BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME	POSITION TITLE
Xiao Xiao	Professor
eRA COMMONS USER NAME XiaoXiao	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
Shanghai Medical University, China	B.S.	1982	Pharmaceutical Chem.
Wuhan University, China	M.S.	1985	Biochemistry
University of Pittsburgh	Ph.D.	1992	Molecular Biology

A. Positions and Honors

2006	Eshelman Distinguished Professor, Division of Molecular Pharmaceutics, School of Pharmacy and Gene Therapy Center, Univ. of North Carolina at Chapel Hill.
2003-2006	Associate Professor with tenure, Dept. of Molecular Genetics & Biochemistry and Dept. of Orthopedic Surgery, Univ. of Pittsburgh
1998-2002	Tenure-track Assistant Professor, Dept.of Molecular Genetics & Biochemistry and Dept. of Orthopedic Surgery, Univ. of Pittsburgh
1997	Research Associate Professor, School of Pharmacy and Gene Therapy Center, Univ. of North Carolina at Chapel Hill.
1994-1997	Senior Scientist, Somatix Therapy Corporation, California, Visiting Scientist, Univ. of North Carolina at Chapel Hill, Gene Therapy Center.
1993	Associate Scientist and Scientist, Avigen Inc., California.
1989	Teaching Assistant for Genetics, Dept of Biological Sciences, Univ. of Pittsburgh.
1988	Teaching Assistant, Biology Lab Course, Dept of Biological Sciences, Univ. of Pittsburgh.
1986-1987	Research Assistant, Department of Molecular Biology, Vanderbilt University.
1985-1986	Instructor, taught Lab Molecular Biology, Dept. of Biology, Wuhan University, China.

B. Selected publications (from a total of > 100)

1 **Xiao, X**., Li, J. and Samulski, RJ.(1998) Production of high titer recombinant AAV vectors in the absence of helper adenovirus. J. Virol. 72: 2224-2232.

2 During MJ, Samulski RJ, Elsworth JD, Kaplitt MG, Leone P, **Xiao X**, Li J, Freese A, Taylor JR, Roth RH, Sladek Jr. JR, O'Malley KL, and Redmond Jr. DE.(1998) In vivo expression of therapeutic human genes for dopamine production in the caudates of MPTP-treated monkeys using an AAV vector., Gene Therapy, , 5: 820-827

3 Rabinowitz J E., **Xiao X.,** Samulski R.J. (1999) Adeno-associated virus: A new tool for cancer gene therapy Hum Gene Ther 10: 837

4 Li, J., D Dressman', YP Tsao, A Sakamoto, T Toyo-oka, EP. Hoffman and **X Xiao**. (1999) rAAV Vector Mediated sarcoglycan Gene Transfer In A Hamster Model For Limb Girdle Muscular Dystrophy, Gene Therapy. 6: 74-8

5 R-Y. Pan, **X Xiao**, S-L Chen, J Li, L-CLin, H-J Wang, Y-P Tsao, (1999) Disease-inducible transgene expression from a recombinant adeno-associated viral vector in a rat arthritis model, J. Virol. 73:3410-17

6 **Xiao, X**, Li, J., Tsao, YP., Dressman, D., Hoffman, EP. and Watchko, J. (2000) Full functional rescue of a complete muscle (TA) in dystrophic hamsters by adeno-associated virus vector-directed gene therapy, J. Virol.74:1436-1442

7 Pruchnic, R., Cao, BH., Qu, Z., **Xiao, X**., Li. J., Samulski, RJ., and Huard, J. (2000) The use of adeno-associated virus to circumvent the maturation dependent viral transduction of muscle fibers, Human Gene Therapy, 11:521-536.

8 Keir, SD., House, SB., Li, J., **Xiao, X**., and Gainer, H. (1999) Gene Transfer into hypothalamic organotypic cultures using an adeno-associated virus vector, Exp. Neurol, 160(2):313-6

9 Pan. RY., Chen, SL., **Xiao, X**., Liu, DW., Peng, HJ., Tsao, YP., (2000) Therapy and prevention of arthritis by recombinant adeno-associated virus vector with delivery of interleukin-1 receptor antagonist, Arthritis and Rheumatism, 43:289-97

10 Liu, DW., Tsao, YP., Kung, JT., Ding, YA., Sytwu, HK., **Xiao, X**., and Chen, SL. (2000) Recombinant adeno-associated virus expressing human papillomavirus 16 E7 peptide DNA inframely fused with heat shock protein DNA as a tumor vaccine for cervical cancer, J. Virol. 74(6):2888-94

11 Watchko, J., Li, J., Hoffman, EP., and **Xiao, X**. (2000) Contractile properties of Bio14.6 delta-sarcoglycan deficient hamster tebialis anterior muscle, Muscle & Nerve, in revision.

