| BIOGRAPHICAL SKETCH | | | |
|---|---|---|---|
| **NAME**<br>Xin Qi | **POSITION TITLE**<br>Assistant Professor of Physiology & Biophysics, Case Western Reserve University | | |
| **EDUCATION/TRAINING** | | | |
| **INSTITUTION AND LOCATION** | **DEGREE** | **YEAR(s)** | **FIELD OF STUDY** |
| Stanford University, USA | Post-doc | Apr 2005-Feb 2011 | Neurological disease and signal transduction |
| Hokkaido University, Japan | Ph.D. | 2005 | Cerebrovascular disease |
| Shenyang Pharmaceutical University, China | MS | 2002 | Cardiovascular disease |
| Shenyang Pharmaceutical University, China | BS | 1999 | Pharmacy |

## A. PERSONAL STATEMENT

Dr. Xin Qi is a neuroscientist whose research has been focused on understanding the pathogenesis of neurological diseases including stroke and neurodegenerative diseases, such as Huntington's disease (HD) and Parkinson's disease (PD), and on identifying potential therapeutics to treat these disorders. Currently, she is studying the role of mitochondrial dysfunction in various models of neurological diseases. She has recently developed selective peptide inhibitors of excessive mitochondrial fission, a process involved in mitochondrial morphology regulation and mitochondria-related cell death. Her lab is currently applying these peptide inhibitors in the models of neurodegenerative diseases, such as PD, HD and stroke. In addition, she aims to identify the mechanism by which factors or mutants causing PD and HD mediate mitochondrial injury and cell damages. Dr. Qi uses a multiple-disciplinary approach in her research, and in addition to in vitro cultured cells and in vivo diseased animals as well as drug design, it also includes the establishment of patient specific induced pluripotent stem (iPS) cell model and their differentiation into mature cells. Using this cutting-edge technique, she generated PD and HD patient iPS cell differentiated neurons to determine whether mitochondrial impairment contributes to the pathology of these diseases in the context of patients' genotypes.

## B. POSITIONS, HONORS, SOCIETY MEMBERSHIPS

**Positions and Employment**

March 2011 – present Tenure-Track Assistant Professor
Department of Physiology and Biophysics; Center for Mitochondrial Diseases,
Case Western Reserve University School of Medical Science

Sep 2010-Feb 2011 Research Associate
Department of Chemical and Systems Biology, Stanford University School of Medicine

**Honors**

2012 Spitz Scholar—The Spitz Brain Health Innovation Foundation
2009 Young Investigator Award of The Cardiovascular Institute, Stanford University
2003-2005 Uehara Memorial Research Foundation Fellowship

2002-2004 Sapporo Zonda Women Fellowship of Japan

**Professional Membership**

2006-present: Member of American Heart Association
2007-present: Nominated Member of Sigma Xi
2012-present: Member of Neuroscience Society

**C: PUBLICATTIONS AND MANUSCRIPTS**

1. **Qi X**, Qvit N, Su YC and Mochly-Rosen D, Novel Drp1 inhibitor diminishes aberrant mitochondrial fission and neurotoxicity. ***J Cell Sci., 2012, in press***. *(QX: first and corresponding author)*
2. Su YC and **Qi X,** Impairment of Mitochondrial Dynamics: a target for treatment of neurological disorders? ***Future Neurology, invited review, 2012***
3. Su YC and **Qi X**, LRRK2 G2019S mediates mitofusin 2 degradation and excessive mitophagy via phosphorylation of Bcl-2. (*Submitted*)
4. **Qi X,** Disatnik MH, Shen N, Sobel RA and Mochly-Rosen D, Aberrant mitochondrial fission in neurons induced by delta protein kinase C under oxidative stress conditions, *in vivo*. ***Mol Biol Cell***. 2011 Jan; 22(2):256-65
5. Shi X, Lu XG, Zhan LB, **Qi X**, Liang LN, Hu SY, Yun Y, Zhao SY, Sui H, Zhang FL. The effects of the Chinese medicine ZiBU PiYin recipe on the hippocampus in a rat model of diabetes-associated cognitive decline: a proteomic analysis. ***Diabetologia, 2011;*** 54:1888–1899.
6. Palaniyandi SS, **Qi X**, Ferreira JC, Yogalingam G and Mochly-Rosen D, Regulation of mitochondrial processes: a target for heart failure. ***Drug Discovery Today: Disease Mechanisms***, 2010; 7:95-102
7. **Qi X**, Inagaki K, Sobel RA and Mochly-Rosen D. Sustained pharmacological inhibition of deltaPKC protects against hypertensive encephalopathy through prevention of blood-brain-barrier breakdown. ***J Clin Invest***. 2008 Jan; 118(1):173-82.
   --- Commentary: Hypertensive encephalopathy and blood-brain-barrier: is deltaPKC a gatekeeper? *J. Clin. Invest*. 2008 118: 17-20
   --- Media Report: New Potential Target In The Treatment Of Fatal Brain Disease Science Daily; Medical News Today
8. **Qi X** and Mochly-Rosen D. Complex of deltaPKC and c-Abl communicates endoplasmic reticulum stress to mitochondria: an essential step for subsequent apoptosis***. J Cell Sci.*** 2008 Mar 15; 121(Pt 6):804-13
   --- ***Highlight****: deltaPKC/Abl: stressed to death, J Cell Sci 2008 121: e603*
9. **Qi X**, Vallentin A, Churchill E and Mochly-Rosen D. DeltaPKC participates in endoplasmic reticulum stress-induced response in cultured cardiac myocytes and ischemic heart. ***J Mol Cell Cardiol***. 2007 Oct; 43(4):420-8.
10. **Qi X**, Hosoi T, Okuma Y, Kaneko M and Nomura Y. Sodium 4-phenylbutyrate protects against cerebral ischemic injury. ***Mol Pharmacol***. 2004 Oct; 66(4):899-908.
11. **Qi X**, Okuma Y, Hosoi T and Nomura Y. Edaravone protects against hypoxia/ischemia-induced endoplasmic reticulum dysfunction. ***J Pharmacol Exp Ther.*** 2004 Oct; 311(1):388-93.
12. **Qi X**, Okuma Y, Kaneko M, Hosoi T and Nomura Y. Induction of murine HRD1 in experimental cerebral ischemia. ***Brain Res Mol Brain Res.*** 2004 Nov 4; 130(1-2):30-8.

