctoral fellows (1990-2005)
- Served on the Search Committee for LAR Director at KUMED (2001)
- I participate as a consultant in planning research objectives in the Neonatology Division of Children's Mercy Hospital (2002-2004)
- Appointed to the Graduate Faculty at KUMC (2002, 2005)
- Invited to Chair a scientific session in Sardinia, Italy at the International Society for NeuroVirology (2004)
- Ad-Hoc study section member NAED study section reviewer for NIH (2005- 2006)
- Served on the Search Committee for Virology Faculty position (2006)
- Invited to the Editorial Board of Journal of Neurovirology (2006-2009)
- NIH Study section (NAED) Member (2007-2010)
- Chaired two scientific sessions at the World AIDS Day Meeting in Tianjin, China (2006)
- Appointed as an at-large delegate of the Executive Committee of the Faculty Council (2007-2008)
- Invited to Chair a scientific session in San Diego at the 8th International Society for NeuroVirology (2007)
- Invited to chair a symposium on Alcohol and NeuroAIDS at the 14th Annual SNIP conference in Charleston, SC (March 2008)
- Organized Bill Narayan Memorial Symposium in KC (Oct 23-25, 2008)
- Society on Neuroimmune Pharmacology – Appointed Secretary (2010-2013)
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Reviewer of Manuscript:

Journal of Neurovirology – Editorial Board The Journal of Infectious Diseases – Ad Hoc FASEB – Ad Hoc Glia – Ad Hoc Journal of Neuroscience – Ad Hoc Journal of Immunology – Ad Hoc	Respiratory Research – Ad Hoc Physiological Genomics – Ad Hoc Journal of Neuroimmunology – Ad Hoc Journal of Pharmacology & Experimental Therapeutics - Ad Hoc Virology – Ad Hoc

Session Chair
International Society for Neurovirology, Sardinia, Italy (2004)
World AIDS Day, Tianjin, China (2006)
International Society for Neurovirology, SanDiego (2007)
Society on Neuroimmune Pharmacology, Charleston (2008)
ICCND Meeting, Chandigarh, India (2008)
International Conf. on Mol. Mechanisms of Diseases, Gwalior, India (2008)
Society on Neuroimmune Pharmacology, Wuhan, China (2009)
International Society of Neurovirology, Miami (2009)

University Activities:
KU Medical Center – Search Committee Member for LAR Director 2001-2002
KU Medical Center – Vice President, Women in Medicine and Science 2005-2006

Elected at-large delegate to Faculty Council 2007-2008
Executive Council Member 2007-2008
Graduate Faculty KUMC 2005-Present
Graduate student thesis committee (Seton Hall University) 2007
Graduate Committee (UNMC) 2009-Present

Departmental Committees:

Seminar Committee	2002-2003
Virology Faculty Search Committee	2005-2006

TRAINING RECORD

Trainee	**Training period**	**Degree at entry**	**Prior institution**	**Current position, institution & supp**
Glenn Mackay	2002-2003	MD	KUMC	Private Practice, Kansas
POST -DOCTORAL FELLOWS				
Navneet Dhillon	2003-Present	PhD	KUMC	***Research Assistant Professor (2007)-KUMC***
Fuwang Peng	2006-Present	PhD	KUMC	Current Post-doc
Honghong Yao	2007-Present	PhD	KUMC	Current Post-doc
Raghava Potula	2001-2004	PhD	KUMC	Res. Associate, CNND, Omaha
Yongjun Sui	2002-2005	PhD	KUMC	Research Associate U.Pittsburgh
Christopher Zien	2003-2005	PhD	KUMC	Working in a law firm
GRADUATE STUDENTS				
Rachel Williams	2005-Present	MSc	KUMC	Graduate Student
Marcia Bellon (Thesis Committee)	2004-Present	MSc	KUMC	Graduate Student
SUMMER STUDENTS				
Jason Day	2002-2003	Medical Student	KUMC	Neurology Fellow at Northwestern Univ.
Andrey Hicks	2000-2002	High School Senior	KUMC	Medical Student Harvard University
Rishi Dalal	2002	High School Senior	KUMC	Harvard Univ.
Eisha Buch	2002	High School Senior	KUMC	Univ. of Michigan

