

BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME Li, Yunbo	POSITION TITLE Professor of Biomedical Sciences, Pharmacology & Pathobiology		
eRA COMMONS USER NAME LIYUNBO	VCOM and Virginia Tech College of Veterinary Medicine		
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
Shandong Medical University, Shandong	MD	1985	Medicine
Shandong Academy of Medical Sciences, Shandong	MS/MPH	1988	Occupational Med/Toxicol
The Johns Hopkins University, MD	Postdoctor	1991-1994	Toxicology/Free Radic Biol
The Johns Hopkins University, MD	PhD	1999	Toxicology/Pharmacology

A. Positions and Honors

Positions and Employment

- 1990.3-8 Visiting Scientist, Toxicology Unit, University of Sydney, NSW, Australia
1990-1991 Research Biophysicist & Cell Physiologist, University of California, Berkeley, CA
1994-1996 Research Scientist, Faculty, The Johns Hopkins University School of Public Health, MD
2000-2003 Assistant Professor, Dept. of Pharmaceutical Sci., St. John's University College of Pharmacy
2003-2004 Associate Professor, Dept. of Pharmaceutical Sci., St. John's University College of Pharmacy
2005-2006 Associate Professor, Davis Heart & Lung Res. Institute, Ohio State University Medical Center, OH
2005-2006 Associate Director, Center for Environmentally and Smoking Induced Disease, The Ohio State University Medical Center, OH
2006.3-10 Associate Professor (Joint Appointment), Division of Pharmacology, The Ohio State University College of Pharmacy, OH
2006.5-10 Investigator, Institute of Mitochondrial Biology, Ohio State University Medical Center, OH
2006.11- Professor, Biomedical Sciences/Pharmacology, Virginia College of Osteopathic Medicine, VA
2007.1- Professor (joint), Biomedical Sciences/Pathobiology, Virginia Tech College of Veterinary Medicine, VA

Honors/Awards

- 1989-90 International Visiting Scholarship, State Committee of Education, China
1990 Visiting Research Scholarship, National Institute of Occupational Health and Safety, Australia
1996 Laboratory Research Scientist Scholarship, The Johns Hopkins University, MD
1998-99 AMZHONG Award for Excellent Academic Achievement
2000-01 St. John's University Start Award
2000-04 St. John's University Faculty Research Fund for Training Graduate Students
2000.7-12 St. John's University Seed Fund
2001.1-6 St. John's University Seed Fund
2001 Summer Research Award, St. John's University, NY
2001 Society of Toxicology's Board of Publications Award for the Best Paper
2003 Faculty Recognition Award, St. John's University, NY
2004 Faculty Recognition Award, St. John's University, NY
2005 DHLRI Start Award, Ohio State University, OH
2007 Harvey Peters Research Center Award, Blacksburg, VA

Editorial Board: Cardiovascular Toxicology 2005-

Other Professional Activities: (i) Member of American Heart Association, The International Society for Free Radical Research, The Society for Free Radical Biology and Medicine, The Society of Toxicology; (ii)

Invited/Ad-Hoc reviewer for >20 scholastic journals, SFBM annual meeting presentations and young scholar awards, and pilot grants to Johns Hopkins NIEHS Center; (iii) Invited speaker for >20 seminars; (iv) mentor/advisor for numerous graduate students, postdoctoral fellows, research scientist/assistant professors, medical students, pharmacy students, and undergraduate students; (v) served on numerous institutional/university committees; (vi) served on 18 PhD/MS thesis committees.

