# EMORY UNIVERSITY SCHOOL OF MEDICINE STANDARD CURRICULUM VITAE FORMAT

[The following order is required; may omit non-applicable sections]

Name: Ling Wei Office Address:

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E-mail Address

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Citizenship: USA

Current Titles and Affiliations:

#### Academic appointments:

I. Primary appointments:

Professor with Tenure

The John E. Steinhaus Professor of Stem Cell Research

Department of Anesthesiology Emory University School of Medicine

II. Joint and secondary appointments:

Full Professor

Department of Neurology

Emory University School of Medicine

III. Director

Human Stem Cell Research Center

Department of Anesthesiology

**Emory University** 

## Previous Academic and Professional Appointments:

Rank	Institution	Department	Years
Instructor	Washington University	Cell Biology and	1995-1996
		Physiology	
Assistant Professor	Washington University	Cell Biology and	1996-1998
		Physiology	
Assistant Professor	Washington University	Neurology	1999-2002
Assistant Professor	Medical University of	Pathology/Neurology	2003-2004
	South Carolina		
Associate Professor	Medical University of	Pathology/Neurology	2004-2008
(with tenure)	South Carolina		
Professor	Medical University of	Pathology/Neurology	2008
(with tenure)	South Carolina		
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Previous Administrative and/or Clinical Appointments:

Resident Surgeon, Department of Surgery and Neurosurgery Beijing Friendship Hospital, Beijing, China (1982-1985) Senior Surgeon (Attending Physician), Department of Surgery Beijing Friendship Hospital, Beijing, China (1986)

Supervisor and Director: Animal Research Section, Center for the Study of Nervous System Injury, Department of Neurology, Washington University in St. Louis, MO (1999 – 2002)

#### Education:

Institution	Degree/Date	Supervisor	Years attended
Capital Institute of Medicine	M.D. equivalent /1982	Dr. Yan-Qin Sun	1973-1982
SUNY at Stony Brook, Stony Brook, NY, USA	1986-1993	Postdoctoral Fellow	Dr. Joseph D. Fenstermacher
Washington University School of Medicine St. Louis, MO	1993-1995	NIH MD/Postdoctoral Fellowship	Dr. Thomas Woolsey

## Internship and residency:

1977-82 Beijing Friendship Hospital, Beijing China

1982-85 Residency - Beijing Friendship Hospital, Beijing China

#### Committee Memberships:

## a. National and International:

- 1998 Ad Hoc reviewer American Heart Association
- 1998 Ad Hoc reviewer National Institute of Health
- 2000 Ad Hoc reviewer Department of Veterans Affairs
- 2004 Ad Hoc reviewer CRDF's Cooperative Grants Program, US Civilian Research and Development Foundation
- 2005 Ad Hoc NIH Study Section NINDS/DBD
- 2006 Ad Hoc NIH Study Section NINDS/DBD
- 2007 NIH Study Section NINDS/NCF
- 2008 Organizing Committee, Annual Meeting of Southeastern Society of Pharmacology, USA
- 2009 Organizing Committee, Annual Meeting of Society for Neurochemistry, USA
- 2009, 2010 American Association for the Advancement of Science (AAAS) Research Competitiveness Program
- 2010 Kansas Medical Center Research Institute Basic Research Program
- 2009-2014 VA national grant review: RRDO Regenerative Medicine Study Section
- 2009-2011 Spinal cord injury Study Section. South Carolina
- 2009-2013 Brain 1 Study Section, American Heart Association
- 2014 NIH ZRG1 MDCN-B(05) Special Emphasis Panel
- 2014 VA national grant review: RRDO Regenerative Medicine Study Section

## b. Regional and State:

Member of Organizing Committee: The 29<sup>th</sup> Annual Meeting of Southeastern Society for Pharmacology (2008)

#### c. Institutional

- 2005 Ad Hoc reviewer MUSC URC grant
- 2009-2012 Neuroscience graduate program committee, Emory University School of Medicine
- 2009-2012 Cell Biology graduate program committee, Emory University School of Medicine
- 2009-2011 Georgia Tech/Emory Research Development Committee member

