

CURRICULUM VITAE

Peng LEI, PhD

The Florey Institute of Neuroscience and Mental Health
The University of Melbourne, Parkville 3010, VIC, Australia
Tel: +61 3 9035 6686(work); +61 4 13178639(mobile)
E-mail: peng.lei@florey.edu.au
Citizenship: China P.R (Australian Permanent Resident)



EDUCATION

2003 - 2007, B.Sc. (Major in Chemistry and Biology), Department of Chemistry,
Tsinghua University, China. (Supervisor: Prof. Yan-mei Li)
2008 - 2012, Ph.D., Department of Pathology, **the University of Melbourne**,
Australia. (Supervisor: Prof. Ashley I. Bush)

POST-DOCTORAL TRAINING

2012 - Oxidation Biology Unit, the Florey Institute of Neuroscience and Mental
Health, Australia (mentored by Prof. Ashley I. Bush)

ACADEMIC APPOINTMENTS

2012 - 2014 Research Officer, the Florey Institute of Neuroscience and Mental
Health, Australia
2012 - Adjunct Professor, School of Biological Science, Xihua Normal University,
China
2013 - Honorary Research Fellow, the University of Melbourne, Australia
2015 - Senior Research Officer, the Florey Institute of Neuroscience and Mental
Health, Australia

RESEARCH ACTIVITIES

Publications

(22 publications, *H*-index=12, Citations=505, *Google Scholar*, updated Nov 2014)

2014 Ayton S*, Lei P*, Bush AI. Biometals and their therapeutic implications

- in Alzheimer's disease. *Neurotherapeutics*. Accepted (*Co-first author)
- 2014 Lei P, Ayton S, Moon S, Zhang Q, Volitakis I, Finkelstein DI, Bush AI. Motor and cognitive deficits in aged tau knockout mice in two background strains. *Mol. Neurodegener.* 9: 29.
- 2014 Ayton S, Lei P, Adlard PA, Volitakis I, Cherny RA, Bush AI, Finkelstein DI. Iron accumulation confers neurotoxicity to a vulnerable population of nigral neurons: implications for Parkinson's disease. *Mol. Neurodegener.* 9: 27
- 2014 Wong BXW, Ayton S, Lam LQ, Lei P, Adlard PA, Bush AI, Duce JA. A comparison of ceruloplasmin to biological polyanions in promoting the oxidation of Fe 2+ under physiologically relevant conditions. *BBA-General Subjects* DOI: 10.1016/j.bbagen.2014.08.006
- 2014 Hare DJ, Lei P, Ayton S, Roberts BR, Grimm R, George JL, Bishop DP, Beavis AD, Donovan SJ, McColl G, Volitakis I, Masters CL, Adlard PA, Cherny RA, Bush AI, Finkelstein DI, Doble PA. An iron-dopamine index predicts risk of parkinsonian neurodegeneration in the substantia nigra pars compacta. *Chem. Sci.* 5: 2160-9 (Cover Story)
- 2014 Ayton S, Lei P. Nigral iron elevation is an invariable feature of Parkinson's disease and is sufficient cause of neurodegeneration. *Biomed Res Int.* 2014: 581256. (Corresponding author)
- 2013 Hare DJ, Ayton S, Bush AI, Lei P. A delicate balance: Iron metabolism and diseases of the brain. *Front. Aging Neurosci.* 5:34. (Corresponding author)
- 2013 Ayton S, Lei P, Duce JA, Wong BXW, Sedjahtera A, Adlard PA, Bush AI, Finkelstein DI. Ceruloplasmin dysfunction and therapeutic potential for Parkinson's disease. *Ann. Neurol.*, 73(4):554-9
- 2012 Ayton S*, Lei P*, Bush AI. Metallostasis in Alzheimer's disease. *Free Radic. Biol. Med.*, 62:76-89 (*Co-first author)
- 2012 Ayton S*, Lei P*. The A β -induced NFAT apoptotic pathway is also activated by GSK-3 inhibition: implications for Alzheimer therapeutics. *J. Neurosci.*, 32(28):9454-6. (*Co-first author, Corresponding author)
- 2012 Lei P, Ayton S, Finkelstein DI, Spoerri L, Ciccotosto GD, Wright DK, Wong BXW, Adlard PA, Cherny RA, Lam LQ, Roberts BR, Volitakis I, Egan GF, McLean C, Cappai R, Duce JA, and Bush AI. Tau deficiency induces parkinsonism with dementia by impairing APP-mediated iron export. *Nature Medicine*, 18(2):291-5
- 2011 Lei P, Ayton S, Bush AI, Adlard PA. GSK-3 in neurodegenerative diseases. *Int. J. Alz. Dis.*, 2011:189246