Kunal Bisariya	2003	High School Senior	KUMC	Medical Student at UMKC
Jane Segerbrecht	2002	High School Senior	KUMC	KU, Lawrence
Kate Sickendick	2003	High School Senior	KUMC	William Jewell College
Duncan Renfrow	2006, 2007	High School Senior	KUMC	Tufts University

Invited Lectures

Symposium on Viral & Host factors Regulating HIV/CNS Disease (NIMH), Washington DC	Nov,	2002
Department of Microbiology, KUMC	Dec,	2002
Carribean Primate Research Center, Univ. of Puerto Rico at San Juan	Mar,	2003
International Symposium on Neurovirology, Baltimore	Sept,	2003
Dept. of Pathology, University of Hawaii	May,	2004
Dept. of Pathology, Emory University, Atlanta,	May,	2004
NIH sponsored workshop, Washington, DC	June,	2004
Department of Medicine, Mount Sinai School of Medicine, New York	July,	2004
International Bioinformatics Meeting, Baroda India	Feb	2005
Univ of Hawaii NeuroAIDS Specialized Neuroscience Res Program	May,	2005
Department of Pathology Grand Rounds, KUMC	May,	2005
Carcinogenesis and Cancer Biology Course at KUMC	Feb,	2006
Conference on Retrovirus and Opportunistic Infections, San Francisco	Feb,	2006
Society on NeuroImmune Pharmocology Santa Fe	April,	2006
International Symposium on NeuroVirology Philadelphia	May,	2006
Biennial National IDeA Symposium of Biomedical research Excellence Washington DC	July,	2006
Department of Anatomy Seminar, KUMC	Sept,	2006
Dept. of Pharmacology, Univ. of Missouri Kansas City	Sept,	2006
Dept of Physiology KUMC	Oct,	2006
International Symposium on Drug Abuse &HIV/AIDS Trivandrum, India	Nov,	2006
World AIDS Day, Tianjin, China	Dec,	2006
US-Caribbean Conf of HIV/AIDS Drug Abuse San Juan, Puerto Rico	Dec,	2006
Kansas State University	Feb,	2007
Department of Biology, Seton Hall University	Mar,	2007

KU Internal Medicine Grand Rounds	April, 2007
Department of Infectious Diseases and Microbiology, Univ of Pittsburgh	Oct, 2007
Dept of Biochemistry, Panjab Univ, Chandigarh, India	Jan, 2008
Society on Neuroimmune Pharmacology, Charleston, SC	Mar, 2008
University of Puerto Rico, San Juan	April, 2008
University of Indiana, Indianapolis	April, 2008
University of Nebraska Medical Center, Omaha	May 2008
Drexel University, Philadelphia	May, 2008
University of Kentucky, Lexington	Oct, 2008
Center for Neurovirology, Lincoln, Nebsraksa	Feb, 2009
Seton Hall University	Mar, 2009
KUMC, Physical Therapy Students	Sept, 2009
East Tennessee University	Nov, 2009
Lovelace Respiratory Research Institute	Jan, 2010
Johns Hopkins University	Jan, 2010
NIDA, Intramural Program, NIH	Feb, 2010
Univ. South Florida, Tampa	Mar, 2010
University of Nebraska Medical Center	Mar, 2010
Seton Hall University	April, 2010
Temple University	April 2010
Louisiana State University, New Orleans	Sept 2010
Univ. Minnesota, Minneapolis	Oct, 2010
Northwestern Univ, Chicago	Nov, 2010

International Meetings:

International Bioinformatics Meeting, Baroda India	Feb, 2005
International Symposium on Drug Abuse and HIV/AIDS Trivandrum, India	Nov, 2006
World AIDS Day, Tianjin, China	Dec, 2006
International Conf on Opportunistic Pathogens, New Delhi, India	Jan, 2008
Dept of Biochemistry, Panjab Univ, Chandigarh, India	Jan, 2008
ICCND Meeting, Chandigarh, India	Dec, 2008
International Conf. on Mol. Mechanisms of Diseases, Gwalior, India	Dec, 2008
Indian Pharmacological Society, AIIMS, New Delhi	Dec, 2008
Molecular Medicine Conference, Chennai, India	Jan, 2009

