

## CURRICULUM VITAE

### YANBIN JI

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#### ***CURRENT POSITION***

2012-present      **Research Associate**, Dept. of Internal Medicine, Keck School of Medicine,  
University of Southern California, Los Angeles, California, USA

#### ***PREVIOUS POSITIONS AND RESEARCH EXPERIENCES:***

1981-1986      **Attending Physician**, Dept. of Internal Medicine, Shentou Hospital, Shanxi  
Province, P. R. China

1989-1994      **Assistant Medical Director**, Dept. of Clinical Immunology &  
Rheumatology, the Second Affiliated Hospital, Shanxi Medical University,  
Taiyuan, P. R. China

1996-1998      **Postdoctoral Fellow**, Dept. of Biochem. and Biophys., Iowa State  
University, Ames, Iowa, U.S.A.

1998-1999      **Postdoctoral Fellow**, Dept. of Pharmacol., University of Iowa, Iowa City,  
Iowa, U.S.A.

1999-2001      **Postdoctoral Fellow**, Dept. of Pharmacol. and Toxicol., Queen's  
University, Kingston, Ontario, Canada

2001-2008      **Research Associate**, Dept. of Pharmacol. and Toxicol., Queen's  
University, Kingston, Ontario, Canada

2008-2010      **Research Associate**, Dept. of Chem. Eng. (Tissue Regeneration Lab),  
Queen's University, Kingston, Ontario, Canada

2010-2012      **Research Associate**, Dept. of Pharmacol. and Pharmaceutical Sciences,  
School of Pharmacy, University of Southern California, Los Angeles,  
California, USA

#### ***EDUCATION:***

1994-1996      **Doctor of Medicine, Biochemistry**

Heinrich-Heine-University Dusseldorf, Germany  
*“The formation of S-nitrosoglutathione from organic nitrites catalyzed by glutathione S-transferases”*  
**Supervisor: Dr. med. Helmut Sies**

1986.1989      **Master of Medicine, Biochemistry**  
Shanxi Medical University, P. R. China  
*“Protective effect of Sea Buckthorn seed oil from lipid peroxidation”*  
**Supervisor: Dr. med. Ying Gao**

1978.1981      **Doctor of Medicine, Medicine**  
Datong Medical College, P. R. China

***AWARD:***

1995.1996      Cancer Research International Fellowship

***Memberships:***

- American Society for Pharmacology and Experimental Therapeutics
- The Pharmacology Society of Canada

***Languages:***

- English, German and Chinese (mandarin)

***INVITED LECTURES:***

July, 2007      Pharmacy School, Zhejiang University, HangZhou, Zhejiang, China  
*“Oxidative/nitrosative stress and antioxidant enzymes”*

January, 2007      Pharmacy School, Eastern Tennessee State University, Johnson City, TN, USA  
*“Rat liver microsomal glutathione S-transferase, oxidative/nitrosative stress and bioactivation of glyceryl trinitrate”*

December, 2006      Division of Gastroenterology, Medical Center, University of Rochester, Rochester, NY, USA  
*“Rat liver microsomal glutathione S-transferase, oxidative/nitrosative stress and bioactivation of glyceryl trinitrate”*

December, 2006      Division of Gastroenterology, Medical Center, University of Rochester, Rochester, NY, USA  
*“Basic and Clinical Studies in Inflammatory Bowel Disease (IBD) and Colorectal Cancer”*

March, 2006      Monsanto Company, St. Louis, MO, USA

	“Rat liver microsomal glutathione S-transferase, oxidative/nitrosative stress and bioactivation of glyceryl trinitrate”
May, 2004	The 3 <sup>rd</sup> International Conference on the Biology, Chemistry, and Therapeutic Applications of Nitric Oxide, Nara, Japan “Rat liver microsomal glutathione S-transferase and bioactivation of glyceryl trinitrate (GTN) ”
May, 2004	Dept. of Pharmacology and Therapeutics, University of Manitoba, Winnipeg, Manitoba, Canada “Measurement of nitric oxide in biomedical research”
May, 2004	Dept. of Pharmacology and Therapeutics, University of Manitoba, Winnipeg, Manitoba, Canada “Rat liver microsomal glutathione S-transferase, oxidative/nitrosative stress and bioactivation of glyceryl trinitrate”
May, 2004	Dept. of Pharmacology and Toxicology, Queen’s University, Kingston, Canada “Rat liver microsomal glutathione S-transferase, oxidative/nitrosative stress and bioactivation of glyceryl trinitrate”
October, 2001	Dept. of Pharmacology & Toxicology, Queen’s University, Kingston, Ontario “Regulation of microsomal glutathione S-transferase activity by oxidative/nitrosative stress”
June, 1995	International Symposium of Natural Antioxidants, Academia Sinica, Beijing, China “Potential S-nitrosoglutathione formation catalyzing by microsomal glutathione S-transferase in rat liver”