2011-2012 School of Medicine SOM Research Activity Council (RAC) member, Emory University

## Consultantships:

Consultant and Senior Scientist: Department of Anesthesiology, Henry Ford Hospital (1996-2000)

Department of Neurology, Washington University in St. Louis, MO (1999 – 2002)

Science Consultant: Merck Co. (2004-2007)

#### Editorships and Editorial Boards:

Member of the Editorial Board: The Journal of Chinese Applied Medical Sciences (2004 - present)

Member of the Editorial Board: The Journal of Neuroscience Research (2007 - present)

Translational Stroke Research (2008 – present)

#### Manuscript reviewer:

Invited reviewer - 2000 to present

- Neuroscience
- Journal of Neurochemistry
- Brain Research
- Neurobiology of Disease
- Stroke
- Journal of Cellular Physiology
- Neuroscience Research
- Journal of Cerebral Blood Flow & Metabolism
- Stem cells
- Journal of Neuroscience
- Journal of Neuroscience Research
- Brain
- PLoS ONE
- Journal of Anesthesia and Perioperative Medicine (JAPM) Editorial Board member

#### Honors and Awards:

American Heart Association and Bugher Award (2000)

American Heart Association Established Investigator Award (EIA)

Dean's award for outstanding research (2006, 2008)

Honorary Professor, ZheJiang University School of Medicine, Hong Zhou, China (2005)

Honorary and Lecture Professor, Capital University of Medical Sciences, Beijing, China (2006)

## Society Memberships:

Member of Society for Neuroscience, USA (1998 to present)

Member of American Association for Neurochemistry, USA (2005 to present)

Member of American Association for the Advancement of Science (2005 to present)

Member of American Heart Association (1995 to present)

#### Organization of National or International Conferences:

a. Administrative positions:

Organizing Committee member: The 29<sup>th</sup> Annual Meeting of Southeastern Society for Pharmacology (2008)

Committee Member; 40th Annual meeting of Society for Neurochemistry, USA, 2009

b. Sessions as chair:

Symposium for Neuroscientists Worldwide Hong Kong/Guanzhou, China (2004) Annual meeting of Society for Neuroscience, San Diego, CA (2007)

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The 29th Annual Meeting of Southeastern Society for Pharmacology (2008)

The 46th Annual Meeting for Neurochemistry (2015)

The 23th Annual Meeting of Chinese Society of Anesthesiology (2015)

The 4th Pangu Stroke Summit Meeting (2015)

#### Research focus:

Research in my group is related to cell death mechanism in ischemic stroke and treatment of stroke using adult and neonatal animal models. We have investigated the stem cell transplantation therapy and novel molecular mechanism of angiogenesis, neurogenesis, and functional recovery after brain and heart ischemia. I independently developed a new whisker-barrel cortex stroke model that has been recognized as a unique small stroke model representing many clinical cases. I have recently developed the neonatal stroke model that will facilitate the investigation on brain damage in prenatal and new born babies. My research have identified a new formal of cell death after ischemic stroke, the hybrid cell death of simultaneous apoptosis and necrosis, which will have important clinical applications for the treatment of stroke patients.

We have developed a novel strategy to use hypoxic preconditioning to enhance the cell survival for stem cell, human/mouse IPS cell transplantation therapy. Further research on this approach may increase the clinical potential of the cell based therapy not only for stem cells but for several other cell types.

## **Grant Support:**

[Investigator status (P.I., Co-P.I.), source, title, award type, amount, year(s)]

#### a. Active support:

I. Federally funded:

i. i ederally fullded.

R01 NS085568

\$341.250/year

09/30/2014 to 08/31/2019

NIH/NINDS

Application of optogenetics in iPS cell transplantation therapy for ischemic stroke

The overall goal of this investigation is to test the hypothesis that cell and time specific optogenetic stimulation can promote cell survival, neuronal differentiation and therapeutic benefits of iPS cell transplantation after ischemic stroke.