12 Sun, LW., Li, J. and **Xiao, X** (2000) Overcoming the size limitation of adeno-associated viral vectors by heterodimerization, Nature Medicine, 6:599-602.

13 Wang, B., Li, J. and **Xiao, X**. (2000) AAV vector carrying novel human mini-dystrophin genes effectively ameliorates muscular dystrophy in mdx mouse model, Proc. Natl. Acad. Sci, 97:13714-1371

14 Jiang, XC., S Qin, CP Qiao, A Skold, K Kawano, M Lin, **X Xiao** & AR. Tall (2001) Decreased ApoB Secretion and Atherosclerosis in Mice with Phospholipid Transfer Protein Deficiency, Nature Medicine, 7:847-852

15 David L. Silver, Nan Wang, **Xiao Xiao** and Alan R. Tall. (2001) HDL particle uptake mediated by SRBI results in selective sorting of HDL cholesterol from protein and polarized cholesterol secretion. J. Biol. Chem. 276:25287-93

16 Keir SD, **Xiao X**, Li J, Kennedy PG. (2001) Adeno-associated virus-mediated delivery of glial cell line-derived neurotrophic factor protects motor neuron-like cells from apoptosis. J. Neurovirol 7:437-46

17 Chen., Z., Lu, L., Li, J., Li, W., Fung, J.J., **Xiao, X**., Qian S. (2001) Transfection with genes encoding CTLA4-Ig mediated by adeno-associated virus vectors prolongs survival of heart allografts. Transplant Proc. 33(1-2):604

18 Cao, B., R. Pruchnic, M. Ikezawa, **X. Xiao**, Juan Li, T. J Wickham, I. Kovesdi, W. A. Rudert, and J. Huard (2001) The role of receptors in the maturation-dependent adenoviral transduction of myofibers, Gene Therapy, 11(4):521-36

19 Wang, Z., Qiu SJ., Ye, SL., Tang, ZY, and **Xiao X** (2001) Combined IL-12 and GM-CSF Gene Therapy for Murine Hepatocellular Carcinoma, Cancer Gene Therapy, 8:751-758

20 Chao, H., Sun, L., Liu, Y., Bruce, A., **Xiao, X**., and Walsh, CE (2002) Dimerization of rAAV vectors: a novel method fpr human factor VIII packaging and expression, Molecular Therapy 11(4):521-36

21 DeMiguel, F., Lou W., Skold, A., **Xiao, X**., Gao, A. (2002) Stat3 enhances androgen receptor ligand independent activation, Prostate 52:123-9

22 Ma, HI., Lin, SZ., Tsao, YP., Li, J., Chiang, YC., Chen, SL. **Xiao, X**., (2002) Intratumoral antiangiogenesis gene therapy for glioma using an AAV vector carrying angiostatin cDNA, Gene Therapy, 9:2-11

23 Qiao, CP., Skold, A., Li, J., and **Xiao, X**. (2002) inducible packaging cell lines for adeno-associated viral (AAV) vectors, J. Virol., 9: 2-11

24 Rabinowitz, JE., Rollings, F., Li, CW., Conrath, HE., Xiao, WD., **Xiao, X**. and Samulski, RJ. (2002) Cross packaging of a single AAV type 2 vector genome into multiple AAV serotypes enables transduction with broad specificity, J. Virol. 76:791-801

25 Ma, H-I, Guo P, Li J, Lin S-Z, Chiang Y-H, **Xiao X**, and Cheng S-Y(2002) Suppression of Intracranial Human Glioma Growth Following Intramuscular Administration of an Adeno-Associated Viral (AAV) Vector expressing Angiostatin, Cancer Research, 62: 756-763

26 Watchko J., T. O'Day, B. Wang, L. Zhou, Y. Tang, J. Li, and Xiao X. (2002) AAV Vector-Mediated Mini-Dystrophin Gene Therapy Improves Dystrophic Muscle Contractile Function in mdx Mice Human Gene Therapy, 13:1451-1460

27 CP. Qiao, B. Wang, XD. Zhu, Juan Li and **Xiao X.** (2002) A novel gene expression control system and its use in high-titer and stable 293 cell-based adeno-associated virus packaging cell lines, J. Virology 76: 13015-13027

28 K. Yuasa, M. Sakamoto, Y. Suzuki, A.Tanouchi, H. Yamamoto, Juan Li, JS. Chamberlain, **X. Xiao** and S. Takeda (2002) Adeno-associated virus vector-mediated gene transfer into dystrophin-deficient skeletal muscles encounters elevated immune response against the transgene product, Gene Therapy, 9:1576-1588

29 Tsai TH, Chen SL, **Xiao X**, Liu DW, Tsao YP (2002) Gene therapy for treatment of cerebral ischemia using defective recombinant adeno-associated virus vectors. Methods. 28:253-258

30 Tsai TH, Chen SL, **Xiao X**, Chiang YH, Lin SZ, Kuo SW, Liu DW, Tsao YP. (2003) Related Articles, Links Abstract Gene treatment of cerebral stroke by rAAV vector delivering IL-1ra in a rat model.Neuroreport. 14:803-7.