#### ***TEACHING EXPERIENCE:***

2004 -2008	Pharmacology 812, Dept. of Pharmacology and Toxicology, Queen’s University, Kingston, ON, Canada
1989-1994	Internal Medicine tutor for fifth year medical students (General Internal Medicine and Rheumatology, the Second Affiliated Hospital of Shanxi Medical University, Taiyuan, China
1986-1989	Teaching assistant of Biochemistry for second year medical students including introductory biochemistry course, laboratory report and assignment grading, Shanxi Medical University, Taiyuan, China

#### ***STUDENT SUPERVISION:***

2006-2007	Kristina Jenkins, honours project (Generating human mitochondrial aldehyde dehydrogenase 2 mutants and characterizing protein functions
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	of the mutants), Dept of Pharmacology & Toxicology, Queen's University, Kingston, Canada
2005-2006	Erin Compland, honours project (Generating human mitochondrial aldehyde dehydrogenase 2 mutants and characterizing protein functions of the mutants), Dept of Pharmacology & Toxicology, Queen's University, Kingston, Canada
2004-2005	Waseem Rawdah, honours project (Protective role of overexpressed rat hepatic microsomal gultathione S-transferase 1 from oxidative injury in LLC-PK1 cell), Dept of Pharmacology & Toxicology, Queen's University, Kingston, Canada
2003-2004	David Wu, honours project (Effect of LPS on gene and protein expression of rat hepatic microsomal gultathione S-transferase 1, <b>Top Award in the Faculty of Health Sciences, Queen's University</b> ), Dept of Pharmacology & Toxicology, Queen's University, Kingston, Canada
1993-1994	Yiang Wong, Hongyun Wang, Jinfeng Wu, residents, Dept of Clinical Immunology & Rheumatology, The Second Affiliated Hospital, Shanxi Medical University, Taiyuan, China
1992-1993	Jie Zhao, Shuying Wang, Li Xu, residents, Dept of Clinical Immunology & Rheumatology, The Second Affiliated Hospital, Shanxi Medical University, Taiyuan, China
1991-1992	Dong Zhang, Wei Lu, residents, Dept of Clinical Immunology & Rheumatology, the Second Affiliated Hospital, Shanxi Medical University, Taiyuan, China

### **TECHNICAL SKILLS:**

- **Molecular Biology:** protein overexpression, immunoprecipitation, Western/Northern/Dot blotting, DNA/RNA isolation, PCR/RT-PCR/gradient/nest PCR, real-time qPCR, gene cloning, gene transfection (transient and stable) and transformation, direct site-mutagenesis, SiRNA-mediated gene silencing, in vitro transcription, Crispr-cas9 knock out/in
- **Biochemistry:** protein purification, enzyme activity assay, enzyme kinetics, spectrophotometer, fluorometer, luminometer, high pressure liquid chromatography (HPLC), gas chromatography (GC), Mass spectrometry (ESI), peptide synthesizer, LC-MS/MS, SDS-PAGE, 2D-gel, isoelectric focusing electrophoresis (IEF), radio immunoassay, redox-chemiluminescence
- **Cell Biology:** cell culture, isolation of plasma membrane, microsomes and mitochondria, preparation of membrane vesicles and liposomes, flow cytometry, light microscope, electronic microscopes, fluorescence microscope, confocal microscope, FRET assay, immunohistochemistry, in situ hybridization, laser

capture microdissection, isolation, culture and genetic modification of stem cells, fermentor (14 litres), apoptosis assay (TUNEL, Caspase 3, cleaved PARP, cytochrome c, BrdU), Hoeschen procedure (mono layer of endothelium sheet)

- **Zoology:** small animal (mouse, rat and rabbit) surgery, e.g. mouse tail injection, mouse jugular vein catheterization, mouse tail genotyping.