B. Selected Peer-reviewed Publications (selected from a total of 81 peer-reviewed publications)

1. Li Y, Trush MA. Oxidation of hydroquinone by copper: chemical mechanism and biological effects. Arch Biochem Biophys 300:346-355, 1993.
2. Li Y, Lafuente A, Trush MA. Characterization of quinone reductase, glutathione and glutathione S-transferase in human myeloid cell line: induction by 1,2-dithiole-3-thione and effects on hydroquinone-induced cytotoxicity. Life Sci 54:901-916, 1994.
3. Li Y, Trush, MA. Reactive oxygen-dependent DNA damage resulting from the oxidation of phenolic compounds by a copper-redox cycle mechanism. Cancer Res 54, 1895-1898, 1994.
4. Li Y, Trush, MA, Yager JD. DNA damage caused by reactive oxygen species originating from a copper-dependent oxidation of the 2-hydroxy catechol of estradiol. Carcinogenesis 15:1421-1427, 1994.
5. Zhu H, Li Y, Trush MA. Characterization of benzo(a)pyrene quinone-induced toxicity to primary cultured bone marrow stromal cells from DBA/2 mice: Potential role of mitochondrial dysfunction. Toxicol Appl Pharmacol 130:108-120, 1995.
6. Zhu H, Li Y, Trush MA. Difference in xenobiotic detoxifying activities between bone marrow cells from mice and rats: implications for benzene-induced hematotoxicity. J Toxicol Environ Health 46:183-201, 1995.
7. Li Y, Kuppusamy P, Zweier JL, Trush MA. Role of Cu/Zn-superoxide dismutase in xenobiotic activation: I. chemical reactions involved in the Cu/Zn-superoxide dismutase-accelerated oxidation of the benzene metabolite, 1,4-hydroquinone. Mol Pharmacol 49:404-411, 1996.
8. Li Y, Kuppusamy P, Zweier JL, Trush MA. Role of Cu/Zn-superoxide dismutase in xenobiotic activation: II biological effects resulting from the Cu/Zn-superoxide dismutase-accelerated oxidation of the benzene metabolite, 1,4-hydroquinone. Mol Pharmacol 49:412-421, 1996.
9. Trush MA, Twerdok LE, Rembish SJ, Zhu H, Li Y. Analysis of target cell susceptibility as a basis for the development of a chemoprotective strategy against benzene-induced hematotoxicities. Environ Health Perspect 104:1227-1233, 1996.
10. Li Y, Zhu H, Kuppusamy P, Roubaud V, Zweier JL, Trush MA. Validation of lucigenin (bis-N-methylacridinium) as a chemilumigenic probe for detecting superoxide anion radical production by enzymatic and cellular systems. J Biol Chem 273:2015-2023, 1998.
11. Primiano T, Li Y, Kensler TW, Trush MA, Sutter TR. Identification of dithiolethione-inducible gene-1 as a leukotriene B4 12-hydroxydehydrogenase. Carcinogenesis 19:999-1005, 1998.
12. Polyska K, Li Y, Zhu H, Lengauer C, Willson JKV, Markowitz SD, Trush MA, Kinzler KW, Vogelstein B. Somatic mitochondrial DNA mutation in human colon cancer. Nature Genetics 20:291-293, 1998.
13. Chen J, Gokhale M, Li Y, Trush MA, Yager JD. Enhanced levels of several mitochondrial mRNA transcripts and mitochondrial superoxide production during ethinyl estradiol-induced hepatocarcinogenesis and after estrogen treatment of HepaG2 cells. Carcinogenesis 19:2187-2193, 1998.
14. Lee F-YJ, Li Y, Yang EK, Yang SQ, Lin HZ, Trush MA, Dannenberg AJ, Diehl AM. Phenotypic abnormalities in macrophages from leptin-deficient, obese mice. Am J Physiol 276:C386-C394, 1999.
15. Lee F-YJ, Li Y, Zhu H, Yang SQ, Lin HZ, Trush MA, Diehl AM. Tumor necrosis factor increases mitochondrial oxidant production and induces expression of uncoupling protein-2 in the regenerating liver. Hepatology 29:667-677, 1999.
16. Li Y, Zhu H, Trush MA. Detection of mitochondria-derived reactive oxygen species production by the chemilumigenic probes Lucigenin and luminol. Biochim Biophys Acta 1428:1-12, 1999.
17. Li Y, Stansbury KH, Zhu H, Trush MA. Biochemical characterization of lucigenin (bis-N-methylacridinium) as a chemiluminescent probe for detecting intramitochondrial superoxide anion radical production. Biochem Biophys Res Commun 262:80-87, 1999.
18. Chen J, Li Y, Trush MA, Yager JD. Increased mitochondrial superoxide production in ethinyl estradiol treated HepaG2 cells, rat hepatocytes and rat liver. Toxicological Sci 51:224-235, 1999.
19. Yang S, Zhu H, Li Y, Lin H, Gabrielson K, Trush MA, Diehl AM. Mitochondrial adaptations to obesity-related oxidant stress. Arch Biochem Biophys 378:259-268, 2000.