Role: Contact PI (Multiple PIs: Shan Ping Yu and Robert Gross)

R01 NS091585

\$250,000/year

03/01/2016 to 02/28/2020

Stem cell transplantation therapy via intranasal delivery after stroke

The overall of this investigation is to investigate the novel intranasal delivery of stem cells and neural progenitors into the brain bypassing the blood brain barrier for enhanced therapeutic benefits and clinical translation.

Role: PI

R01 NS062097-01

\$225,000/year

02/01/2010 to 01/31/2015 (one year extension)

NIH/NINDS

Transplantation of Pre-conditioned Bone Marrow Mesenchymal Stem Cells after Ischemia.

The overall goal of this study is to explore the feasibility and functional benefits of transplanting mouse ES cells into the ischemic brain combined with gene-modification of transplanted ES cells. No overlap with submitted grant.

Role: PI

R42 NS073378-03A1

\$348,000/year

05/01/2015 to 04/30/2017

NIH/NINDS

Stroke Treatment by Chemically-induced Hypothermia Role: Co-investigator (PI: Shan Ping Yu, Tom Dix)

VA Merit Grant RX000666 \$275,000

04/01/2014 to 3/31/2017

VA National Center

Protect the Brain by Chemical Hypothermia

The overall goal of this investigation is to examine chemical induced hypothermia in CNS injury models of rats. No overlap with submitted grant.

Role: Co-Investigator (PI: Shan Ping Yu)

II. Private foundation funded:

III. Contracts:

IV. Other: Other Award for the LAB

#### Current:

AHA Predoctoral Fellowship award: Michael Jian PH D Student 2015-2017

AHA Postdoctoral Fellowship award: Jinhwan Lee, PHD 2015-2017 AHA Postdoctoral Fellowship award: Soonmi Won, PHD 2015-2017 NIH Predoctoral Fellowship award: James Zhang, MD/PhD, 2015-2017

#### Past:

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AHA Predoctoral Fellowship award: Osama Mohamad MD/PH D Student 2010-2	2012
*AHA Predoctoral Fellowship award: Monica Chao PH D Student 2012-2	014
*FAER Research Fellowship Grant : Anna Woodbury Resident 2012-2	013
* Crawford W. Long Excellence in Research Award: Osama Mohamad / Ling Wei	2009
* Crawford W. Long Excellence in Research Award: Molly Ogle /Ling Wei	2010
* Crawford W. Long Excellence in Research Award: Molly Ogle /Ling Wei	2011
* Crawford W. Long Excellence in Research Award: Anna Woodbury /Ling Wei	2013
*Travel Award: 8th Asia Pacific Symposium on Neural Regeneration. Taiwan (Osam	na). 2012
*Travel Award: 8th Asia Pacific Symposium on Neural Regeneration. Taiwan (Monic	ca). 2012
* Society for Neuroscience Prepostdoctoral Fellow Travel Award (Monica) 2013	
* Society for Neuroscience Under Student Travel Award (Kim YS, 2013)	
*International r Symposium Cerebral Blood Flow and Metabolism (ISCREM) Shand	nai Brain 2013

\*International r Symposium Cerebral Blood Flow and Metabolism (ISCBFM) Shanghai *Brain 2013* & BrainPET 2013 Prepostdoctoral Fellow Travel Award (Monica) 2013

\*International r Symposium Cerebral Blood Flow and Metabolism (ISCBFM) Shanghai *Brain 2013* & BrainPET 2013 Postdoctoral Fellow Travel Award (Zach Wei) 2013

# b. Previous Support

R01 NS 058710 NIH/NINDS 10/01/2008 – 04/30/2015 NIH/NINDS (non-cost extension)

Combination therapy in human ES cell transplantation after neonatal stroke

Role: PI

#### **R01 NS 058710 NIH/NINDS**

10/01/2008 - 09/30/2015

Combination therapy in human ES cell transplantation after neonatal stroke

The overall goal of this investigation is to study transplantation strategies for human ES cell transplantation to delineate optimal protocols for neuronal differentiation in vitro and after transplantation into the ischemic brain. This is no overlap with the proposed grant.