31 Yang XP, Yan D, Qiao C, Liu RJ, Chen JG, Li J, Schneider M, Lagrost L, **Xiao X**, Jiang XC (2003) Increased Atherosclerotic Lesions and Lipoprotein Oxidizability in Apolipoprotein E-Null Mice Overexpressing Plasma Phospholipid Transfer Protein. Arterioscler Thromb Vasc Biol. Jul y 10 issue

32 Mah C, Sarkar R, Zolotukhin I, Schleissing M, **Xiao X**, Kazazian HH, Byrne BJ. (2003) Dual Vectors Expressing Murine Factor VIII Result in Sustained Correction of Hemophilia A Mice. Hum Gene Ther. 14:143-52.

33 Z. Wang , Hsin-I Ma , J. Li, L. Sun and **X. Xiao** (2003)) Rapid and highly efficient transduction by double-stranded adeno-associated virus vectors in vitro and in vivo, Gene Therapy, 10: 2105-11..

34 J. Li, D. Wang , S. Qian , Z. Chen , T. Zhu and **X. Xiao** (2003) Efficient and Long-term intracardiac gene transfer in δ-sarcoglycan-deficiency hamster by adeno-associated virus vectors, Gene Therapy, 10:1807-1813

35 Makoto Ikezawa; Baohong Cao; Zhuqing Qu; Hairong Peng; **Xiao Xiao**; Ryan Pruchnic; Shigemi Kimura; Teruhisa Miike; Johnny Huard (2003) Dystrophin Delivery in Dystrophin-Deficient DMDmdx Skeletal Muscle by Isogenic Muscle-Derived Stem Cell Transplantation, human gene therapy 14:1533-1546

36 Wu WC, Lai CC, Chen SL, Sun MH, **Xiao X**, Chen TL, Tsai RJ, Kuo SW, Tsao YP. (2004) GDNF gene therapy attenuates retinal ischemic injuries in rats. Mol Vis. 10;10:93-102.

37 Wu S, Zhou L, Rose M, **Xiao X**, Graham SH. (2004) c-FLIP-L recombinant adeno-associated virus vector infection prevents Fas-mediated but not nerve growth factor withdrawal-mediated cell death in PC12 cells. Brain Res Mol Brain Res. 122(1):79-87.

38 Wang T, Li H, Zhao C, Chen C, Li J, Chao J, Chao L, **Xiao X**, Wang DW. (2004) Recombinant adeno-associated virus-mediated kallikrein gene therapy reduces hypertension and attenuates its cardiovascular injuries. Gene Ther. 2004 Jun 3

39 Cao G, Xiao M, Sun F, **Xiao X**, Pei W, Li J, Graham SH, Simon RP, Chen J. (2004) Cloning of a novel Apaf-1-interacting protein: a potent suppressor of apoptosis and ischemic neuronal cell death. J Neurosci. 24:6189-201.

40 Bilbao R, Reay DP, Li J, **Xiao X**, Clemens PR. Patterns of gene expression from in utero delivery of AAV serotype 1. Hum Gene Ther 2005 Jun;16(6): 678-684

41 Z. Wang, T. Zhu, C. Qiao, L. Zhou, B. Wang, J. Zhang, Juan Li & X. Xiao (2005) Adeno-associated virus serotype 8 efficiently crosses blood vessel barrier in muscle and heart for whole-body gene delivery, Nature Biotechnology, 23:321-328

42 Qiao C., T. Zhu, J. Li, R. Draviam, S. Watkins, X. Ye, C. Chen, J. Li**, X. Xiao**, (2005) Amelioration of laminin α2-deficient congenital muscular dystrophy by somatic gene transfer of mini-agrin, Proc. Natl. Acad. Sci. USA (PNAS) 102:11999-2004.

