

CURRICULUM VITAE

Xiaoning Zhao, Ph.D

Recipient of The Heart Foundation's Steven S. Cohen Endowed Fellowship in Atherosclerosis Research at Cedars-Sinai Medical Center

ADDRESS

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EDUCATION AND TRAINING:

1. Aug 2000 - Oct 2003: Postdoctoral Researcher; Division of Cardiology, Cedars-Sinai Medical Center, Los Angeles, CA
2. Jan 2000-July 2000, Postdoctoral fellow, Department of Hematology, Children's Hospital of Los Angeles, Los Angeles, CA
3. Aug 1995 - July 1998: Ph.D. Department of Epidemiology, the Fourth Military Medical University (FMMU), Xi'an, PR.China. Thesis: Cloning of Hepatitis C virus genes derived from Chinese patient and construction of HCV eukaryotic expression carrier used as nucleic acid vaccines.
4. Aug 1989 - July 1992: MS. Department of Pharmacological Chemistry, FMMU, Xi'an, PR.China. Thesis: Synthesis of new styrene multi-co-polymeric latex with azidocarbonyl group and its application on clinical diagnosis for Rheumatoid .
5. Sep1980 - Aug 1984: BS, Biochemistry. Shaanxi Normal University, Xi'an, PR.China.

PROFESSIONAL EXPERIENCE:

1. Sep 2004 - present: Research Scientist; Division of Cardiology, Cedars-Sinai Medical Center, Los Angeles, CA 90048. Research projects: (1) Immunological mechanism of atherosclerosis; (2) Development of apoB-100 peptide-based immunotherapy of atherosclerosis; (3) The pathways mediating the entry of p210

into dendritic cells and subsequent functionality of apoB-100 peptide p210 loaded dendritic cells in vitro and in vivo.

2. Aug 2000 - Oct 2003: Postdoctoral Researcher; Division of Cardiology, Cedars-Sinai Medical Center, Los Angeles, CA 90048. Research projects:
 - (1) The effect of nitric oxide on proliferation of vascular smooth muscle cells;
 - (2) The inhibitory effect of Green tea derived epigallocatechin gallate on vascular smooth muscle cells in vivo and in vitro.
3. Nov 1999 - Aug 2000: Postdoctoral Researcher; Department of Hematology, Children Hospital of Los Angeles. Project focused on the Interaction between Retinoblastoma gene (Rb) and other oncogenes in cell cycle.
4. Aug 1995 - April 1999: Lecturer; Department of Epidemiology, The Fourth Military Medical University (FMMU), Xi'an, PR China. Research projects: (1) Cloned the sequence of hepatitis C virus derived from patients with HCV infection patients; (2) Constructed a DNA vaccine based on this sequence and tested its immune response in mice; (3) Constructed anti-VEGF Ribozyme; (4) Detected the expression of bax, bcl-2 and p53 genes in tumor cells.
5. Sep 1992 - July 1995: Lecturer; Department of Pharmacological Chemistry, FMMU. Research projects: (1) Demonstrate the biphasic effects of reactive oxygen on the expression of oncogene and suppressor in tumor, reactive oxygen and apoptosis. (2) Prepared an antibody specific for TGF alpha hepta-peptide, observed the effect of TGF alpha antisense RNA on proliferation and differentiation of human glioma cells.
6. July 1984-Nov 1992: Assistant Lecturer; Department of Pharmacological Chemistry, FMMU. Research projects: (1) Initiated the preparation of several new styrene multico polymeric latex with azidocarbonyl groups; (2) developed a new kind of large colored microsphere with carboxyl groups for cell surface labeling. (3) Explored the application of latex in clinical diagnosis.

GRANT AWARDS

1. Heart foundation Fellow award Aug 2015
2. CardioVax Inc: Apolipoprotein B 100 Peptide-based immunotherapy against atherosclerosis. Role: Research Scientist.
3. Max Factor Family Foundation: Green tea derived epigallocatechin gallate inhibits vascular smooth muscle cell proliferation and neointimal formation in murine carotid injury model. Role: Project Scientist.
4. Research Grant awarded by Chinese Nature Scientific Foundation. Project: Screening human hepatic cellular protein which can bind with HCV C region RNA. 2001-2004. No.39412504. Role: Principal Investigator.
5. Research Grant awarded by Shaanxi Nature Scientific Foundation Project: Cloning of HCV gene isolated from Shaanxi patients and its molecular epidemiological analysis. No.9K12-G11. 1998-2001. Role: Principal Investigator.
6. Research Grant awarded by Chinese Nature Scientific Foundation. Project. VEGF ribozyme inhibit proliferation of ovarian. 1997-1999. Role: Co-Principle Investigator.