Role: PI

R01 NS062097-01

02/01/2010 to 01/31/2015

NIH/NINDS

Transplantation of Pre-conditioned Bone Marrow Mesenchymal Stem Cells after Ischemia.

The overall goal of this study is to explore the feasibility and functional benefits of transplanting mouse ES cells into the ischemic brain combined with gene-modification of transplanted ES cells. No overlap with submitted grant.

Role: PI

R01 NS058710-01A1S1

10/01/2009 to 09/30/2012

NIH/NINDS

Combination therapy in human ES cell transplantation after neonatal stroke.

The overall goal of this supplemental study is to study signal transduction systems in neuronal differentiation of ES cells. There is no overlap with the submitted grant.

Role: PI

R21 NS75338 08/01/2011 to 07/30/2014

NIH/NINDS

Axonal Growth after Stem Cell Transplantation into the Ischemic Brain

The overall goal of this grant is to explore the novel approach of enhancing axonal growth of stem cell-derived neurons in stem transplantation after ischemic stroke.

Role: PI

R01 NS 045810 07/01/2004 - 6/30/2009

NIH/NINDS

Angiogenesis, functional recovery and TNF- $\alpha$  after stroke.

Role: Principal investigator

R01 NS 045155 07/01/03 to 06/30/09

NIH/NINDS

Function restoration by stem cell implant after focal ischemia.

Role: Principal investigator

NIH/NINDS, R01; 2001-2006

Title: Neural and vascular functional recovery after mini-stroke in barrel cortex

Role: Principal Investigator

American Heart Association and Bugher Award; 2000-2005

Title: Effects of bFGF and VEGF on angiogenesis and long-term functional recovery after ministroke in the mouse

Role: Principal Investigator

Merck Company, Research contracts; 2002 - 2005

Title: Neuroprotection after ischemic stroke (study I-III)

Role: Principal Investigator

Agency: American Heart Association (AHA-Bugher Award); (co pl) 2001 - 2005Title: K+ channel modulation in apoptosis and effects of K+ channel blockers on ischemic cell death

The McDonnell Center for Higher Brain Function 1996-1999

Title: Neural and vascular plasticity after strokes in barrel cortex

Formal Teaching:

[Activity, year(s)]

#### b. Graduate Program

Lecture: Ischemic stroke and cell death

Graduate course "Environmental Stress Signaling and Cellular Consequences" PHMSC715, spring semesters,

2004, 2005, 2006, 2007, 2008; MUSC

Lecture: Apoptosis (

Graduate course "Foundation of Biomedical Sciences: Mechanisms of Disease" Pathology Unit CGS70GU17;

2004, 2005; MUSC

Lecture: Apoptosis Mechanisms of Disease

Pathology Unit PATH 606; 2004, 2005; MUSC

Course coordinator

Graduate Course "Seminar Series in Pathology Research" (weekly during semesters)

PATH 700-04; 2004, 2005, 2006, 2007; MUSC

Dean's special lecture to new graduate students

"Stem cell transplantation therapy for CNS disorders" (2-hr seminar and discussion followed by an essay exam; 2008)

Training programs

Supervisory Teaching:

a. Ph.D. students directly supervised:

Christine Keogh, PhD student (graduated in 2008; currently position: science editor in New York)

Kevin Francis, PhD student (graduated in 2009; currently a postdoctoral fellow at NIH)

Molly Ogle, PhD student (Emory University program)

Gerry Wallace, Master student (graduated in 2008; currently work at MUSC)

Jamie L. Fraser, MD PhD student (graduated in 2008; currently a MD fellow at NIH)

Osama Mohamad, MD/PhD (Emory University MD/PhD program)

Michelle Hedrick, PhD (graduated in 2006; currently Assistant Professor/ Faculty at University of Miami)

Riley Whitaker, MS (graduated in 2006; currently a research associate in Research Triangle, NC)

b. Post-doctoral fellows directly supervised:

Zhongyang Lu, MD, PhD (2004-2008); currently a postdoctoral fellow at MUSC.

Lin Cui, MD (2002 – 2007); currently a postdoctoral fellow at MUSC.