## **PUBLICATIONS:**

### **Patent**

1. Cyclotide grafted with p53 analogues. Pharmacy School, University of Southern California. 2012. (Patent NO. 61/638,433)

### **Publications:**

1. Per Flodby, Yong Ho Kim, LaMonta L. Beard, Danping Gao, **Yanbin Ji\***, Hidenori Kage, Janice M. Liebler, Parviz Minoo, Kwang-Jin Kim, Zea Borok and Edward D. Crandall, Type I and type II cell-specific contributions to alveolar function. *J. Clinical Investigation* (2014 submitted) (**\*equal contribution**)
2. G. Li G, P. Flodby, J. Luo, H. Kage, A. Sipos, D. Gao, **Y. Ji\*** LL. Beard, CN. CMarconett, L. Demaio, YH Kim, KJ. Kim, IA. Laird-Offringa, P. Minoo, JM. Liebler, B. Zhou, ED. Crandall, Z. Borok, Knockout mice reveal key roles for claudin 18 in alveolar barrier properties and fluid homeostasis. *Am J Respir Cell Mol Biol* 51 (2): 210-222, 2014. (**\*equal contribution**)
3. Mary A. Murphy, **Yanbin Ji**, Ian C. Parrag and Kimberly A. Woodhouse, Expression, Purification, and Characterization of Elastin-Like Polypeptides Containing Chondroitin Sulphate Binding Domains. *Biotech & Bioeng* (2014 submitted);
4. **Yanbin Ji**, Subhabrata Majumder, Melissa Millarda, Radhika Borra, Tao Bi, Ahmed Y. Elnagar, Nouri Neamati, Alexander Shekhtman and Julio A. Camarero, In vivo activation of the p53 tumor suppressor pathway by an engineered cyclotide. *JACS* 135 (31): 11623-33, 2013.
5. Yohan D'Souza, **Yanbin Ji** and Brian M. Bennett, Effect of Overexpression of Human Aldehyde Dehydrogenase 2 in LLC-PK1 Cells on Glyceryl Trinitrate Biotransformation and cGMP Accumulation. *Br. J. Pharmacol.* 168 (4):978-87, 2013.
6. Andrew Gould, **Yanbin Ji**, Teshome L. Aboye and Julio A. Camarero. Cyclotides, a Novel Ultrastable Polypeptide Scaffold for Drug Discovery. *Curr Pharm Des.* 17(38):4294-307, 2011.
7. **Yanbin Ji** and Brian M. Bennett, Apoptosis of thoracic endothelial cells in glyceryl trinitrate (GTN) tolerant rats. *Mol Pharmacol* (submitted)