SELECTED PUBLICATIONS

1. Peter M. Mihailovic, Wai Man Lio, Juliana Yano, **Xiaoning Zhao**, Jianchang Zhou, Kuang-Yuh Chyu, Prediman K. Shah, Bojan Cercek, Paul C. Dimayuga. The cathelicidin protein CRAMP is a potential atherosclerosis self-antigen in ApoE(-/-) mice Plos one, November 1, 2017, P 1-24
2. Paul C. Dimayuga; **Xiaoning Zhao**,; Juliana Yano,; Wai Man Lio; Jianchang Zhou, Peter M. Mihailovic, Bojan Cercek, ; Prediman K. Shah, ; Kuang-Yuh Chyu, MD, PhD Identification of apoB-100 Peptide-Specific CD8+ T Cells in Atherosclerosis July 17, 2017, Journal of the American Heart Association
3. Honjo T, Chyu KY, Dimayuga PC, Yano J, Lio WM, Trinidad P, **Zhao X**, Zhou J, Chen S, Cercek B, Arditi M, Shah PK. ApoB-100-related peptide vaccine protects against angiotensin II-induced aortic aneurysm formation and rupture.

J Am Coll Cardiol. 2015 Feb 17;65(6):546-56. doi: 10.1016/j.jacc.2014.11.05

4. Chyu KY, Lio WM, Dimayuga PC, Zhou J, **Zhao X**, Yano J, Trinidad P, Honjo T, Cercek B, Shah PK. Cholesterol lowering modulates T cell function in vivo and in vitro. PLoS One. 2014 Mar 19;9(3):e92095. doi: 10.1371/journal.pone.0092095. eCollection 2014.
5. Zhou JC, Dimayuga P.C, **Zhao X**, Yano J, Lio W.M., Cercek B, Shah PK, Chyu K CD8(+)CD25(+) T cells reduce atherosclerosis in apoE(-/-) mice. Biochem. Biophys. Res. Commun.. 2014 Jan 17;443(3):864-70..
6. Chyu KY, Lio WM, Dimayuga PC, Zhou JC, **Zhao X**, Shah PK Cholesterol Lowering Modulates T Cell Function In Vivo and In Vitro. PLoS One. 2014;9(3): e92095
7. Chyu KY, **Zhao X**, Dimayuga PC, Zhou JC, Li XJ, Shah PK. CD8⁺ T Cells Mediate the Athero-Protective Effect of Immunization with an ApoB-100 Peptide. PLoS One. 2012;7(2): e30780.
8. Cesena FH, Dimayuga PC, Yano J, **Zhao X**, Kirzner J, Zhou J, Chan LF, Lio WM, Cercek B, Shah PK, Chyu KY. Immune-modulation by polyclonal IgM treatment reduces atherosclerosis in hypercholesterolemic apoE^{-/-} mice. Atherosclerosis. 2011 Oct 12.
9. Dimayuga PC, Chyu KY, Kirzner J, Yano J, **Zhao X**, Zhou J, Shah PK, Cercek B. Enhanced neointima formation following arterial injury in immune deficient Rag-1^{-/-} mice is attenuated by adoptive transfer of CD8 T cells. PLoS One. 2011;6(5):e20214. Epub 2011 May 24
10. Paul C. Dimayuga, **Xiaoning Zhao**, Juliana Yano, and Kuang-Yuh Chyu Changes in immune responses to oxidized LDL epitopes during aging in hypercholesterolemic apoE_(/_) mice Am J Physiol Regul Integr Comp Physiol 291: R1644–R1650, 2006.
11. Chyu KY, **Zhao X**, Reyes OS, Babbidge SM, Dimayuga PC, Yano J, Cercek B, Fredrikson GN, Nilsson J, Shah PK. Immunization using an Apo B-100 related

epitope reduces atherosclerosis and plaque inflammation in hypercholesterolemic apo E (-/-) mice. *Biochem Biophys Res Commun.* 2005 Dec 30;338(4):1982-92