Dept. of Biochemistry, Vadodara, India	Jan, 2009
Society on Neuroimmune Pharmacology, Wuhan, China	April, 2009
International Society of Neurovirology, Miami	May 2009
IDARS Meeting, Seoul, Korea	Aug, 2009
Seoul National University	Aug, 2009
Indian Academy of Neuroscience	Dec, 2009
International Conf on Opportunistic Pathogens, New Delhi, India	Sept, 2010
International Society of Neurovirology, Milan, Italy	Oct, 2010

Current Research Grants

ACTIVE

1. 5 R01 DA020392-02 (S Buch PI) 05/01/06 – 04/30/11 2.4 CY Months
NIH/NIDA $217,200
HIV Encephalitis and Cocaine Abuse: Mechanism of Synergy and Therapy
This proposal aims to: a) explore the role of cocaine in accelerating HIV-dementia and b) to develop therapeutic intervention strategies for HIV-dementia in HIV-infected cocaine abusers.

2. 1 R01 DA024442-01 (S Buch PI) 09/30/07 to 08/31/12 3.0 CYMonths
NIH/NIDA $361,509
Morphine and the Neuropathogenesis of SIV in Macaques
The main direction of this grant is to determine the long-term of effects of morphine on the neuropathogenesis of SIV infection with respect to virus replication in the brain and effects on activation of inflammatory cells.

3. 2 R01 MH068212-05A2 (PI: Buch) 07/01/07 – 06/30/13 1.8 CYM
NIH $225,000
Mechanism and Therapy of HIV Encephalitis
Goal: This grant will explore the role of Virus and hsot factors in over-expression of CXCL10 by macrophages and will also assess the role of IP-10 in neuronal dysfunction/death associated with HIV-encephalitis and the neuroprotective role of PDGF in this process. Delivery of liposomes carrying antisense DNA plasmids will be first optimized in macrophage cell cultures followed by delivery and biodistribution in small animals such as rats. These studies will then form the basis for antisense delivery in infected macaques to interdict the disease process vaccines to prevent and/or abort CNS disease

4. R21 MH080702-01A1 (PI: Nickerson, C; Buch: Co-I) 07/01/08 – 06/30/10 0.6CYM
Arizona State University / NIH $29,592
3-D Organotypic Model of HIV-Infectable Tissue for AIDS-Associated Dementia
Goal: Development of a 3D model using primary macrophages, astrocytes and neurons for NeuroAIDS.

5. Agency: Parker B. Francis Fellowship in Pulmonary Research

Mentee: Navneet Dhillon 07/01/07 to 06/30/10
Mentors: S. Buch & Berkland
Award: $45,000/year
Title: Nanoparticle-Based Gene Therapy for SHIV Pneumonia in Macaques
In this proposal we propose to compare the efficacy of nanoparticles, poly (DL-lactic-co-glycolic acid) (PLGA) with that of the liposomes. We propose to formulate PLGA-AS IL-4 nanoparticles with optimal DNA release and transfection efficiency in human PBMCs and macrophages followed by testing the therapeutic efficacy of these particles in abrogating SHIV replication in macaques with SHIV-Pneumonia.

6. R01DA027729-01 (Buch S & Kim: Multiple PI) 07/01/09-06/30/14 1.5 calendar
NIH
Cocaine & HIV: Role of PDGF/PDGF-Receptor Axis in Blood Brain Barrier Disruption
To explore the molecular mechanisms involved in the disruption of BBB and monocyte transmigration both in vitro and in vivo

Completed

1. 5 RO1 NS32203-07 (PI: O. Narayan)
09-01-93 to 08-31-01
NIH/NINDS (Co-I: S Buch)
"Pathogenesis of Dementia in SIV Infected Macaques"
The major goals of this project are to identify and characterize the molecular and viral basis of CNS disease caused by simian immunodeficiency virus in rhesus macaques.