8. **Yanbin Ji**, Diana J. Anderson and Brian M Bennett, Role of microsomal glutathione transferase 1 in the mechanism-based biotransformation of glyceryl trinitrate in LLC-PK1 cells. *Biochemical Pharmacol* 77:1702-1708, 2009
9. Adrain Nicolescu, **Yanbin Ji**, James F. Brien, William R. Racz and Tom Massey. Direct mitochondrial dysfunction precedes reactive oxygen species production in amiodarone-induced toxicity in human peripheral lung epithelial HPL1A cells. *Toxicol Appl Pharmacol* 227:370-379, 2008
10. Robert Kinobe, **Yanbin Ji** and Kanji Nakatsu, A novel inhibitor of heme oxygenase increases cytotoxicity of LLC-PK1 cell induced by TNFa. *J Pharmacol Exp Ther* 323:763-770, 2007
11. **Yanbin Ji** and Brian M. Bennett, Catalyzing function of rat liver microsomal GST in the denitration reaction of glyceryl trinitrate (GTN). *Pharmacol Exp Ther* 318:1050-1056, 2006
12. **Yanbin Ji**, Irina Neverova, Jennifer E VanEyck and Brian Bennett, Nitration of tyrosine 92 in rat liver microsomal glutathione S-transferase 1 (MGST1) mediates activation of the enzyme activity by peroxynitrite (ONOO<sup>-</sup>). *J Biol Chem* 281:1986-1991, 2006
13. **Yanbin Ji** and Brian M. Bennett, Sus Scrofa aldehyde dehydrogenase 2, complete mRNA, cds. (Accession Number in Gene Data Bank, DQ266356) 2005
14. Courtney R. Green, Susan M. Kobus, **Yanbin Ji**, Brian M. Bennett, James N. Reynolds and James F. Brien. Chronic prenatal ethanol exposure increases apoptosis in the frontal cortex of the term fetal guinea pig. *Neurotoxicology and Teratology* 27:871-881, 2005
15. Robert Kinobe\*, **Yanbin Ji\*** and Kanji Nakatsu, Inactivation of heme oxygenases by peroxynitrite. *BMC Pharmacology* 4: 26, 2004 (\*equal contribution)
16. Jon Difabio, **Yanbin Ji**, Vasilis Vasiliou, Gregory R. J. Thatcher and Brian M. Bennett. Role of mitochondrial aldehyde dehydrogenase in nitrate tolerance. *Mol Pharmacol*, 64: 1109-1116, 2003
17. **Yanbin Ji** and Brian M. Bennett, Activation of rat liver microsomal GST activity by Peroxynitrite. *Mol Pharmacol*, 63: 136-146, 2003
18. **Yanbin Ji** and Brian M. Bennett, Activation of rat liver microsomal GST by protein S-nitrosylation. *Biochemical Pharmacol.* 63:1397-1404, 2002
19. **Yanbin Ji**, Theeodorus P.M. Akerboom, Helmut Sies and James A. Thomas, S-Nitrosylation and S-glutathiolation of protein sulfhydryls by S-nitroso glutathione. *Arch. Biochem. Biophys.* 362:67-78, 1999.
20. **Yanbin Ji**, Theodorus P.M. Akerboom, Helmut Sies and James A. Thomas, A gel electrofocusing method for studying protein S-nitrosylation. *Methods Enzymol.* 301: 145-151, 1999

21. Helmut Sies, Alcir Dafre, **Yanbin Ji** and Theodorus P.M. Akerboom, Protein S-thiolation and redox regulation of membrane-bound glutathione transferase. *Chemico-Biological Interactions. Chemico-Biological Interaction*, 111-112:177-185, 1998
22. Theodorus P. M. Akerboom, **Yanbin Ji**, Gunter Wagner and Helmut Sies, Subunit specificity and organ distribution of GST-catalysed S-nitrosoglutathione formation from alkyl nitrites in the rat. *Biochem. Pharmacol.* 53:117-120, 1997
23. **Yanbin Ji**, Theodorus P.M. Akerboom and Helmut Sies, Potential role of microsomal GST in the formation of S-nitrosoglutathione from organic nitrites. *Biochem. J.* 313:377-380, 1996
24. **Yanbin Ji** and Ying Gao, Studies of sea buckthorn seed oil and sea buckthorn seed oil fortified with sodium selenite in vitro on blastogenesis of T lymphocyte in rats. *Clinical Medicine (in Chinese)* (1): 9-11,1992
25. **Yanbin Ji** and Ying Gao, Studies of sea buckthorn seed oil and sea buckthorn seed oil fortified with sodium selenite in vivo on Na-K-ATPase activity in erythrocyte ghosts in rats. *Acta Nutr. Sin. (in Chinese)* 13(1): 20-4, 1991. [Biological Abstract 92(5): AB-82, 1991]
26. **Yanbin Ji** and Ying Gao, Effect of feeding of sea buckthorn seed oil and sea buckthorn seed oil supplemented with sodium selenite in vivo on structural stability of erythrocyte ghosts in rats. *Shengwu Huaxue Zazhi (in Chinese)* 7(4): 441-6, 1991 [Chemical Abstracts. 115:181925s, 1991]
27. **Yanbin Ji** and Ying Gao, Effect of feeding of sea buckthorn seed oil and sea buckthorn seed oil supplemented with sodium selenite in vivo on antioxidation in rats. *Journal of Shanxi Medical University* (2): 80-2, 1990
28. **Yanbin Ji**, The biofunction and clinical significance of selenium. *Journal of Shanxi Medical University* (3): 177-184, 1989