12. Chyu KY, Dimayuga PC, Zhao X, Nilsson J, Shah PK, Cercek B. Altered AP-1/Ref-1 redox pathway and reduced proliferative response in iNOS-deficient vascular smooth muscle cells. *Vasc Med.* 2004 May;9(3):177-83
13. Chyu KY, Reyes OS, **Zhao X**, Yano J, Dimayuga P, Nilsson J, Cercek B, Shah PK. Timing affects the efficacy of LDL immunization on atherosclerotic lesions in apo E (-/-) mice. *Atherosclerosis.* 2004 Sep;176(1):27-35
14. Chyu KY, Babbidge SM, **Zhao X**, Dandillaya R, Rietveld AG, Yano J, Dimayuga P, Cercek B, Shah PK. Differential effects of green tea-derived catechin on developing versus established atherosclerosis in apolipoprotein E-null mice. *Circulation.* 2004 May 25;109(20):2448-53
15. Hui H, **Zhao X**, Perfetti R. Structure and function studies of glucagon-like peptide-1 (GLP-1): the designing of a novel pharmacological agent for the treatment of diabetes. *Diabetes Metab Res Rev.* 2005 Jul-Aug;21(4):313-31.
16. Hui H, Khoury N, **Zhao X**, Balkir L, D'Amico E, Bullotta A, Nguyen ED, Gambotto A, Perfetti R. Adenovirus-mediated XIAP gene transfer reverses the negative effects of immunosuppressive drugs on insulin secretion and cell viability of isolated human islets. *Diabetes.* 2005 Feb;54(2):424-33.
17. Hui H., Norparvar A., **Zhao X**, Perfetti R. Glucagons-like peptide-1 inhibits apoptosis of insulin secreting cells via a cAMP-dependent and protein-kinase dependent pathway. *Endocrinology,* 2003 Apr;144(4):1444-55
18. **Zhao X**, Liu YC, Wu DC: Preparation of large colored microspheres with carboxyl groups for cell surface labeling. *Journal of medical colleges of PLA* 1997; 12(1):62-65 (In English).
19. **Zhao X**, Dezhong Xu, Jingxia Zhang. Cloning and sequencing of core gene cDNA of hepatitis C virus derived from a patient with HCV infection in China. *Journal of the Fourth Military Medical University (in Chinese)* 1998, 19 (1) 66-69.*The nucleotide sequence reported in this paper has been submitted to the GenBank/EBI Data Bank with accession number AF034629

20. **Zhao X**, Dezhong Xu, Jingxia Zhang. Cloning and sequencing of 5'NCR cDNA of HCV derived from a patient with HCV infection in China. Journal of the Fourth Military Medical University (in Chinese) 1998, 19 (2) 181-183 **The nucleotide sequence reported in this paper has been submitted to the GenBank/EBI Data Bank with accession number AF034628
21. **Zhao X**, Xu DZ, Construction and identification of HCV eukaryotic expression carrier used as nucleic acid vaccines. Chinese Journal of experimental and clinical virology 1997; 11(Additional):3-5.(In Chinese)
22. **Zhao X**, Zhang JX, Xu DZ: The construction of HCV core protein expression vector and the expression in eukaryotic host cells. Chinese Journal of Epidemiology 1998;19(5-B):100-101.(In Chinese)
23. Zhao X, Xu DZ: Immune response in mice with DNA encoding HCV core protein. Chinese Journal of Epidemiology 1998;19(5-B):96-99.(In Chinese)
24. Zhao X., Xu D.: The progress of peptide vaccine. Foreign Medical Science (Immunization and Vaccine). 1997,20(6):250(In Chinese)
25. Zhao X, Liu YC, Wu DC. Preparation of new styrene multicopolymeric latex with azidocarbonyl groups. Journal of the fourth military medical university 1993; 14(2):153-156. (In Chinese)
26. Zhao X., Liu YC, Wu DC. Preparation of a large colored microspheres with azidocarbonyl groups on the surface. J. Biological Medical Engineering 1994; 11(3):247-253. (In Chinese)
27. Zhou HC, Zhu Y, Zhao X Jin BQ: Identification of restrict CTL isotope on HCV C protein. Cellular and molecular immunology. 1999, 15(1):10(In Chinese)
28. Huo Y, Xu D, Zhao X. Sequence comparison of the 5'NCR of HCV genome in different geographical regions of China. J. Preventive Medicine of PLA 2001;19(3):174-177.(In Chinese).
29. Huo Y, Xu D, Zhao X. Analysis of Envelop cDNA of HCV 2a derived from a patient with HCV infection in Xi'an China Chinese J. Preventive Medicine 2001;35(1):69. (In Chinese)
30. Huo Y, Xu D, Zhao X. Genotyping hepatitis C virus isolates from Xi'an and Zheng Zhou . Journal of the fourth military medical university 2002;23(8):749 (In