13. Hosoi T, Okuma Y, Kawagishi T, **Qi X** and Nomura Y. Bacterial endotoxin induces STAT3 activation in mouse brain. ***Brain Res.*** 2004 Oct 8; 1023(1):48-53.
14. **Qi X**, Wang MW, Liu XJ, Song ZH and Bi KS. Effects of Lingguizhugan Decoction on acute myocardial ischemia in dogs. ***Journal of Shenyang Pharmaceutical University,*** 19: 208-213, 2002
15. Gong X, Lu X, Zhan L, Sui H, **Qi X**, Ji Z, Niu X, Liu L. Role of the SNK-SPAR Pathway in the Development of Alzheimer's Disease. ***IUBMB Life***. 2010 Mar; 62(3):214-21.
16. Sui H, Lu XG, Zhan LB, Jiang WZ, **Qi X**, Gong XY, and Niu XP. Decreased expression of spine-associated RapGAP (SPAR) in glutamate treated primary hippocampal neurons. ***J Clin Neurosci,*** 2010; 17: 1042–1046.

**D: PATENTS**

US 13/471,221 Daria Mochly-Rosen and **Xin Qi**
"Inhibitors of Mitochondrial Fission and Methods of Use Thereof"

US 60/899,917 Daria Mochly-Rosen and **Xin Qi**
"Methods for Maintaining Blood-Brain-Barrier Integrity in Hypertensive Subjects using a Delta-PKC Inhibitor"

**E: INVITED TALKS**

Invited speaker, "Protection of mitochondrial functions in patient neurons in Huntington's disease"
***Stanford University Bio-X IIP symposium, Aug, 2012***

Invited speaker, "Regulation of mitochondrial dynamics in neurological injury: An implication for stroke therapeutics"
***Gordon Research Conference, Brain Energy Metabolism & Blood Flow, July, 2012***

Invited speaker, "Regulation of mitochondrial fission and mitochondrial function"
***Mitochondria & Metabolism Symposium, Philadelphia, PA June, 2012***

Invited speaker, "Aberrant mitochondrial dynamics: a target of neurodegenerative diseases"
***Case Western Reserve University, Department of Neuroscience, Feb, 2012***

Invited speaker, "DeltaPKC regulation of mitochondrial function"
***America Heart Association Scientific Sessions, Orlando, FL, USA (Sep, 2009)***

Invited speaker, "DeltaPKC Mediates Mitochondrial Fission in Hypertension-Induced Brain Injury"
***The 14$^{th}$ Meeting on Protein Phosphorylation and Cell Signaling, Salk Institute, La Jolla, USA (Aug, 2008)***

Invited speaker, "The Complex of Protein Kinase C delta and c-Abl Communicates Endoplasmic Reticulum Stress to the Mitochondria; an Essential Step in the Subsequent Apoptosis"
***2008 Keystone Symposia on Hypoxia, Vancouver, Canada (January, 2008)***

Invited speaker, "Resistance Against Endoplasmic Reticulum Dysfunction is Involved in Protective Effects of Edaravone on Cerebral Ischemia"
***10th Free Radical Conference in Hokkaido, Sapporo, Japan (July 2004)***

Invited speaker, "Induction of Murine HRD1 in Experimental Cerebral Ischemia"
***124$^{th}$ Japanese Pharmaceutical Congress, Sendai, Japan (March 2004)***

**F: OTHER SUPPORTS**

**1. American Heart Association Beginning Grant-in-aid** 1/1/2012 to 12/31/2013
Title: Regulation of mitochondrial dynamics in ischemic stroke
Role: Principal Investigator (30% effort)

Total funding amount: $132,000 for two years

**2. Spitz Pilot Funds from Spitz foundation** 1/1/2012 to 12/30/2012

Title: Enhancing neuronal survival in Parkinson's Disease by inhibition of excessive mitochondrial fission
Role: Principal Investigator
Direct Cost: $ 50,000/year

**3. CTSC core facility pilot grant** 7/1/2011 to 12/30/2011 (completed)

Title: Study of mitochondrial dynamics in neurons from patients with Huntington's diseases
Role: Principal Investigator