2. 1 RO1 NS 40238-01 (PI: O. Narayan)
09-01-99 to 08-31-04
NIH/NIMH (Co-I: S Buch)
"Neuropathogenesis and Therapy of SHIV Infection"
In this grant we will investigate the chronology of molecular events leading to the development of SHIV-induced CNS disease in order to better understand the nature of virus-host responses associated with complication. The long-term objective of this project is to develop intervention strategies focused on the nature of the infection in the CNS of animals placed on drug therapy and in vaccinated animals.

3. Type: 1 R03 MH62969-01 (S. Buch, PI)
01-01-01 to 12-31-03
NIH/NIMH
"Development of gene therapy for lentiviral-encephalitis"
The overall objective of this proposal is to understand the molecular events leading to the development of lentiviral encephalitis in macaques. Using the SHIV89.6P/macaque model system, we hope to understand the pathogenesis of SHIV-associated encephalopathy and propose to develop theraputic interventions with a view to reducing disease severity in the infected animals.

4. No Number (S. Buch, W. Troug, Co-PI)
9-01-2001 to 8-31-2003
Hall Family Foundation
"Pathogenesis and Therapy for Hyperoxic Lung Injury"

5. P20 RR016443-05 (O. Narayan, PI)
08/15/05 - 06/30/06
Agency: NIH/NCRR COBRE (Co-I: S.Buch)
"Novel Approaches for Control of Microbial Pathogens"
The goal of this grant is to develop an effective DNA vaccine against HIV by testing a new vaccine candidate delta 4- SHIVku for its Immunogenicity in mice. A plasmid DNA was derived from SHIVku by deleting 3'LTR, reverse transcriptase, integrase and vif genes. The ability of this DNA to induce cell-mediated immune (CMI) responses, specifically cytotoxic T lymphocytes (CTLs), antigen specific helper T lymphocytes (HTLs) as well as neutralizing antibodies specific to the viral proteins will be tested in BALB/c mice. We will also optimize vaccine dosage, frequency of administration, and use of cytokines as adjuvants to enhance the immunity and development of long term memory T cells.

6. P20 RR016443-05 (O. Narayan, PI)
07/01/04 – 06/30/06
Agency: NIH/NCRR COBRE (S. Buch, Core D Section Director : Tissue Processing)
"Novel Approaches for Control of Microbial Pathogens"
Role: Core D Section Director : Tissue Processing

7. RO1 AI051220-03 (O. Narayan, PI) 06/15/02 to 05/31/06
NIH/NIAID
"Safety and Efficacy of SHIV Vaccine in Macaques"
This is an application to continue longitudinal studies in macaques that have been used to explore mechanisms of safety of a SHIV vaccine, and the remarkable effectiveness of this vaccine not only in conferring long term protection against disease caused by pathogenic SIV and SHIV, but also elimination of these pathogens given as challenge

8. R21 MH072355-02 (Buch, S.) 12/20/2004 – 11/30/2007
NIH
Development of Neuronal Gene Therapy for HIV-dementia
In this using the pseudotyped FIV vector I will develop a novel gene therapy strategy to deliver antisense CXCXL10 DNA in the neurons of mice with HIV-1 to abrogate neuronal apoptosis

Publications

1. Trivedi J, Malik S and Dave PJ. (1981) Purification and partial characterization of a bacteriocin afrom Serratia marcescens HY. Indian Journal of Biochemistry and Biophysics 18:66-68.
2. Malik S, Chakraborty R and Dave PJ. (1981) Possible involvement of alkaline phosphatase in prodigiosin biosynthesis by Serratia marcescens. Indian Journal of Biochemsitry and Biophysics 18:69-74
3. Buch J, Buch S and Dave PJ. (1982) Microsome mediated mutagenicity of aflatoxin B1 in Bacillus megaterium SJ-6 his. FEMS Microbiology Letters. 13:349-352.
4. Surette M, Buch S and Chaconas G. (1987) Transposomes: Stable protein-DNA complexes involved in the transposition of phage Mu DNA Cell 49:253-262.

