

QIN, GANGJIAN

Northwestern University
Feinberg School of Medicine

Feinberg Cardiovascular Research Institute
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Gangjian Qin, MD
Assistant Professor of Medicine
Investigator

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NORTHWESTERN
UNIVERSITY

October 16, 2007

Richard M. Green, MD
Associate Professor of Medicine
Director, Medical Student Summer Research
and Research Thesis Programs
Northwestern University

Dear Dr. Green:

I am interested in serving as a mentor in the Medical Student Summer Research Program (MSSRP) and the Research Thesis Program (RTP).

I am currently a tenure-track faculty member running a research laboratory in the Feinberg Cardiovascular Research Institute. The lab research concerns ischemic heart disease and adult stem/progenitor cell-mediated cardiovascular repair, involving animal models, molecular and cellular mechanisms.

It has been my goal to attract, recruit, and tutor students and young scientists, share and spread knowledge. As a biomedical researcher myself, I have had the experience that in a laboratory, how a good teaching environment can motivate young medical researchers, and in contrast, how the lack of proficient communication and tutoring can easily obscure creative ideas and frustrate researchers sometimes even with very simple procedures. My lab is committed to providing a good training environment for the students in the MSSRP and RTP programs.

Enclosed please find the completed form and my biosketch for your consideration.

Sincerely,

A handwritten signature in cursive script that reads "Gangjian Qin".

Gangjian Qin, MD
Investigator, Feinberg Cardiovascular Research Institute
Assistant Professor
of Medicine, Molecular Pharmacology & Biological Chemistry
Northwestern University

Medical Student Summer Research Program (MSSRP) and Research Thesis Program (RTP): Mentor Information

1) Research description (maximum 1 page):

a) General research description

Laboratory studies the cardiovascular functions of the E2F family of transcription factors, in particular with respect to ischemic vasculogenesis and hypertension. Another focus area is adult stem cells, to identify genes and molecular pathways that are critical for cardiac and vascular tissue repair.

b) Description of potential MSSRP or RTP student projects

Project 1): to identify co-factors, which interact with E2F1 and determine the specificity of E2F1-mediated suppression of VEGF transcription under hypoxic condition.

Project 2): to identify signaling pathways that mediate alpha4 integrin-dependent mobilization of bone marrow vascular stem/progenitor cells and the impact on ischemic vasculogenesis.

2) Cover letter explaining the reasons for your interest in becoming a mentor

Enclosed

3) Current Biosketch

Enclosed

4) Trainees over the past 5 years (undergraduate, medical or graduate students; post-doctoral fellows)

Under graduate: Ms. Chantel

Graduate students: Ms. Min Cheng

Post-doctoral fellows: Junlan Zhou, MD, PhD; Wuqiang Zhu, MD, PhD

Research area (check all that apply):

Basic Science

Translational Science

Clinical Science

Other _____

BIOGRAPHICAL SKETCH

NAME	POSITION TITLE
Gangjian Qin	Investigator, Feinberg Cardiovascular Research Institute Assistant Professor of Medicine Assistant Professor of Molecular Pharmacology and Biological Chemistry
eRA COMMONS USER NAME	Northwestern University 303 E Chicago Ave, Tarry 14-751 Chicago, IL 60611 312.503-1652 (phone); 312.503-1655 (fax)
GANQIN	

EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE	YEAR(s)	FIELD OF STUDY
Tongji Medical University, China	M.D./M.S.	1981-1989	Medicine/Biochemistry
International Centre for Genetic Engineering and Biotechnology, Italy	Postdoctoral	1995-1998	Molecular Biology
University of Illinois at Chicago, IL	Postdoctoral	1998-2001	Stem Cell Gene Transfer

