Xin Qi, PhD

Department of Physiology and Biophysics
Case Western Reserve University School of Medicine
2109 Adelbert Road, Robbins E516, Cleveland, OH 44106
Office phone: (216)-368-4459
Email: **xxq38@case.edu**

EDUCATION AND TRAINING:

2005-2010	Postdoc	Department of Chemical and Systems Biology, Stanford University School of Medicine (Mentor: Daria Mochly-Rosen Ph.D.)
2002-2005	Ph.D.	Department of Pharmacology, Graduate School of Pharmaceutical Sciences, Hokkaido University, Japan (Mentor: Yasuyuki Nomura PhD)
1999-2002	M.S.	Department of Pharmacology, Shenyang Pharmaceutical University, China
1995-1999	B.S.	Department of Pharmacy, Shenyang Pharmaceutical University, China

APPOINTMENT AND POSITIONS:

March 2011 to Present Tenure-Track Assistant Professor
Department of Physiology and Biophysics (primary appointment);
Center for Mitochondrial Diseases (secondary appointment),
Case Western Reserve University School of Medical Science

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

AWARDS:

2012, 2013	Spitz Scholar—The Spitz Brain Health Innovation Fund
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

OTHER ACADEMIC ACTIVIES

Patents filed-

US 13/471,221	"Inhibitors of Mitochondrial Fission and Methods of Use Thereof"
US 60/899,917	"Methods for Maintaining Blood-Brain-Barrier Integrity in Hypertensive Subjects using a Delta-PKC Inhibitor"

Patents pending-
"Inhibitors of Valosin-containing Protein and Methods of Use Thereof"

Journal reviewer
Journal of Neuroscience, Journal of Cerebral Blood Flow & Metabolism, Journal of Respiratory Physiology, Neurobiology, International Journal of Molecular Sciences, Brain

PUBLICATIONS:

From March 2011 to present

1. Guo X, Disatnik MH, Monbureau M, Shamloo M, Mochly-Rosen D and **Qi X**, Inhibition of mitochondrial fragmentation diminishes Huntington's disease-associated neurodegeneration. ***J Clin Invest***., 2013 Dec 2;123 (12):5371-88. PMID: 24231356

2. Su YC and **Qi X.** Inhibition of excessive mitochondrial fission reduced aberrant autophagy and neuronal damage caused by LRRK2 G2019S mutation*.* ***Hum Mol Genet***., 2013 Nov 15;22(22):4545-61*.* PMID:23813973
   Highlighted by Nature Review Neurology: 'Defective mitochondrial dynamics in the hot seat—a therapeutic target common to many neurological disorders?*'* 2013 Aug;9(8):417

3. Guo X, Sesaki H and **Qi X***,* Drp1 stabilizes p53 on the mitochondria to trigger necrosis under oxidative stress conditions, *in vitro* and *in vivo*. ***Biochem J.,*** *2014 Apr 23.* PMID: 24758576
   Highlighted by Biochem J via Podcast, June 2014

4. Macdonald PJ, Stepanyants N, Mehrotra N, Mears JA, **Qi X**, Sesaki H, Ramachandran R, A dimeric equilibrium intermediate nucleates Drp1 reassembly on mitochondrial membranes for fission. ***Mol Biol Cell****., 2014 Apr 30.*

5. Disatnik M, Ferreira J, Campos JC, Gomes KS, Dourado P, **Qi X**, and Mochly-Rosen D, Acute inhibition of excessive mitochondrial fission after myocardial infarction prevents long-term cardiac dysfunction. ***J Am Heart Assoc***., 2013 Oct 8;2(5):e000461. PMID: 24103571*.*

6. Su YC and **Qi X.** Impairment of Mitochondrial Dynamics: a target for treatment of neurological disorders? ***Future Neurology,*** 2013, May 8; 3: Pages 333-346.

