



## Curriculum Vita

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Senior Research Associate, Department of Biology  
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### EDUCATION:

- 2007 **Ph.D.** Cancer Biology Research Center, Tongji Medical College, Huazhong University of Science and Technology, China
- 2004 **MS.**, in Obstetrics and Gynaecology, School of Medicine, Wuhan University, China
- 2001 **M.D.**, in Clinical Medicine, School of Medicine, Wuhan University, China

### PROFESSIONAL APPOINTMENTS:

Oct. 2015 to present: Senior Research Associate, Department of Biology  
2013 --- 2015: Senior Research Technician, Department of Genetics  
2012 --- 2013: Staff Scientist, Pain Center  
2007 --- 2012: Postdoctoral Research Associate, Pain Center,  
Department of Anesthesiology, Washington University School of Medicine,  
St Louis, Missouri

### AWARDS AND HONORS:

- Outstanding graduate student scholarship, 2003
- Outstanding undergraduate student scholarship, 1996- 2000

### PROFESSIONAL SOCIETY:

- The Society of Neuroscience 2008-2013

## **TECHNIQUES AND SKILLS:**

### **Yeast cell biology and genetics**

- Yeast strain isolation, identification, genotyping, culture, cell freezing, recovery and hybridization
- Yeast RNA and DNA isolation, purification and DNA transformation into yeast strains.
- Yeast phenotyping methods, including CuSO<sub>4</sub> resistance, Sulfite resistance, temperature growth, Glucose fermentation – pH, tartaric acid, sorbitol and ethanol resistance assay
- Yeast genome sequence methods, including RAD sequencing, Whole Genome library preparation and Sequencing, Fungal community analysis by high-throughput sequencing of amplified markers ( ITS)
- Data analysis of sequence variants

### **Molecular biology:**

- RNA and DNA isolation, purification
- PCR, primer design, construction and cloning, mutagenesis, cDNA synthesis, DNA sequencing
- Real-time PCR
- RNA interference
- Yeast Two Hybrid screening and verification

### **Protein biochemistry:**

- Protein isolation, Western and dot blotting
- Co-immunoprecipitation, ELISA
- immunohistochemistry, confocal
- SDS-PAGE, 2D electrophoresis, blue-native PAGE

### **Cell Biology:**

- Cell culture, cell freezing and recovery
- DNA transfection into HEK cell line and primary cultured neurons
- Primary neuron culture: Trigeminal ganglion culture, DRG culture
- Flow Cytometry Analysis
- Calcium Imaging, calcium signal time lapse analysis

### **Virology:**

- Virus vector construction, Lentivirus, AAV
- Package and assembly of virus
- Transduction of virus into HEK cell and neurons
- Virus titer measurement

### **Animal behavior and histology**

- Mouse handling, habituation, injection
- Pain behavior and model: Formalin test, Von Frey assay, Hargreaves assay, Chronic constriction injury (CCI), mouse craniectomy surgery and video taping
- Mouse perfusion, dissection and immunohistochemistry. HE staining, X-gal staining

### **Bioinformatics and computer skills**

- Blast; NCBI; GenBank searching
- Statistica, SPSS, Prism
- SimplePCI, Photoshop, SigmaPlot, Origin
- ApE, Chromas Lite, Image J,
- R and R Studio

## PUBLICATIONS:

1. Williams KM, **Liu P**, Fay JC. Evolution of ecological dominance of yeast species in high-sugar environments. *Evolution*. 2015 Jun 18. doi: 10.1111/evo.12707. [Epub ahead of print]
2. Guo Z, **Liu P**, Ren F, Cao YQ. Non-migraine associated TRESK K<sup>+</sup> channel variant C110R does not increase the excitability of trigeminal ganglion neurons. *J Neurophysiol*. 2014 Aug 1;112(3):568-79
3. **Liu P**, Xiao Z, Ren F, Guo Z, Chen Z, Zhao H, Cao YQ. Functional Analysis of a Migraine-Associated TRESK K<sup>+</sup> Channel Mutation. *J Neurosci*. 2013 Jul 31;33(31):12810-24
4. Huang D, **Liu P**, Yanagawa Y, Cao YQ. Activation of trigeminal nociceptive pathway by dural application of inflammatory mediators in mice. Manuscript in preparation.
5. Tao J, **Liu P**, Xiao Z, Zhao H, Gerber BR, Cao YQ. Effects of familial hemiplegic migraine type 1 mutation T666M on voltage-gated calcium channel activities in trigeminal ganglion neurons. *J Neurophysiol*. 2012 Mar;107(6):1666-80
6. **Liu P**, Li S, Xi L et.al. Expression of TMEM87B interacting with the human papillomavirus type 18 E6 oncogene in the Hela cDNA library by a yeast two-hybrid system. *Oncol Rep*. 2008 Aug;20(2):421-7
7. **Liu P**, Li S, Xi L et.al. Screening for novel binding proteins interacting with human papillomavirus type 18 E6 oncogene in the Hela cDNA library by yeast two-hybrid system. *J Huazhong Univ Sci Technolog Med Sci*. 2008 Feb;28(1):93-6
8. Wei J, Xu G, Wu M, Zhang Y, Li Q, **Liu P**, Zhu T, Song A, Zhao L, Han Z, Chen G, Wang S, Meng L, Zhou J, Lu Y, Wang S, Ma D. Overexpression of vimentin contributes to prostate cancer invasion and metastasis via src regulation. *Anticancer Res*. 2008 Jan-Feb;28(1A):327-34
9. Li Q, Wu M, Wang H, Xu G, Zhu T, Zhang Y, **Liu P**, Song A, Gang C, Han Z, Zhou J, Meng L, Lu Y, Wang S, Ma D. Ezrin silencing by small hairpin RNA reverses metastatic behaviors of human breast cancer cells. *Cancer Lett*. 2008 Mar 8;261(1):55-6
10. **Liu P**, Xi L, Tao H, Lu Y, Ma D. Construction and identification of a yeast two-hybrid bait vector for screening of homo sapiens peroxiredoxin II-binding protein. *Medical Journal of Wuhan University*, 2007.28(4):413-417.
11. **Liu P**, Song A, Ma D. Construction and verification of yeast bait plasmids carrying peroxiredoxin II cDNA fragment. *Central China Medical Journal*.2007,31(6):467-469
12. Wu M, Bai X, Xu G, Wei J, Zhu T, Zhang Y, Li Q, **Liu P**, Song A, Zhao L, Gang C, Han Z, Wang S, Zhou J, Lu Y, Ma D. Proteome analysis of human androgen-independent prostate cancer cell lines: variable metastatic potentials correlated with vimentin expression. *Proteomics*. 2007 Jun;7(12):1973-83.
13. **Liu P**, Luo X, Shi Y. The Relativity of survivin and Adenomyosis. *Cancer Research on Prevention and Treatment*, 2004.31(7):400-402.
14. **Liu P**, Luo X, Shi Y. Expression and Significance of Survivin in Adenomyosis. *Medical Journal of Wuhan University*, 2004.25(4):361-363.
15. **Liu P**, Luo X. Development in pharmacotherapy for endometriosis. *Foreign Medical Sciences. Section of Maternal and Child Health*, 2003.14(3):156-160.
16. Luo X, **Liu P**, Zhu Y, et al. Application of TVT Surgery on the Female Stress Urinary Incontinence. *Journal of Practical Obstetrics and Gynecology*, 2003.19(2):89-90.
17. Luo X, Zhu Y, **Liu P**. Surgery Treatment and Evaluation of Female Stress Urinary Incontinence. *Journal of Practical Obstetrics and Gynecology*, 2003.19(2):73-76.