- 2011 Liu Q, Wu WH, Fang CL, Li RW, Liu P, Lei P, Hu J, Sun X, Zheng YZ, Zhao YF, Li YM. Mapping ApoE/A β binding regions to guide inhibitor discovery. *Mol. Biosyst.*, 7(5):1693-700
- 2010 Lei P, Ayton S, Finkelstein DI, Adlard PA, Masters CL, Bush AI. Tau protein: Relevance to Parkinson's disease. *Int. J. Biochem. Cell Biol.*, 42:1775-8
- 2010** Yu YP*, Lei P*, Hu J, Wu WH, Zhao YF, Li YM. Copper-induced cytotoxicity: reactive oxygen species or islet amyloid polypeptide oligomer formation. *Chem. Comm.*, 46(37):6909-11 (*Co-first author)
- 2009 Cui W, Ma JW, Lei P, Wu WH, Yu YP, Xiang Y, Tong AJ, Zhao YF, Li YM. Insulin is a kinetic but not a thermodynamic inhibitor of amylin aggregation. *FEBS J.*, 276(12):3365-71
- 2008** Wu WH*, Lei P*, Liu Q, Hu J, Gunn AP, Chen MS, Rui YF, Su XY, Xie ZP, Zhao YF, Bush AI, and Li YM. Sequestration of copper from β -amyloid promotes selective lysis by cyclen-hybrid cleavage agents. *J. Biol. Chem.*, 283(46):31657-64 (*Co-first author)
- 2008 Lei P, Wu WH, Li RW, Ma JW, Yu YP, Cui W, Zhao YF, Li YM. Prevention and promotion effects of apolipoprotein E4 on amylin aggregation. *Biochem. Biophys. Res. Comm.*, 368(2): 414-8
- 2007 Su XY, Wu WH, Huang ZP, Hu J, Lei P, Yu CH, Zhao YF, Li YM. Hydrogen Peroxide can be generated by Tau in the presence of Cu(II). *Biochem. Biophys. Res. Comm.*, 358(2): 661-5
- 2007 Shi WQ, Cai H, Xu DD, Su XY, Lei P, Zhao YF, Li YM. Tyrosine Phosphorylation/dephosphorylation Regulates Peroxynitrite-mediated Peptide Nitration. *Regul Pept.*, 144(1-3): 1-5
- 2007 Du JT, Yu CH, Zhou LX, Wu WH, Lei P, Li Y, Zhao YF, Nakanishi H, Li YM. Phosphorylation modulates the local conformation and self-aggregation ability of a peptide from the fourth tau microtubule-binding repeat. *FEBS J.*, 274(19): 5012-20
- 2006 Ma QF, Hu J, Wu WH, Liu HD, Du JT, Fu Y, Wu YW, Lei P, Zhao YF, Li YM. Characterization of copper binding to the peptide amyloid- β (1-

16) associated with Alzheimer's disease. *Biopolymers*, 83: 20-31

Inventions and Patents

- Compound of styryl with axa-containing heterocyclic modified and use thereof. SIPO. ZL 2007 1 0062629.9
- Compound of polyphenols with aza-containing heterocyclic modified and use thereof. SIPO. ZL 2007 1 0062630.1

OTHER PROFESSIONAL ACCOMPLISHMENTS

Grants and Fellowships

2015-2015 "Tau protein and insulin secretion: implications for Alzheimer's disease and diabetes", Project grant, Alzheimer's Australia Dementia Research Foundation, AUD\$50,000 (1 year), **CIA**

2015-2017 "The Potential of FGF in the Therapy of Neurodegenerative Diseases", International Collaborative Project grant, the state government of Guangdong province China, CNY\$300,000 (3 years), CID

2014-2014 "Alzheimer's tau protein in blood: implications for neurodegeneration and anemia", Early Career Researcher Grants Scheme, The University of Melbourne, AUD\$36,927 (1 year), **CIA**

2014-2014 "Exploring the function of the Parkinson's protein, alpha synuclein, in the cardiovascular system", Interdisciplinary Seed Funding Scheme, Melbourne Neuroscience Institute, AUD\$40,000 (1 year), CIC

2013-2017 **Peter Doherty Early Career Fellowship**, Australia National Health and Medical Research Council, AUD\$299,564 (4 years), **CIA**

2013-2015 Epsilon Postdoctoral Fellowship, Alzheimer's Australia Dementia Research Foundation, AUD\$120,000 (2 years), **CIA**

Conferences

2014 e-Poster, the 5th A+PD symposium, Sydney, Australia, Sep 20th (5min)

2014 Young Investigator Colloquium, the 12th Meeting of the Asian-Pacific Society for Neurochemistry, Kaohsiung, Chinese Taipei, Aug 25th (20min)