5. Tanswell K, Han R, Buch S and Fraher L (1991) Circulating factors that modify lung cell DNA synthesis following exposure to inhaled oxidants. III. Effect of plasma on lung pneumocyte and fibroblast DNA synthesis following exposure of adult rats to 85% oxygen. Experimental Lung Research 17:869-886
6. Buch S, Jones CL, Sweezey N, Tanswell K and Post M (1991) Platelet-derived growth factor and growth related genes in rat lung. I. Developmental Expression. Am.J.Respir.Cell Mol.Biol. 5:371-376
7. Skinner S, Somerville C, Buch S and Post M (1991) Transferrin gene expression and transferrin immunolocalization in developing rat lung. Journal of Cell Science 99(3):651656
8. Jones C, Buch S, Post M, McCulloch L and Eddy A (1991) The pathogenesis of interstitial fibrosis inchronic purine animonucleoside nephrosis. Kidney International 40:1020-1031.
9. Han R, Buch S, Freeman B, Post M and Tanswell K (1992) PDGF and growth related genes in rat lung: II Exposure to 85% oxygen. American Journal of Physiology 6(2):L140-L146.
10. Jones C, Buch S, Post M, McColloch L, and Eddy A (1992) Renal extracellular matrix accumulation inacute purine aminonucleoside nephrosis in rats. American Journal of Physiology 141(6):1-16.
11. Cannigia I, Liu J, Han R, Buch S, Funa K, Tanswell K and Post M (1993) PDGF expression in fetal lung epithelial cells. Am.J. Respir.Cell Mol. Biol 9:54-63.
12. Buch S, Jones C, Liu J, Han R, Tanswell K and Post M (1994) Differential regulation of PDGF genes in fetal rat lung fibroblasts Experimental Cell Research 211:142-149.
13. Buch S, Jassal D, Cannigia I, Edelson J, Han R, Liu J, Tanswell K and Post M (1994) Ontogeny and regulation of PDGF gene expression in distal fetal rat lung epithelial cells. Am. J. Respir. Cell Mol. Biol. 11(3):251-261.
14. Moore A, Buch S, Han R, Freeman B, Post M and Tanswell K (1995) Altered expression of collagen I, transforming growth factor beta 1 and related genes in rat lung exposed to 85% oxygen. Am.J.Physiol. 268 (Lung Cell.Mol.Physiol.):L78-L8.
15. Buch S, Han R, Liu J, Moore A, Edelson JD, Freeman BA, Post M and Tanswell K (1995) Basic fibroblast growth factor and receptor gene expression in 85% oxygen exposed rat lung. Am.J.Physiol. 268(Lung Cell Mol.Physiol):L455-L464
16. LiuM, Liu J, Buch S, Tanswell AK, and Post M (1995) Antisense oligonucleotides for PDGF-B and its receptor subunit inhibit mechanical strain-induced fetal lung cell growth. Am. J. Physiol. 269 (2 Pt 1):L178-L184
17. Sweezey N, Mawdsley C, Ghibu F, Song L, Buch S, Moore A, Antkaly T and Post M (1995) Differential regulation of glucocortocoid receptor expression by ligand in fetal rat lung cells. Pediatric Research 38(4):506-512
18. Han R, Han V, Buch S, Freeman B, Post M and Tanswell K (1996) Insulin-like growth factor-I and type-I insulin-like growth factor receptor in 85% oxygen-exposed rat lung. Am.J. Physiol. 271 (Lung Cell Mol.Physiol.):L139-L149.
19. Han R, Buch S, Tseu I, Young J, Christie N, Frndova H, Lye S, Post M and Tanswell K. (1996) Changes in structure, mechanics, and IGF-related gene expression in the lungs of newborn rats exposed to air or 60% oxygen. Pediatric Research 39(6):921-929