Visiting scientists and trainees:

Xianbao Liu, MD, PhD (2007-2008); currently a neurologist in Zhejiang University Hospital, Hongzhou, China Wenlei Li, MD, PhD (2007-2008), currently an Assistant Professor at Nianjing University, Nianjing, China Megan Zhen, MD, PhD (2007 – 2008); currently an Assistant Professor at Beijing University, Beijing, China Jimei Li, MD (2004-2005); currently Professor and Chair of Department of Neurology, Beijing Friendship Hospital, Beijing, China

Ying Li, MD (2004-2008); currently a Postdoctoral Fellow at MUSC

Summer research program:

Yaenette Dixon-Mah (Minority undergraduate research program; 2005 and 2006)

Joylaina Speaks (Minority undergraduate research program; 2005)

Kaja Richard (Minority undergraduate research program; 2006)

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# Eric Wang (MUSC summer research program; 2007)

# Participation in thesis committees:.

Michelle H Theus, BS. PhD Vivian R Whitaker, MS. MS Christine L. Keogh, BS. PhD Kevin R Francis, PhD Jamie L. Fraser, MD/PhD Molley E. Ogle, PhD Gerald Wallace, MS Xin Zhou, PhD Tadd Deveau, PhD Ning Wei, MD/Ph D Monica Chau, PhD

Osama Mohamad, MD/PhD Jame Zhang, MD/PhD

Megan Winter, PhD

Michael Jiang, PhD

# Lectureships, Seminar Invitations, and Visiting Professorships:

2000	New mechanism of cell death after ischemic stroke International Symposium on Cerebral Blood Flow and Metabolism, Copenhagen
2002	Angiogenesis after ischemic stroke
	International Symposium on Cerebral Blood Flow and Metabolism, Taipei
2003	Hybrid cell death in the ischemic brain
	International Conference of Apoptosis, Luxembourg
2004	Mechanism and novel approach for ischemic stroke
	Neuroscience Division (San Diego, CA) Merck Research Labs
2004	Stem cell transplantation therapy for ischemic stroke
	Department of Biochemistry Science and Technology University, Hong Kong
2004	Stem cell transplantation therapy for ischemic stroke
	Symposium for Neuroscientists Worldwide Hong Kong/Guanzhou, China
2004	Novel approach for the treatment of ischemic stroke
	Zhe-Jiang University Hang Zhou, China
2004	Novel approach for the treatment of ischemic stroke
	Capital University of Medical Sciences Beijing, China
2005	Endogenous neurogenesis
	Symposium for Neuroscientists Worldwide
0005	Hong Kong/Guanzhou, China
2005	Neurogenesis and angiogenesis after ischemic stroke
	Department of Cardiovascular Surgery, Sir Run Run Shaw Hospital and School of Medicine, Hang Zhou,
0000	China
2006	Stem cell transplantation stimulate endogenous neurogenesis
2006	Symposium for Stem Cell Transplantation, San Francisco, CA
2006	Stem cell therapy and neurodegenerative diseases Department of Neurology, University of Louisville, KA
2007	Stem cell therapy, angiogenesis and stroke
2007	Annual meeting of Southeast Society for Pharmacology, Augusta, GA
2007	Stem cell therapy, angiogenesis and neurovascular unit
2007	Annual meeting of Society for Neuroscience, San Diego, CA (symposium speaker)
2007	Stem cell and stem cell therapy
2007	Department of Pediatrics, Medical University of South Carolina
2007	Hypoxic preconditioning and stem cell therapy
2007	International Symposium of Cerebral Blood Flow and Metabolism, Osaka, Japan (symposium speaker)
2008	Novel treatment for stroke
2000	110 YOL GOUGHOTH TO GUONO

	Department of Medicine, Division of Nephrology, University of Virginia.
2009	Combination therapy of stem cell transplantation for stroke
	Shanghai International Neurodegenerative Diseases Symposium, Shanghai, China