7. **Qi X**, Qvit N, Su YC and Mochly-Rosen D. Novel Drp1 inhibitor diminishes aberrant mitochondrial fission and neurotoxicity*.* ***J Cell Sci***. 2013 Feb 1;126(Pt 3):789-802. PMID: 23239023*.* ***(Qi, corresponding author)***

Before 2011

8. 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. PMID: 21509442.

9. **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. PMID: 21119009.

10. 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. PMID: 21278905.

11. **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. PMID: 18097471.
    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

12. **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. PMID: 18285444.
    Highlight*:* deltaPKC/Abl: stressed to death*,* ***J Cell Sci*** *2008 121: e603;* ***Sci Signal****, 2008*

13. **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. PMID: 17825316.

14. 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. PMID: 20146300.

15. 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. PMID: 20547063.

16. **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. PMID: 15226415.
17. **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. PMID: 15178695.
18. **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. PMID: 15519674
19. 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. PMID: 15364018.

Invited Presentations

Invited speaker, "Protection of mitochondrial function in Huntington's disease"
Department of Genetics, University of Alabama School of Medicine*, *May, 2014
Invited speaker, "Regulation of mitochondrial function in Huntington's disease"
Department of Pathology, Case Western Reserve University, March, 2014
Invited speaker, "Regulation of mitochondrial function in Parkinson's disease"
Neurology grand rounds, Neurological institute of University Hospital, Oct, 2013
Invited speaker, "Protection of mitochondrial function in neurodegenerative disease"
24hrs of HD, Cleveland, Oct, 2012,
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 function in Parkinson's disease"
The MetroHealth Seminar, Cleveland, OH, Oct 2012
Invited speaker, "Regulation of mitochondrial dynamics in neurological injury: An implication for stroke therapeutics"
Gordon Research Conference, Brain Energy Metabolism & Blood Flow, 2012
Invited speaker, "Regulation of mitochondrial fission and mitochondrial function"
Mitochondria & Metabolism Symposium, Philadelphia, PA 2012
Invited speaker, "Aberrant mitochondrial dynamics: a target of neurodegenerative diseases"
Case Western Reserve University, Department of Neuroscience
Invited speaker, "DeltaPKC regulation of mitochondrial function"
America Heart Association Scientific Sessions, Orlando, FL, USA (2009)
Invited speaker, "DeltaPKC Mediates Mitochondrial Fission in Hypertension-Induced Brain Injury"
The 14th 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"
124th Japanese Pharmaceutical Congress, Sendai, Japan (March 2004)

RESEARCH SUPPORT

Current support:

NIH R01 NS088192-01 6/1/2014-5/31/2019
Dynamin-related protein 1, neurodegeneration and Huntington's disease
The goal of this project is to determine the molecular basis of Drp1-induced neuronal injury in the pathogenesis of Huntington's disease and to develop potential therapeutics.
Role: Principal Investigator

American Parkinson's Disease Association
Protection of mitochondrial function in patient neurons of Parkinson's disease
The purpose of this study is to determine mitochondrial and neuronal functions in dopaminergic neurons derived from induced pluripotent stem cells of Parkinson's disease patients carrying LRRK2 G2019S mutation.
Role: Principal Investigator

Spitz Pilot Funds from Spitz foundation
Enhancing neuronal survival in Parkinson's Disease by inhibition of excessive mitochondrial fission
The purpose of this study is to determine whether inhibition of excessive mitochondrial fission is neuroprotective in an animal model of Parkinson's disease.
Role: Principal Investigator

American Heart Association Beginning Grant-in-aid (12BGIA8800014)
Regulation of mitochondrial dynamics in ischemic stroke
The purpose of this study was to determine the role of mitochondrial fission in ischemic stroke in vitro and in vivo.
Role: Principal Investigator

CTSC core facility pilot grant
Study of mitochondrial dynamics in neurons from patients with Huntington's diseases
The purpose of this study was to generate iPS cells using Huntington's disease patient fibroblasts
Role: Principal Investigator