- **Manuscripts submitted or in preparation:**

1. **Yanbin Ji et al**, Effect of lipopolysacchride (LPS) on the activity and expression of rat hepatic microsomal glutathione S-transferase (GST). (to be submitted to *J. Pharmacol. Exp. Ther.*)
2. **Yanbin Ji et al**, Potential active transporter of nitrite in LLC-PK1 cells. (in preparation)
3. Frederick W. K. Kan, **Yanbin Ji**, Expression of rat microsomal glutathione S-transferase in ovary and uterus. (in preparation)
4. **Yanbin Ji et al**, Overexpressed MGST1 prevents LLC-PK1 cell from apoptosis induced by TNF $\alpha$  and gliotoxin. (in preparation)

5. **Yanbin Ji** et al, Gene cloning, characterization and tissue distribution of porcine mitochondrial aldehyde dehydrogenase 2 (ALDH2). (to be submitted to Biochem J)

#### ***ABSTRACTS:***

1. **Yanbin Ji**, Tao BI, Ahmed Y. Elnager and Julio A. Camarero (2012) Targeting Intracellular Protein-Protein Interaction with Engineered Cyclotides. 2012 USC Pharmacy School Retreat, Palm Springs, California, USA
2. **Yanbin Ji**, Yuhan D'Souza, Diane Anderson and Brian M. Bennett (2008) Effect of overexpression of human aldehyde dehydrogenase 2 in LLC-PK1 cells on glyceryl trinitrate biotransformation and cGMP accumulation. The IXth World Conference on Clinical Pharmacology and Therapeutics, Quebec, Canada
3. Yuhan D'Souza, **Yanbin Ji** and Brian M. Bennett (2008) Decreased vascular ALDH2 expression in response to nitrate tolerate. The IXth World Conference on Clinical Pharmacology and Therapeutics, Quebec, Canada
4. Ashley J. Hampton, **Yanbin Ji** and Brian M. Bennett (2008) Effects of glyceryl trinitrate on vascular nitrite accumulation and expression of the ATP-binding cassette transporter, ABCA<sub>3</sub>. The IXth World Conference on Clinical Pharmacology and Therapeutics, Quebec, Canada
5. **Yanbin Ji** and Brian M. Bennett (2007) Protective role of rat liver microsomal GST1 from cytotoxicity of LLC-PK1 cell induced by TNF $\alpha$ . Banff 2007: Pharmacology and Therapeutics Conference, Banff, Alberta, Canada
6. Adrain Nicolescu, **Yanbin Ji**, James F. Brien, William R. Racz and Tom Massey. (2007) Amiodoren cytotoxicity in human lung epithelial cells involved ROS. The 11<sup>th</sup> International Toxicology Congress 2007, Montreal, Quebec, Canada
7. Emily Bao, **Yanbin Ji** and Frederick W. K. Kan. (2007) Expression of rat microsomal glutathione S-transferase in rat ovary and uterus. Cell Biology and Experimental Therapy. Washington DC, USA
8. Robert Kinobe, **Yanbin Ji** and Kanji Nakatsu. (2006) A novel inhibitor of heme oxygenase increases cytotoxicity of LLC-PK1 cell induced by TNF $\alpha$ . The 15<sup>th</sup> World Congress of Pharmacology (IUPHAR 2006), Beijing, China
9. **Yanbin Ji** and Brian M. Bennett. (2006) Molecular cloning, characterization and tissue distribution of porcine mitochondrial aldehyde dehydrogenase 2 (ALDH2). The 15<sup>th</sup> World Congress of Pharmacology (IUPHAR 2006), Beijing, China
10. **Yanbin Ji**, Irina Neverova, Heather A. Brown, Jennifer E VanEyck and Brian M. Bennett. (2004) Nitration of tyrosine 92 in rat liver microsomal glutathione S-transferase 1 (MGST1)



mediates peroxynitrite activating enzyme activity. The 3<sup>rd</sup> International Conference on the Biology, Chemistry, and Therapeutic Applications of Nitric Oxide, Nara, Japan