A. Positions and Honors**Postdoctoral Training**

- 1989-1991 Resident, Department of Pediatrics, Union Hospital of Tongji Medical University, China
- 1991-1992 Pediatrics Fellow, Specialization in Neonatology, Division of Neonatology, Union Hospital of Tongji Medical University, China
- 1995-1998 Postdoctoral fellow, Department of Molecular Medicine, International Centre for Genetic Engineering and Biotechnology, Trieste, Italy
- 1998-2001 Research Associate, Hematology/Oncology Section, University of Illinois at Chicago, IL

Academic Appointments

- 1992-1995 Lecturer, Tongji Medical University, Attending Physician, Union Hospital, China
- 2001-2003 Instructor in Medicine, St. Elizabeth's Medical Center, Tufts University School of Medicine, MA
- 2004-2007 Assistant Professor of Medicine, St. Elizabeth's Medical Center, Tufts University School of Medicine, MA
- 2007- Investigator, Feinberg Cardiovascular Research Institute, Assistant Professor of Medicine, Northwestern University Feinberg School of Medicine, IL
- 2007- Assistant Professor of Molecular Pharmacology and Biological Chemistry, Northwestern University.

Hospital Appointments

- 1992-1995 Attending Physician, Director of Neonatal Wards and NICUs, Department of Pediatrics, Union Hospital of Tongji Medical University, China

Teaching Responsibilities

- 1992-1995 Lecturer, *Clinical Biochemistry*, Tongji Medical University, China
Lecturer, *Neonatal Resuscitation and Artificial Ventilation*, Union Hospital
- 2000 Seminar, *Viral Vector-mediated Stem Cell Gene Transfer*, for graduate students at Department of Biochemistry and Molecular Genetics, UIC
- 2001- Training of postdoctoral fellows, cardiology fellows, summer students, and research technicians, St. Elizabeth's Medical Center

Research Interest

Laboratory studies the cardiovascular functions of the E2F family of transcription factors, in particular with respect to ischemic angiogenesis and hypertension. Another focus area is adult stem cells, to identify genes and molecular pathways that are critical for cardiac and vascular tissue repair.

Honors and Awards

- 1991 Science and Technology Development Prize (3rd place), Wuhan Science and Technology Ministry, China
- 1995 Postdoctoral Fellowship, United Nations Industrial Development Organisation (UNIDO)
- 1998 Keck Postdoctoral Fellowship, William M. Keck Foundation
- 2000 Travel Award, NIDDKD / NIH
- 2004 Scientist Development Grant, American Heart Association, National Center
- 2004 Melvin L. Marcus Young Investigator Award in Cardiovascular Sciences (Finalist) at American Heart Association's Scientific Sessions, held at New Orleans, LA, November 2004
- 2007 Member of the Department of Medicine's Investigators Developing Excellence in Academics (DOM IDEAS) group, Northwestern University Feinberg School of Medicine
- 2007 Searle Fellow for Teaching Excellence, Northwestern University

Other Experience and Professional Memberships

- 1999-2003 Member, American Society of Gene Therapy
- 2001-2004 Member, American Society of Hematology
- 2001- Member, American Heart Association
- 2000- Adjunct Reviewer for *Journal of Clinical Investigation*, *Molecular Therapy*, *Circulation*, *Circulation Research*, *Experimental Hematology*, and *Cancer Research*
- 2006- Reviewer for *Journal of Cellular Physiology*
- 2007- Reviewer for *Diabetes*

Invited Lectures

1. St. Elizabeth's Medical Center Interdepartmental Seminar: *A Novel Function of Transcription Factor E2F1 in Angiogenesis*. May 13, 2005, Boston, MA
2. Nankai University Institute of Life Sciences: *E2F Family of Transcription Factors and Tumor Angiogenesis*. July 12, 2005, Tian Jin, China
3. Tongji Medical College, Huazhong University of Science and Technology, China: *Somatic Stem Cells for Cardiovascular Repair: The Promise and the Challenge*. July 24, 2005, Wuhan, China
4. CHINA TEDA BIOFORUM. Nov 3-6, 2005: *Endothelial Progenitor Cells for Therapeutic Angiogenesis*. Nov 4, 2005, Tian Jin, China
5. 4th Annual Symposium of the American Heart Association Council on Basic Cardiovascular Sciences: *Mobilization of Endothelial Progenitor Cells as A Potential Angiogenic Therapy for Ischemic Disease: Functional Study on $\alpha 4$ Integrin*. Aug 2, Keystone, CO