- 2010 Human Stem cell therapy after stroke
   World Forum on Cerebral Blood Flow & Metabolism (CBFM), Kyoto, Japan (2010)
- 2011 Novel strategy for stem cell therapy 7<sup>th</sup> International summit of stroke, Nanjing, China
- 2011 Stroke and stroke treatment Emory University Graduate Program
- 2011 Drug discovery in stroke treatment Beijing University, Beijing, China
- 2012 Combination stem cell therapy for ischemic stroke.8th Asia Pacific Symposium on Neural Regeneration (Taiwan)
- 2013 Combination stem cell therapy for ischemic stroke.
- 2013 8th Asia Pacific Symposium on Neural Regeneration (Taiwan)
- 2014 Brain Edema Conference, Long Beach, CA. (Section Chair)
- 2014 Combination therapy in Human iPS cell transplantation after Ischmia stroke( China)
- 2014 Annual Meeting of Chinese Society Of Anesthesiology Chengdu China
- 2015 46th Annual Meeting for Neurochemistry
- 2015 23th Annual Meeting of Chinese Society of Anesthesiology, Xia'an, China
- 2015 4th Pangu Stroke Summit Meeting, Chengdu, China
- 2015 Tiantan Stroke Conference, Beijing, China

#### Bibliography:

## a. Published and accepted research articles (clinical, basic science, other) in refereed journals:

- Fenstermacher J, Nakata H, Tajima A, Lin S-Z, Otsuku T, Acuff V, Wei L and Bereczki D. Functional variations in parenchymal microvascular systems within the brain. Magnetic Resonance in Medicine 19(2):217-220, 1991.
- 2. Otsuku T, **Wei L**, Bereczki D, Acuff V, Patlak C, Fenstermacher J. Pentobarbital produces dissimilar changes in glucose influx and utilization in brain. American Journal of Physiology 261(2 Pt 2):R265-75, 1991.
- Otsuku T, Wei L, Acuff VR, Shimizu A, Pettigrew KD, Patlak CS, Fenstermacher JD. Variation in local cerebral blood flow response to high-dose pentobarbital sodium in the rat. American Journal of Physiology 261(1 Pt 2):H110-20, 1991.
- 4. Bereckzki D, **Wei L**, Acuff V, Gruber K, Tajima A, Patlak C, Fenstermacher J. Technique-dependent variations in cerebral microvessel blood volumes and hematocrits in the rat. Journal of Applied Physiology 73(3):918-24, 1992.
- 5. **Wei L**, Lin S-Z, Tajima A, Nakata H, Acuff V, Patlak C, Pettigrew K, Fenstermacher J. Cerebral glucose utilization and blood flow in adult SHR rats. Hypertension 20(4):501-10, 1992.
- 6. Bereczki D, **Wei L,** Otsuka T, Hans FJ, Acuff V, Patlak C, Fenstermacher J. Hypercapnia slightly raises blood volume and sizably elevates flow velocity in brain microvessels. American Journal of Physiology 264(5 Pt 2):H1360-9, 1993.
- 7. Bereczki D, Wei L, Otsuka T, Acuff V, Pettigrew K, Patlak C, Fenstermacher J. Hypoxia increases velocity of blood flow through parenchymal microvascular systems in rat brain. Journal of Cerebral Blood Flow and Metabolism 13(2):475-486, 1993.

8. **Wei L**, Otsuka T, Acuff V, Bereczki D, Pettigrew K, Patlak C, Fenstermacher J. The velocities of red cell and plasma flows through parenchymal microvessels of rat brain are decreased by pentrobarbitol. Journal of Cerebral Blood Flow and Metabolism 13(3):487-497, 1993.