11. **Yanbin Ji**, Diane Anderson and Brian M. Bennett. (2004) Overexpressed rat liver microsomal glutathione S-transferase 1 (MGST1) in LLC-PK1 cells increase cGMP signalling after their exposure to glycerol trinitrate (GTN). The 3<sup>rd</sup> International Conference on the Biology, Chemistry, and Therapeutic Applications of Nitric Oxide, Nara, Japan
12. Courtney R. Green, Susan M. Kobus, **Yanbin Ji**, Brian M. Bennett, James N. Reynolds and James F. Brien. (2004) Chronic prenatal ethanol exposure increases apoptosis in the frontal cortex of the term fetal guinea pig. The 27<sup>th</sup> Annual Scientific Meeting of the Research Society on Alcoholism. Vancouver, BC, Canada
13. **Yanbin Ji**, Diane Anderson and Brian M Bennett. (2003) Apoptosis of thoracic aortic endothelial cells in GTN-tolerant rat. The 46th CFBS Meeting, Ottawa, ON, Canada
14. **Yanbin Ji**, Diane Anderson and Brian M Bennett. (2003) Endothelial dysfunction in nitrate tolerance is associated with apoptotic cell loss. The 2nd International Conference of cGMP signalling. Leipzig, Germany
15. Jon DiFabio, **Yanbin Ji**, Diane Anderson and Brian M Bennett. (2003) Is there a role for mitochondrial aldehyde dehydrogenase in nitrate tolerance? Nitric Oxide (NO) Gordon Research Conference, Ventura, CA, USA.
16. **Yanbin Ji** and Brian M. Bennett. (2002) Effect of lipopolysacchride (LPS) on the activity and expression of rat hepatic microsomal glutathione S-transferase (GST). The XVIth World Congress of Pharmacology, San Francisco, CA, USA
17. **Yanbin Ji**, Diane Anderson, Brian M. Bennett. (2001) Biotransformation of glyceryl trinitrate by rat liver microsomal GST. Pharmacology Vancouver 2001. Vancouver, BC, Canada
18. **Yanbin Ji** and Brian M. Bennett. (2000) Activation of rat liver microsomal GST by protein S-nitrosylation. ASBMB/ASPET 2000 Joint Meeting, Boston, USA
19. **Yanbin Ji** and Brian M. Bennett. (2000) Regulation of rat liver microsomal GST activity by peroxynitrite. ASBMB/ASPET 2000 Joint Meeting, Boston, USA
20. **Yanbin Ji**, Helmut Sies and James A. Thomas. (1998) GSNO causes both protein S-nitrosation and S-glutathiolation. The Oxygen Club of California, Santa Barbara, CA, USA
21. **Yanbin Ji**, Theodorus P. M. Akerboom, Gunter Wagner and Helmut Sies. (1997) Glutathione transferase-catalyzed S-nitrosoglutathione formation from alkyl nitrites in rat tissues. The Second Gordon Research Conference: Nitric Oxide in Biochemistry and Biology, Ventura, CA, USA.

22. Helmut Sies, Alcir Dafre, **Yanbin Ji** and Theodorus P. M. Akerboom. (1996) Protein S-thiolation and redox regulation of membrane-bound glutathione transferase. International Conference on Glutathione and Glutathione-linked Enzymes in Human Cancer and Other Diseases, UT MD Anderson Cancer Center, Houston, TX, USA.
23. **Yanbin Ji**, Theodorus P.M. Akerboom, Gunter Wagner and Helmut Sies. (1996) Subunit specificity and organ distribution of glutathione transferase- catalyzed S- nitrosoglutathione formation from alkyl nitrites in the rat. Oxidative Stress and Redox Regulation: Cellular Signaling, AIDs, Cancer and Other Diseases, Institute Pasteur, Paris, France
24. **Yanbin Ji**, Theodorus P.M. Akerboom and Helmut Sies (1995), Potential nitrosoglutathione formation catalyzing by microsomal GST in rat liver. International Symposium of Natural Antioxidants, Academia Sinica, Beijing, P. R. China.

### ***VOLUNTEER WORK***

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|-----------|--|
| May 2006  | Adjudicator, Poster Session, Ontario Hypertension Society Annual Spring Conference, Toronto, Ontario, Canada |
| 2000-2004 | Summer Soccer Camp in Kingston, Ontario, Canada  |
| 2002-2003 | Parent Council, Rideau Public School, Kingston, Ontario, Canada  |