B. Selected Peer-reviewed Publications

1. Takenaka T, **Qin G**, Brady RO, and Medin JA. Circulation alpha-gal A Derived from Transduced Bone Marrow cells: Relevance for Corrective Gene Transfer for Fabry Disease. *Human Gene Therapy* 1999;10:1931-39.
2. Zentilin L*, **Qin G***, Tafuro S, Dinauer MC, Baum C and Giacca M. Variegation of Retroviral Vector Gene Expression in Myeloid Cells. *Gene Therapy* 2000;7:153-166 (* Equal contribution).
3. Takenaka T, Murray GJ, **Qin G**, Quirk JM, Ohshima T, Qasba P, Clark K, Kulkarni AB, Brady RO, and Medin JA. Long-term Enzyme Correction and Lipid Reduction in Multiple Organ of Primary and Secondary alpha-galactosidase A-deficient mice receiving transduced bone marrow cells. *Proc Natl Acad Sci USA* 2000;97:7515-20.
4. **Qin G**, Takenaka T, Telsch K, Kelley L, Howard T, Levade T, Deans R, Howard B, Malech HL, Brady RO, and Medin JA. Preselective Gene Therapy for Fabry Disease. *Proc Natl Acad Sci USA* 2001;98:3428-33.
5. Yoon YS, Wecker A, Heyd L, Park JS, Tkebuchava T, Kusano K, Hanley A, Scadova H, **Qin G**, Cha DH, Johnson KL, Aikawa R, Asahara T, Losordo DW. Clonally expanded novel multipotent stem cells from human bone marrow regenerate myocardium after myocardial infarction. *J Clin Invest* 2005;115:326-38.