Chinese)

31. Liu W, Wang J, Zhao X; Porous gelatin microspheres: a new tracer carrier
ACTA Anatomica Sinica 1996;27(4):445-446.(In Chinese)
32. Huo Y, Xu D, Zhao X. Phylogenetic analysis of partial cDNA sequence of
Hepatitis C virus derived from a patient with HCV infection in China. China Public
Health. 2001;17(9)
33. Jin M., Zhao X Preparation of an antibody against human transforming growth
factor a hepta-peptide and its effect on proliferation of human glioma cell line
BT325. Chinese J. of immunology. 1994;10(2):70 (in Chinese)
34. Wu D.C, Liu YC, Zhao X: Preparation of lattices with functional group contained
N and their application in rapid diagnosis of some disease". J. Biological
Medical Engineering 1999; 16(1):1. (In Chinese)

Conferences & Presentations

1. **Xiaoning Zhao**, Kuang-Yuh Chyu, Paul C. Dimayuga, Jianchang Zhou, Juliana Yano, Wai Man Lio, Tomoyuki Honjo, Portia Trinidad, Bojan Cercek, Prediman K. Shah. Increased cytolytic activity by CD8⁺ T cells from apoB-100 related-peptide immunized mice is specific to lipid-associated antigens. Nov 2011, Orlando
2. Kuang-Yuh Chyu, **Xiaoning Zhao**, Paul C. Dimayuga, Juliana Yano, Jianchang Zhou, Wai Man Lio, Bojan Cercek, Prediman K. Shah ApoB-100 peptide-primed dendritic cells confers atheroprotective effect in hypercholesterolemic apoE(-/-) mice, Nov 2011, Orlando
3. Jianchang Zhou, Kuang-Yuh Chyu, **Xiaoning Zhao**, Paul C. Dimayuga, Juliana Yano, Wai Man Lio, Lai Fan Chan, Portia Trinidad, Tomoyuki Honjo, Bojan Cercek, Prediman K. Shah Adoptive transfer experiments in apoE^{-/-} mice define an inhibitory role for CD8⁺CD25⁺ T cells in atherosclerosis. Nov 2011, Orlando
4. Wai Man Lio, Kuang-Yuh Chyu, Paul C. Dimayuga, Juliana Yano, Jianchang Zhou, **Xiaoning Zhao**, Portia Trinidad, Tomoyuki Honjo, Bojan Cercek, Prediman

- K. Shah Lipid Lowering Modulates T cell Function in vivo and in vitro Nov 2011, Orlando
5. Tomoyuki Honjo, Paul C. Dimayuga, Kuang-Yuh Chyu, **Xiaoning Zhao**, Jianchang Zhou, Juliana Yano, Wai Man Lio, Portia Trinidad, Bojan Cercek, Prediman K. Shah. ApoB-100 related peptide vaccine reduces hypertension and mortality in a model of angiotensin II-induced aortic aneurysm in ApoE(-/-) mice: a novel therapeutic paradigm. Circulation. 2011;
 6. **Xiaoning Zhao**, Kuang-Yuh Chyu, Paul C. Dimayuga, Juliana Yano, Xiaojun Li, Portia Trinidad, Jianchang Zhou, Wai Man Lio, Jonathan Kirzner, Lai F Chan, Bojan Cercek, Prediman K. Shah Athero-protective Effects of Immunization with apoB-100 Related Peptide Vaccine in apoE(-/-) Mice is Associated with Enhanced CD8 Regulatory T cell Response America Heart Association Nov 2009, Orlando
 7. **Xiaoning Zhao**, Kuang-Yuh Chyu, Juliana Yano, Paul C. Dimayuga, Xiaojun Li, Portia Trinidad, Svetlana Jovicic, Bojan Cercek, Jan Nilsson, Prediman K. Shah Athero-Protective Effects of a Human ApoB-100 Related Peptide Vaccine in ApoE-/- Mice Are Modulated by Peptide Dose and Time of Initiation of High Fat Diet. American college of cardiology March 31, 2008, Chicago (Oral Presentation).
 8. Kuang-Yuh Chyu; Paul Dimayuga; **Xiaoning Zhao** Altered AP-1/Ref-1 Redox Pathway in iNOS Deficient Vascular Smooth Muscle Cells: A Novel Involvement of iNOS in Cellular Signaling. American college of cardiology, March 2003, Chicago.
 9. Odette S. Reyes, Kuang-Yuh Chyu, Juliana Yano, **Xiaoning Zhao**, etc. Immunization with a novel human Apolipoprotein B 100 related peptide reduces atherosclerosis and inflammation in Apo E null mice American college of cardiology, March, 2002 Atlanta .
 10. Setphanie M. Babbidge, **Xiaoning Zhao**, Ramprasad Dandillaya, etc. Green tea derived polyphenol antioxidant, EGCG, differentially modulates developing compared to mature atherosclerotic lesions in Apo E-/- mice American college of cardiology, March 2003, Chicago.