20. Han R, Han V, Buch S, Freeman B, Post M and Tanswell K (1998) Insulin-like growth factor proteins (IGFBPs) in air and 85% oxygen-exposed rat lung. Am. J. Physiol. 271:L647-L656.
21. Buch S, Han R, Cabacungan J, Wang J, Yuan S, Belcastro R, Deimling J, Jankow R, Luo X, Lye S, Post M and Tanswell K (2000) Changes in expression of platelet-derived growth factor and its receptors in the lungs of newborn rats exposed to air or 60% oxygen Pediatric Research 48(4):423-433
22. Buch S, Pinson D, Hou Y, Adany I, Li Z, Mukherjee S, Jia F, Mackay G, Silverstein P, Kumar A and Narayan O (2000) Neuropathogenesis of SHIV infection in rhesus macaques. Journal of Medical Primatology 29(3-4):96-106.
23. Tanswell K, Buch S, Liu M and Post M (2000) "Factors Mediating Cell Growth in Lung Injury" (Book Chapter) In: Chronic Lung Disease in Early Infancy." Editors: RD Bland and J Coalson
24. Buch S, Pinson D, King C, Villinger F, Raghavan R, Hou Y, Li Z, Adany I, David S, Mackay G, Hout D, Silverstein P and Narayan O (2000) Inhibitory and enhancing effects of IFN-γ and IL-4 on $SHIV_{KU}$ replication in rhesus macaque macrophages: correlation between the Th2 cytokines and productive infection in tissue macrophages during late-stage infection
25. David S, Smith M, Adany I, Mukherjee S, Buch S, Goodenow M and Narayan O (2001) Selective transmission of non-syncytium inducing HIV-1 from dendritic cells to resting CD4+T cells via formation of syncytia. AIDS Research and Human Retroviruses 17(1):59-68.
26. Kumar A, Buch S, Foresman L, Bischofberger N, Lifson J, and Narayan O (2001) Development of virus specific immune responses in $SHIV_{KU}$ infected macaques treated with PMPA .Virology 279:97-108
27. Buch S, David S, Raghavan R, Cheney P and Narayan O (2001) "Macaque Models of Neuropathogenesis in HIV Infection" (Book Chapter) In: "In Defense of the Brain: Current Concepts in the Pathogenesis of CNS Infections." Editors: Jack Remington and Phillip Peterson; Publishers: Blackwell Sciences
28. Smith M, Foresman L, Lopez G, Tsay J, Page A, Wang C, Li Z, Adany I, Buch S, Wodarz D, Lifson J, Bischofberger N and Narayan O (2000) Lasting Effects of Transient Postinoculation Tenofovir [9-R-(2-Phosphonomethoxypropyl)adenine] treatment on $SHIV_{KU2}$ Infection of Rhesus Macaques. Virology 277(2):306-315
29. Buch S, Pinson D, King C, Raghavan R, Hou Y, Li Z, Adany I, Hicks A, Villinger F, Kumar A and Narayan O (2001) Inhibitory and enahncing effects of IFN-γ and IL-4 on SHIVKU replication in rhesus macaque macrophages: correlation between Th2 cytokines and productive infection in tissue macrophages during late stage infection. Cytokine . 13: 295-304.
30. S. Buch, Anil Kumar, F. Villinger, D. Pinson, Y. Hou, I. Adany, Z. Li, R. Raghava and O. Narayan (2002). Innate differences between simian human immunodeficiency virus ($SHIV_{KU-2}$) infected rhesus and pig-tailed macaques in development of neurological disease. Virology 295(1):54-62.
31. Mackay G, Niu Y, Liu Z, Mukherjee S, Li Z, Adany I, Buch S, Zhuge W, McClure H, Marayan O and Smith M (2002) Presence of Intact vpu and nef genes in Non-pathogenic SHIV is essential for acquisition of pathogenicity of this virus by serial passage in macaques. Virology 295(1):133-46
32. Andrey Hicks, R.Potula, Y Sui, F Villinger, D Pinson, I Adany, Z Li, C Long, P Cheney, J Marcario, F Novembre, N Mueller, A Kumar, E Major, O Narayan