6. Iwakura A, Dean J, Hamada H, Eaton E, **Qin G**, Losordo DW and Aikawa R. Use of recombinant adeno-associated viral vectors as a tool for labeling bone marrow cells. *J Mol Cell Cardiol* 2005; 38:799-802.
7. Kishore R, **Qin G**, Luedemann C, Bord E, Hanley A, Silver M, Yoon YS, Goukassian D, Losordo DW. The Cytoskeletal Protein Ezrin Mediates TNF-induced Cyclin A Transcriptional Repression. *J Clin Invest* 2005;115(7):1785-96.
8. Luedemann C, Bord E, **Qin G**, Zhu Y, Goukassian D, Losordo DW, Kishore R. Ethanol modulation of TNF-alpha biosynthesis and signaling in endothelial cells: synergistic augmentation of TNF-alpha mediated endothelial cell dysfunctions by chronic. *Alcohol Clin Exp Res.* 2005;29:930-8.
9. Li M, Nishimura H, Kusano K, **Qin G**, Yoon YS, Wecker A, Asahara T, and Losordo DW. Neuronal Nitric Oxide Synthase Mediates Statin-Induced Restoration of Vasa Nervorum and Reversal of Diabetic Neuropathy. *Circulation* 2005; 112(1):93-102.
10. **Qin G**, Li M, Wecker A, Bord E, Ma H, Gavin M, Goukassian DA, Yoon YS, Papayannopoulou T, Asahara T, Kearney M, Thorne T, Curry C, Eaton L, Heyd L, Dinesh D, Kishore R, Zhu Y, and Losordo DW. Functional disruption of alpha4 integrin mobilizes bone marrow-derived endothelial progenitors and augments ischemic neovascularization. *J Exp Med* 2006;203:153-63.
11. Iwakura A, Shastry S, Luedemann C, Hamada H, Kawamoto A, Kishore R, Zhu Y, **Qin G**, Silver M, Thorne T, Eaton E, Masuda H, Asahara T, and Losordo DW. Estradiol Enhances Recovery after Myocardial Infarction by Augmenting Incorporation of Bone Marrow-Derived Endothelial Progenitor Cells into Sites of Ischemia Induced Neovascularization via Endothelial Nitric Oxide Synthase-Mediated Activation of Matrix Metalloproteinase-9. *Circulation* 2006, 113(12):1605-14.
12. **Qin G**†, Kishore R, Dolan CM, Silver M, Wecker A, Luedemann CN, Thorne T, Hanley A, Curry C, Heyd L, Dinesh D, Kearney M, Martelli F, Murayama T, Goukassian DA, Zhu Y, Losordo DW†. Cell Cycle Regulator E2F1 Modulates Angiogenesis via p53-dependent Transcriptional Control of VEGF. *Proc Natl Acad Sci USA* 2006, 103(29):11015-20. (Track II) († corresponding author).
13. Rajasingh J, Bord E, Luedemann C, Asai J, Hamada H, Thorne T, **Qin G**, Goukassian D, Zhu Y, Losordo DW, and Kishore R. IL-10-induced TNF-alpha mRNA destabilization is mediated via IL-10 suppression of p38 MAP kinase activation and inhibition of HuR expression. *FASEB J* 2006, 20(12):2112-4.
14. Fu J, Lin G, Wu Z, Ceng B, Wu Y, Liang G, **Qin G**, Li J, Chiu I, Liu D. Anti-apoptotic role for C1 inhibitor in ischemia/ reperfusion-induced myocardial cell injury. *Biochem Biophys Res Commun* 2006, 349(2):504-12.
15. Fu J, Lin G, Zeng B, Wu Z, Wu Y, Chu H, **Qin G**, Liang G, Li J, Gan X, Yu X, Li C, Liu D. Anti-ischemia/reoxygenation of C1 inhibitor in myocardial cell injury via regulation of local myocardial C3 activity. *Biochem Biophys Res Commun* 2006, 350(1):162-8.
16. Hamada H, Kim MK, Iwakura A, Li M, Thorne T, **Qin G**, Asai J, Tsutsumi Y, Sekiguchi H, Silver M, Wecker A, Bord E, Zhu Y, Kishore R, Losordo DW. Estrogen receptors alpha and beta mediate contribution of bone marrow-derived endothelial progenitor cells to functional recovery after myocardial infarction. *Circulation* 2006, 114(21):2261-70.
17. Goukassian DA, **Qin G**, Dolan C, Murayama T, Silver M, Curry C, Eaton E, Luedemann C, Ma H, Asahara T, Zak V, Mehta S, Burg A, Thorne T, Kishore R and Losordo DW. Tumor Necrosis Factor- α Receptor p75 is Required in Ischemia-Induced Neovascularization. *Circulation* 2007;115:752-62.
18. Zhang H, **Qin G**, Liang G, Li J, Barrington RA, Liu DX. C5aR-mediated myocardial ischemia/reperfusion injury. *Biochem Biophys Res Commun.* 2007;357(2):446-52.
19. Rajasingh J, Bord E, **Qin G**, Li M, Silver M, Hamada H, Ahluwalia D, Goukassian D, Zhu Y, Losordo DW, Kishore R. Enhanced voluntary alcohol consumption after estrogen supplementation negates estrogen-mediated vascular repair in ovariectomized mice. *Endocrinology.* 2007;148(8):3618-24.