11. Xiao Jun Li, Juliana Yano, Kuang-Yuh Chyu, **Xiaoning Zhao**, etc. Early expression of Toll-like receptor-4 in vein graft atherosclerosis in Apo E (-/-) mice suggests a potential role for activation of innate immunity in accelerated atherosclerosis. American college of cardiology, March 2003, Chicago.
12. Takeo Anozawa, Hong Yan Li, **Xiaoning Zhao**, etc. Selective inducible nitric oxide synthase inhibitor mercaptoethylguanidine attenuates neointimal formation in injured mice exposed to cigarette smoke. American college of cardiology, 2002 March 17-20, Atlanta.
13. Takeo Anazawa, Juliana Yano, **Xiaoning Zhao**, Sanjay Kaul, Paul Dimayuga. Cigarette smoke creates an unstable atherosclerotic plaque phenotype by enhancing vascular oxidative stress, increasing VEGF stimulation and producing collagen loss in apo E -/- mice. American college of cardiology, 2002 March 17-20, Atlanta
14. W DC, Liu YC, Zhao X.N, The preparation and diagnostic application of new diazo and azidocarbonyl latex. 34th annual rocky mountain bioengineering symposium, April 11-13, 1997, USA.
15. Hui H, Nourparvar a, Zhao x.N, Perfetti r. Glucagon-like peptide-1 inhibits apoptosis of insulin secreting cells via a cAMP-dependent and protein-kinase-dependent pathway. XXXVIII Annual meeting of the European Society for the Study of Diabetes, Budapest, Hungary, Sept 1-5th, 2002.
16. R. Perfetti, H. Hui, A. Nourparvar, X.N. Zhao: GLP-1 is an anti-apoptotic factor for insulin secreting cells. 61st Annual Meeting of the American Diabetes Association, Philadelphia, PA, June 22-26, 2001.
17. Hui H., Zhao X.N., Perfetti R. GLP-1 is a Differentiation Factor for Pancreatic Beta-Cells. 61st Annual Meeting of the American Diabetes Association, Philadelphia, PA, June 22-26, 2001.
18. Hongxiang Hui, Charles Wang, Xiaoning Zhao, Hongmei Li, Angela Bullota, Eugenio D`Amico, Elizabeth Nguyen, Nasif Khoury, Riccardo Perfetti Gene expression study of freshly isolated human islets: advantages and limitations of using microarray analysis for expression profiling. Western Region Islet Study Group, Seattle, WA, September 19-21, 2003.

19. Hui H, Knoury N, Bulotta A, Zhao X.N, Nguyen E, Damico E and Perfetti R. Adenovirus-mediated XIAP gene transfer reverses the negative effects of immunosuppressive drugs on insulin secretion and improves the viability of isolated human islets. Western Region Islet Study Group, Seattle, WA, September 19-21, 2003.
20. Zhao XN, Liu Y.C, Wu D.C, Preparation of three kinds of new colored large microspheres used for cell labeling. The first far east bioengineering symposium, 1993; Beijing

Books

1. Zhao X: Medical polymer chemistry. 1994, Shaanxi Science and Technology Press, Xi'an. (In Chinese, contributed two chapters)
2. Zhao X. The molecular biology of infectious disease. In Yang WZ, Infectious disease. 1997, PLA Press, Beijing, PR.China. (In Chinese, Contributed one chapter)
3. Zhao X. The methods of molecular biology in molecular epidemiology. In Xu DZ, Molecular epidemiology. 1998, PLA Press, Beijing, PR.China (In Chinese, contributed one chapter)
4. Zhao X. Diabetes and Nobel Prize. In Liu GH. Updated Progress in Life Science, Dec 2003. Beijing University Press, Beijing, PR.China (In China, contributed one chapter)