2013 Keynote speech, East Lake International Forum for Outstanding

- Overseas Young Scholars 2013 (HUST), Wuhan, China, Dec 27th (25min)
- *Invited keynote speaker*
- 2013 Oral presentation, Alzheimer's Association International Conference 2013, Boston, USA, July 17th (15min)
- *Developing Topics*
- 2012 Oral presentation, Free Radical and Metal Biology 2012, Brisbane, Australia, Nov. 30th (10min)
- 2011 Oral presentation, 41st Annual Meeting of Neuroscience, Washington DC, USA, Nov. 12rd (15min)
- 2011 Oral presentation, 14th International Symposium on Trace Elements in Man and Animals, Enshi, China, Sep. 20th (30min)
- *Invited talk*
- 2011 Oral presentation, Alzheimer's Association International Conference 2011, Paris, France, July 20th (15min)
- *Developing Topics (formally 'Hot Topics')*
- 2010 Oral presentation, 40th Annual Meeting of Neuroscience, San Diego, USA, Nov. 16th (15min)
- *Available in 'Hot Topic' database to press*
- 2009 Oral presentation, 3rd Protein Misfolding & Neurological Disorders Meeting, Port Douglas, Australia, Nov. 4th (20min)

Invited talks

- 2014 Departmental, Institute of Biomedicine, Jinan University, Guangzhou, China, April 8th (invited by Prof. Ya-dong Huang)
- 2014 Departmental, Tongji Medical School, Huazhong University of Science and Technology, Wuhan, China, April 1st (invited by Prof. Jian-zhi Wang)
- 2013 Departmental, Department of Neurology, West China Hospital of Sichuan University, Chengdu, China, Jan 8th (invited by Prof. Dong Zhou)
- 2012 Departmental, The Picower Institute for Learning & Memory, Massachusetts Institute of Technology, Boston, USA, Aug 14th (invited by Prof. Li-Huei Tsai)
- 2012 Departmental, Center for Neurologic Diseases, Brigham and Women's Hospital, Harvard Medical School, Boston, USA, Aug 13rd (invited by Prof. Jie Shen)
- 2012 Departmental, Rockefeller University, New York, USA, Aug 2nd (invited by Nobel laureate Prof. Paul Greengard)
- 2012 Departmental, Center for Neurodegenerative Disease Research, University of Pennsylvania, Philadelphia, USA, Aug. 1st (invited by Prof. Virginia Lee)

- 2012 Departmental, Institute for Cell Engineering, John Hopkins University, Baltimore, USA, July 31st (invited by Prof. Ted Dawson)
- 2011 Departmental, Department of Chemistry, Tsinghua University, Beijing, China, Sep. 14th (invited by Prof. Yan-mei Li)

Journal editorial board

- Review Editor, *Frontiers in Neurodegeneration* (2014-)

Ad hoc journal reviewer

- *Journal of the American Chemical Society* (2012-) IF 10.7
- *Neurobiology of Aging* (2013-) IF 6.2
- *The Journal of Biological Chemistry* (2008-) IF 4.7
- *Biochimica et Biophysica Acta - Molecular Basis of Disease* (2013-) IF 4.9
- *Frontiers in Aging Neuroscience* (2013-) IF 5.2
- *British Journal of Pharmacology* (2013-) IF 5.1
- *The Journal of Alzheimer's Disease* (2011-) IF 4.2
- *Metallomics* (2014-) IF 4.1
- *ACS Chemical Neuroscience* (2014-) IF 3.9
- *PLoS ONE* (2010-) IF 3.7
- *Journal of Physical Chemistry B* (2014-) IF 3.6
- *Neurochemistry International* (2013-) IF 2.7
- *Lipids in Health and Disease* (2014-) IF 2.3
- *Neurochemical Research* (2014-) IF 2.2
- *Advances in Pharmacological Sciences* (2011-)
- *Biomaterials Science* (2013-)
- *Frontiers in Neurodegeneration* (2014-)

Ad hoc grant reviewer

National Health and Medical Research Council (Australia): 2014-
Scottish Chief Scientist Office: 2014-

Scholarships and awards

- 2014 **Commendation, Premier award for Health & Medical Research 2014, the State of Victoria**
- 2013 **The Chancellor's Prize for Excellence in the PhD Thesis 2013, the University of Melbourne**
- 2013 The Dean's Award for Excellence in the PhD Thesis 2013, Faculty of Medicine, Dentistry and Health Sciences, the University of Melbourne
- 2013 John Milne Prize for Neuroscience 2013 (Best PhD thesis award), Florey

Institute of Neuroscience and Mental Health

2013 Travel Fellowship, Alzheimer's Association International Conference

2010 Chinese Government Award for Outstanding Self-financed Student Abroad, China Scholarship Council

2009-2012 Melbourne International Research Scholarship (MIRS), the University of Melbourne

2009 Student Travel Award, Mental Health Research Institute

2008-2012 Melbourne International Fee Remission Scholarship (MIFRS), the University of Melbourne

Professional Memberships

- Society of Neuroscience, 2010-
- Alzheimer's Association International Society to Advance Alzheimer's Research and Treatment, 2011-

Community Engagement

Category B (scientist) observer, The Florey Animal Ethics Committee

Organizing committee member, Victoria World Parkinson's Day Symposium

Guest 'Labtalk' column writer, Cosmos Magazine