- 9. Tajima A, Hans FJ, Livingstone D, **Wei L**, Finnegan W, DeMaro J, Fenstermacher J. Small local brain volumes and cerebral atrophy in SHR rats. Hypertension 21(1):105-111, 1993.
- Hans FJ, Wei L, Bereczki D, Acuff V, DeMaro J, Chen J-L, Otsuka T, Patlak C, Fenstermacher J. Nicotine increases microvascular blood flow and flow velocity in three groups of brain areas. American Journal of Physiology 265(6 Pt 2):H2142-H2150, 1993.
- Bereczki D, Wei L, Otsuka T, Acuff V, Gruber K, Patlak C, Fenstermacher J. Experimental and clinical methods for the measurement of cerebral blood volume. Clin Neurosci 46:259-266, 1993.
- 12. Chen J-L, **Wei L**, Bereczki D, Hans F-J, Otsuka T, Acuff V, Richardson G, Patlak C, Fenstermacher J. Virtually unaltered permeability-surface area products imply little capillary recruitment in brain with hypoxia. Microcirculation 1(1):35-47, 1994.
- Chen J-L, Wei L, Acuff V, Bereczki D, Hans F-J, Otsuka T, Finnegan W, Patlak C, Fenstermacher J. Slightly altered permeability-surface area products imply some cerebral capillary recruitment during hypercapnia. Microvascular Research 48:190-211, 1994.
- 14. Moskalenko YE, Rovainen C, Woolsey TA, Wei L, Liu d, Spenc ME, Eemernia VN, Weistein GB, Malisheva NG. Comparison of local measurements by H<sub>2</sub> inhalation and with transient electrochemical H<sub>2</sub> generation in brain tissue. Sechenov Physiological Journal 80(2):119-126, 1994.
- Chen J-L, Wei L, Bereczki D, Hans F-J, Otsuka T, Acuff V, Ghersiegea JF, Patlak C, Fenstermacher J. Nicotine raises the influx of permeable solutes across the rat blood-brain barrier with little or no recruitment. J Cereb Blood Flow Metab 15:687-698, 1995.
- 16. Wei L, Rovainen C, Woolsey TC. Ministrokes in rats barrel cortex. Stroke 26(8):1459-1462, 1995.
- Moskalenko YE, Rovainen C, Woolsey TA, Wei L, Lui D, Spence ME, Semernia VN, Weinstein GB, Malysheva NG. Comparison of measurements of local brain blood flow by hydrogen clearance with the inhalation of hydrogen and its electrochemical generation in brain tissue. Neurosci Behav Physiol 26:245-250, 1996.
- Woolsey TA, Rovainen CM, Cox SB, Martin H, Griffith H. Liang E, Liu D, Moskalenko YE, Sui J, Wei L. Neuronal units linked to microvascular modules in cerebral cortex: response element for imaging the brain. Cerebral Cortex Oct 647-660, 1996.
- Wei L, Craven K, Erinjeri J, Liang GE, Bereczki D, Rovainen CM, Woolsey TA, Fenstermacher JD. Local cerebral blood flow before and after acute ligation of multiple arteroles in rat whisker barrel cortex. Neurobiology of Disease 5:142-150, 1998.
- 20. Festermacher, J., Nagaraja, T.N., **Wei, L**. and Ghersi-Egea, J.-F. Surprises and peruliarities in the distribution of material from cerebrospinal fluid to brain tissues and blood. In: Brian Barrier Systems, Alfred Benzon Symposium 45:494-505, 1999.
- 21. Majid A, He YY, Gidday JM, Kaplan SS, Gonzales ER, Park TS, Fenstermacher JD, **Wei L**, Choi DW, Hsu CY. Differences in vulnerability to permanent focal cerebral ischemia among 3 common mouse strains. Stroke 31:2707-2714, 2000.
- 22. **Wei L**, Erinjeri JP, Rovainen CM, Woolsey TA. Collateral growth and angiogenesis around cortical stroke. Stroke 32:2179-2184, 2001.

23. Festermacher, J., **Wei, L**., Liu, K-F., and Nagaraja, T. Local blood brain barrier damage, cerebral edema, and cell injury during reperfusion after 2 hour of focal cerebral ischemia. Ischemic Blood Flow in the Brain Springer-Verlag Tokyo 6:70-75, 2001.