and S Buch (2002) Neuropathogenesis of Lentiviral Infection in Macaques: Roles of CXCR4 and CCR5 viruses and IL-4 in Enhancing MCP-1 Production in Macrophages. Am J. Pathol. 161(3):813-822
33. Anil Kumar, S Mukherjee, J Shen, S Buch, Z Li, I Adany, Z Liu, W Zhuge, M Piatak, J lifson, H. McClure and O Narayan (2002) Immunization of mavcaques with live SHIV vaccines conferred long-term protection and sterilizing immunity against mucosally inoculated homologous and heterologous challenge viruses. Virology 301(2):189-205.
34. Turchan J, Pocernich CB, Gairola C, Chauhan A, Schifitto G, Butterfield DA, Buch S, Narayan O, Sinai A, Geiger J, Berger JR, Elford H, Nath (2003) Oxidative stress in HIV demented patients and protection ex vivo with novel antioxidants. Neurology 2003 Jan 28;60(2):307-14
35. Silverstein PS, Buch S, and Bird RC (2003) Principles of cDNA cloning. In: Genetic Library Construction and Screening: Advanced techniques and Applications. Springer-Verlag.
36. S.Buch, Y Sui, R Potula, D Pinson and O Narayan (2004) Role of Interleukin-4 and Monocyte Chemoattractant Protein-1 in the CXCR4-Simain Human Immunodeficiency Virus Encephalitis. Journal of Neurovirology, 1:118-24.
37. Y Sui, R Potula, N Dhillon, D Pinson, S Li, A Nath, C Anderson, J T, D Kolson, O Narayan, and S Buch. (2004) Neuronal Apoptosis is mediated by CXCL10 Over-expression in Simian Human Immunodeficiency Virus-Encephalitis, Amer. J Pathol. 164(5):1557-66
38. R Potula, N Dhillion, Y Sui, C Zien, K Funa, D Pinson, O Narayan and S Buch (2004) Role of Platelet-derived Growth Factor-B chain in Simian Human Immunodeficiency Virus Encephalitis Amer. J Pathol.165(3):815-24
39. S Buch, Y Sui, N Dhillion; R Potula, C Zien, D Pinson, S Li, S Dhillon, B Nicolay, A Sidelnik, C Li, T Villinger, KBisarriya and O Narayan (2004) The enhancing effects of selected host response factors in the pathogenesis of X4 SHIV encephalitis J. Neuroimmunology, 157(1-2): 71-80
40. S Buch, Y Sui, R Potula, D Pinson, A. Adany, Li Z, Huang M, S Li, N Dhillon, E Major and O Narayan (2004) Role of interleukin-4 and monocyte chemoattractant protein-1 in the neuropathogenesis of X4 simian human immunodeficiency virus infection in macaques. J Neurovirol. 10(1):118-24.
41. M.Zhang, **S.Buch**, M. Norberg and W.Truog (2005) Responses of pulmonary platelet-derived growth factor peptides and receptors to hyperoxia and nitric oxide. Pediatric Research, Vol. 57.
42. Y Sui, S Li, D Pinson, I Adany, Z Li, F Villinger, O Narayan, and **S Buch** (2005). Simian Human Immunodeficiency Virus associated pneumonia correlates with increased expression of MCP-1, CXCL10 and viral RNA in the lungs of rhesus macaques Amer. J Pathol. 166; 355-365
43. N Dhillon, Y Sui, R Potula, S Dhillon, I Adany, Z Li, F Villinger, D Pinson, O Narayan, and **S Buch** (2005) Inhibition of Pathogenic SHIV Replication in Macaques Treated With Antisense DNA of Interleukin-4 Blood. 105(8):3094-3099.
44. Smith, M.S., Y. Niu, **S. Buch**, Z. Li, I. Adany, D.M. Pinson, R. Potula, F. J. Novembre, and O. Narayan. (2005) Active Simian Immunodeficiency Virus (strain smmPGm) Infection in Macaque CNS Correlates with Neurologic Disease. J. AIDS, 38(5):518-30.
45. Y Sui, L Stehno-Bittel, S Li, R Loganathan, D Pinson, A Nath, D Kolson, O Narayan, **S Buch**. (2006) CXCL10-induced Cell Death in Neurons: Role of Calcium Dysregulation. Eur.J Neurosci., 23(4):957-64.

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