20. Zhang H, **Qin G**, Liang G, Li J, Chiu I, Barrington RA, Liu D. Suppression of complement regulatory protein C1 inhibitor in vascular endothelial activation by inhibiting vascular cell adhesion molecule-1 action. *Biochem Biophys Res Commun.* 2007;358(4):1120-7.
21. Zhang H, Li J, Barrington RA, Liang G, **Qin G**, Liu DX. An anti-endotoxin peptide that generates from the amino-terminal domain of complement regulatory protein C1 inhibitor. *Biochem Biophys Res Commun.* 2007;359(2):285-91.
22. Dongxu Liu, Fengxin Lu, Gangjian Qin, Stacey M. Fernandes, Jinan Li, and Alvin E. Davis III. C1 Inhibitor-Mediated Protection from Sepsis. *J Immunol* 2007;179(6):3966-72.
23. Johnson Rajasingh, Evelyn Bord, Hiromichi Hamada, Erin Lambers, Gangjian Qin, Douglas W. Losordo, and Raj Kishore. STAT3-Dependent Mouse Embryonic Stem Cell Differentiation Into Cardiomyocytes. Analysis of Molecular Signaling and Therapeutic Efficacy of Cardiomyocyte Precommitted mES Transplantation in a Mouse Model of Myocardial Infarction. *Circulation Research* Epub ahead of print Sep 6, 2007
24. Hyun-Jai Cho, Namho Lee, Ji Yoon Lee, Yong Jin Choi, Masaaki Ii, Andrea Wecker, Jin-Ok Jeong, Cynthia Curry, Gangjian Qin, Young-sup Yoon. Role of host tissues for sustained humoral effects following endothelial progenitor cell transplantation into the ischemic heart. *J Exp Med* 2007 (In press).
25. Moussa CEH, Veereshwarayya V, Rosen KM, Qin G, Querfurth HW. Dual mechanisms of parkin to counteract beta-amyloid: Increased proteasome-mediated clearance and mitochondrial protection (in revision).
26. Tang Y-L, Qin G, Shen L, Qian K, Phillips MI. Functional CXCR4 induction by hypoxia promotes mobilization of cardiosphere-derived cells (In revision).
27. Rajasingh J, Hamada H, Bord E, **Qin G**, Mehta S, Silver M, Zhu Y, Goukassian D, Losordo DW, and Kishore R. De-differentiation of somatic cells for post-infarct cardiac repair (Submitted).
28. Lu P, Poh K-K, Silver M, **Qin G**, Mendelsohn ME, Zhu Y. Selective Inhibition of cGMP-Dependent Protein Kinase I_ In Vivo in Adult Mice Induces Endothelial Dysfunction and Hypertension (Submitted).
29. Tang Y-L, Liu D, Kishore R, and Losordo DW, **Qin G**. A novel function of E2F in regulation of angiogenesis. (*Cell Cycle* 2006, invited, in submission).
30. Wecker A, Silver M, Thorne T, Ii M, Luedemann CN, Curry C, Liu DX, Liu Y, Tang YL, Poh KK, Shastry S, Goukassian DA, Zhu Y, Kishore R, Losordo DW, and **Qin G**. Dose-dependent pro- and anti-proliferative effects of Rosuvastatin in endothelial cells: relevance to ischemia induced angiogenesis. (In submission).
31. Zhu Y, Kishore R, Dinesh D, Thorne T, Poh K-K, Losordo DW, **Qin G**. Isoform-specific dysregulation of endothelin converting enzyme-1 and hypertension in E2F2-deficient mice (In submission).

Published abstracts and presentations at international and national conferences: More than 50.

Book Chapters:

1. **Qin G** and Losordo DW. E2F Transcription Factors in Cardiovascular Physiology (Book: *Control of Cellular Physiology by Transcription factors E2F* (2007), in press)

C. Research Support

Ongoing Research Support

0430135N (PI: Qin, G)

01/01/2004-12/31/2007

American Heart Association National Center Scientist Development Grant

"Molecular mechanisms of E2F1-mediated inhibition of angiogenesis"

Role: PI

Applicable direct costs: \$260,000.

0037-370-43FZ-5520 (PI: Qin, G)

01/01/2007-12/31/2009

Start up fund (Northwestern University)

Role: PI

Applicable direct costs: \$750,000

Principal Investigator/Program Director (Last, First, Middle): Qin, Gangjian

Pending Research Support

NHLBI, NIH

04/01/2007-03/31/2012

"E2F transcription factors and ischemic angiogenesis"