43 Zhu T., L. Zhou, S. Mori, Z. Wang [1], CF. McTiernan, C. Qiao, C. Chen, D. Wang, J. Li, & **X Xiao** (2005) Sustained whole-body functional rescue by gene transfer in congestive heart failure and muscular dystrophy hamsters, Circulation, 112:2650-9

44 X. Ye, T. Zhu, S. Bastacky, T. McHale, J. Li, **X**. **Xiao** (2005) Prevention and reversal of lupus in NZB/W mice by costimulatory inhibitor gene transfer with adeno-associated viral (AAV) vectors, Rheumatism and Arthritis, 52:3975-86

45 Draviam RA, Wang B, Li J, **Xiao X**, Watkins SC. (2006) Mini-dystrophin efficiently incorporates into the dystrophin protein complex in living cells. J Muscle Res Cell Motil. 2006 Feb 23; [Epub ahead of print]

46 Z. Wang, T. Zhu, KK. Rehman, S. Bertera, J. Zhang, CL. Chen, G. Papworth, S. Watkins, M. Trucco, PD. Robbins, J. Li, and **X. Xiao** (2006) Widespread and stable pancreatic gene transfer by AAV vectors via different routes, Diabetes, 5(4):875-84

47 RS. Traister, S. Fabre, Z. Wang, **X. Xiao,** R. Hirsch (2006) Inflammatory cytokines regulate transgene expression in fibroblast-like synoviocytes infected with adeno-associated virus Rheumatism and Arthritis, 54(7):2119-26
48 Draviam RA, Wang B, Shand SH, **Xiao X**, Watkins SC. (2006) Alpha-sarcoglycan is recycled from the plasma membrane in the absence of sarcoglycan complex assembly. Traffic. 7(7):793-810.
49 Chen CC, Ko TM, Ma HI, Wu HL**, Xiao X**, Li J, Chang CM, Wu PY, Chen CH, Han JM, Yu CP, Jeng KS, Hu CP, Tao MH. (2006) Long-term inhibition of hepatitis B virus in transgenic mice by double-stranded adeno-associated virus 8-delivered short hairpin RNA. Gene Ther. 14:11-9
50 Lai LJ, **Xiao X,** Wu JH. (2007) Inhibition of corneal neovascularization with endostatin delivered by adeno-associated viral (AAV) vector in a mouse corneal injury model. J Biomed Sci. 2007 Mar 21; [Epub ahead of print]
51 Pagnotto MR, Wang Z, Karpie JC, Ferretti M, **Xiao X**, Chu CR. (2007) Adeno-associated viral gene transfer of transforming growth factor-beta1 to human mesenchymal stem cells improves cartilage repair. Gene Ther. 2007 Mar 8; [Epub ahead of print]
52 Yuan G, Deng J, Wang T, Zhao C, Xu X, Wang P, Voltz JW, Edin ML, **Xiao X,** Chao L, Chao J, Zhang XA, Zeldin DC, Wang DW. (2007) Tissue Kallikrein Reverses Insulin Resistance and Attenuates Nephropathy in Diabetic Rats by Activation of PI3 kinase/Akt and AMPK Signaling Pathways. Endocrinology. 2007 Feb 1.
53 Jiang JG, Chen RJ, Xiao B, Yang S, Wang JN, Wang Y, Cowart LA, **Xiao X**, Wang DW, Xia Y. (2007) Regulation of endothelial nitric-oxide synthase activity through phosphorylation in response to epoxyeicosatrienoic acids. Prostaglandins Other Lipid Mediat. 2007 Jan;82(1-4):162-74
54 Quenneville SP, Chapdelaine P, Skuk D, Paradis M, Goulet M, Rousseau J, **Xiao X**, Garcia L, Tremblay JP. (2007) Autologous transplantation of muscle precursor cells modified with a lentivirus for muscular dystrophy: human cells and primate models. Mol Ther.15(2):431-8.

RESEARCH SUPPORT

Active funding:

1UO1 NS 46546 (Xiao) NIH/NINDS 1.8 cal. mos. 09/01/04-5/31/08
AAV mini-dystrophin for DMD gene therapy (in no-cost extension)

The overall goal of this proposal is to design , optimize and produce a recombinant AAV vector carrying a mini-dystrophin gene which will subsequently be tested for efficacy and safety studies as required by the FDA for future clinical studies.

1RO1AR050595 (Xiao) NIH/NIAMS 1.8 cal. mos. 4/1/04-3/31/09
Gene therapy for a severe DMD mouse model

The major goal of this project is to use transgenic mouse technology and gene transfer technology to test the functions of mini-dystrophin genes and its ability to rescue a severe DMD mouse model, which has both utrophin and dystrophin gene mutations, the double KO model.

2RO1AR45967 (Xiao) NIH/NIAMS 1.8 cal. mos. 10/1/04-7/31/09
AAV vectors for heart and muscle gene therapy

The major goal of this project is to use AAV vector to treat heart failure and limb-girdle muscular dystrophy in Bio14.6 and TO-2 hamster models, which have a mutation in the delta-sarcolgycan gene.