- 24. Snider BJ, Du C, **Wei L**, Choi DW. Cycloheximide reduces infarct volume when administered up to 6 h after mild focal ischemia in rats. Brain Res 917:147-157, 2001.
- 25. Carmichael ST, **Wei L**, Rovainen CM, Woolsey TA. New patterns of intracortical projections after focal cortical stroke. Neurobiol Dis 8:910-922, 2001.
- 26. Xiao AY, **Wei L**, Shuli Xia, Rothman S, Yu SP. Ionic mechanism of ouabain-induced concurrent apoptosis and necrosis in individual cortical neurons. J Neurosci 22:1350-1362, 2002.
- 27. **Wei L**, Yu SP, Gottron F, Choi DW. Potassium channel blockers attenuate hypoxia-and ischemia-induced neuronal death *in vitro* and *in vivo*. Stroke 34:1281-1286, 2003.
- 28. Wang XQ, Xiao AY, Yang A, LaRose L, **Wei L**, Yu SP. Block of Na<sup>+</sup>,K<sup>+</sup>-ATPase by 4-aminopyrdine and induction of hybrid death in cultured cortical neurons. J Pharmacol Exper Ther 305:502-506, 2003.
- 29. Adams LD, Choi L, Xian HQ, Yang A, Sauer B, **Wei L**, Gottlieb DI. Double lox targeting for neural cell transgenesis. Brain Res Mol Brain Res 110:220-233, 2003.
- 30. Ewing JR, Wei L, Knight RA, Pawa S, Nagaraja TN, Brusca T, Divine GW, Fenstermacher JD. Direct comparison of local cerebral blood flow rates measured by MRI arterial spin-tagging and quantitative autoradiography in a rat model of experimental cerebral ischemia. J Cereb Blood Flow Metab 23:198-209, 2003.
- 31. **Wei, L.**, Yin, D-J., Langsdorf, J. and Yu, S.P. Hybrid neuronal death of apoptosis and necrosis in the cortex and thalamus after cerebral barrel cortex ischemia in rats. Brain Res. 1022:54-61, 2004.
- 32. **Wei, L.**, Xiao, A.Y., Jin, C., Yang, A. Lu Z.Y. and Yu, S.P. Effects of chloride and potassium channel blockers on apoptotic cell shrinkage and apoptosis in cultured cortical neurons. Eur J Physiol. 448:325-334, 2004.
- 33. Yang, A., Wang, X.Q. **Wei, L.** and Yu, S.P. Inhibitory effects of clofilium on membrane currents associated with Ca<sup>2+</sup> channels, NMDA receptor channels and Na<sup>+</sup>, K<sup>+</sup>-ATPase in cultured cortical neurons. Pharmacol. 73:162-168, 2005.
- 34. **Wei, L.**, Cui, L., Snider, J., Yu, S.P., Rivkin, M., Gottlieb, D.I., Hsu, C.Y. and Choi, D.W. Transplantation of embryonic stem cells overexpressing bcl-2 repairs neural injury and promotes functional recovery after transient cerebral ischemia in rats. Neurobiol Dis. 19:183-93, 2005.
- 35. Lu ZY, Yu SP, Wei JF & **Wei L.** Age-related neural degeneration in NF-κB p50 knockout mice. Neurosci. 139:965-978, 2005.
- 36. **Wei L**, Keogh CL, Whitaker VR, Theus MH. & Yu SP. Angiogenesis and stem cell transplantation as potential treatments of cerebral ischemic stroke. Pathophysiol 12, 47-62, 2005.
- 37. Thues, M.H., **Wei, L.** and Yu, S.P. Critical roles of Src family tyrosine kinases in neuronal differentiation of embryonic stem cells, Exp Cell Res. 312:3096-3107, 2006.
- 38. **Wei, L,** Han, BH, Li Y, Keogh, CL, Holtzman, DM and Yu, SP. Cell death mechanism and protective effect of erythropoietin after focal ischemia in the whisker-barrel cortex of neonatal rats. J Pharmacol Exp Ther. 317:109-116. 2006.

39. Whitaker, V.R., Cui, L., Miller, S., Yu, S.P. and **Wei, L**. Whisker stimulation enhances angiogenesis in the barrel cortex following focal ischemia in mice. J Cereb Blood Flow & Met. 27:57-68, 2006.

- 40. Abdallah, R., **Wei, L**. and Yu, S.P. Valinomycin induced apoptosis in Chinese hamster ovary cells. Neurosci. Let., 405:68-73, 2006.
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