20. Win W, Cao Z, Peng X, Trush MA, Li Y. Different effects of genistein and resveratrol on oxidative DNA damage in vitro. Mutat Res 513:113-120, 2002
21. Li Y, Seacat A, Kuppusamy P, Zweier JL, Yager JD, Trush MA. Copper redox-dependent activation of 2-tert-butyl(1,4)hydroquinone: Formation of reactive oxygen species and induction of oxidative DNA damage in isolated DNA and cultured rat hepatocytes. Mutat Res 518:123-133, 2002.
22. Peng X, Li Y. Induction of cellular glutathione-linked enzymes and catalase by the unique chemoprotective agent, 3H-1,2-dithiole-3-thione in rat cardiomyocytes affords protection against oxidative cell injury. Pharmacol Res 45:491-497, 2002.
23. Cao Z, Hardej D, Trombetta LD, Trush MA, Li Y. Induction of cellular glutathione and glutathione S-transferase by 3H-1,2-dithiole-3-thione in rat aortic smooth muscle A10 cells: Protection against acrolein-induced toxicity. Atherosclerosis 166:291-301, 2003.
24. Cao Z, Hardej D, Trombetta LD, Li Y. The role of chemically-induced glutathione and glutathione S-transferase in protecting against 4-hydroxy-2-nonenal-mediated cytotoxicity in vascular smooth muscle cells. Cardiovasc Toxicol 3:165-178, 2003.
25. Cao Z, Li Y. Potent induction of cellular antioxidants and phase 2 enzymes by resveratrol in cardiomyocytes: Protection against oxidative and electrophilic injury. Eur J Pharmacol 489:39-48, 2004.
26. Cao Z, Li Y. Protecting against peroxynitrite-mediated cytotoxicity in vascular smooth muscle cells via upregulating endogenous glutathione biosynthesis by 3H-1,2-dithiole-3-thione. Cardiovasc Toxicol 4:339-353, 2004.
27. Cao Z, Li Y. The Chemical inducibility of mouse cardiac antioxidants and phase 2 enzymes in vivo. Biochem Biophys Res Commun 317:1080-1088, 2004.
28. Zhu H, Itoh K, Yamamoto M, Zweier JL, Li Y. Role of Nrf2 signaling in regulation of antioxidants and phase 2 enzymes in cardiac fibroblasts: protection against reactive oxygen and nitrogen species-induced cytotoxicity. FEBS Lett 579:3029-3036, 2005.
29. Li Y, Cao Z, Zhu H, Trush MA. Differential roles of 3H-1,2-dithiole-3-thione-induced glutathione, glutathione S-transferase and aldose reductase in protecting against 4-hydroxy-2-nonenal toxicity in cultured cardiomyocytes. Arch Biochem Biophys 439:80-90, 2005.
30. Li Y, Cao Z, Zhu H. Upregulation of endogenous antioxidants and phase 2 proteins by the red wine polyphenol, resveratrol in cultured aortic smooth muscle cells leads to cytoprotection against oxidative and electrophilic stress. Pharmacol Res 53:6-15, 2006.
31. Zhu H, Zhang L, Itoh K, Yamamoto M, Ross D, Trush MA, Zweier JL, Li Y. Nrf2 controls bone marrow stromal cell susceptibility to oxidative and electrophilic stress. Free Radiac Biol Med 41:132-143, 2006.
32. Cao Z, Zhu H, Zhang L, Zhao X, Zweier JL, Li Y. Antioxidants and phase 2 enzymes in cardiomyocytes: chemical inducibility and chemoprotection against oxidant and simulated ischemia-reperfusion injury. Exp Biol Med 231:1353-1364, 2006.
33. Zhu H, Zhang L, Xi X, Zweier JL, Li Y. 4-Hydroxy-2-nonenal upregulates endogenous antioxidants and phase 2 enzymes in rat H9c2 myocardial cells: protection against overt oxidative and electrophilic injury. Free Radic Res 40:875-884, 2006.
34. Xia S, Villamena FA, Hadad CM, Kuppusamy P, Li Y, Zhu H, Zweier JL. Reactivity of dioxygen to ethoxycarbonyl derivatives of tetrathiatriarylmethyl radicals. J Organic Chem 71:7268-7279, 2006.
35. Zhu H, Zhang L, Trush MA, Li Y. Upregulation of endogenous glutathione system by 3H-1,2-dithiole-3-thione in pancreatic RINm5F beta-cells as a novel strategy for protecting against oxidative beta-cell injury. Free Radic Res 41:242-250, 2007.
36. Jone CI, Zhu H, Martin SF, Han Z, Li Y, Alevriadou BR. Regulation of antioxidants and phase 2 enzymes by shear-induced reactive oxygen species in endothelial cells. Ann Biomed Eng 35:683-693; 2007.
37. Zhu H, Cao Z, Zhang L, Trush MA, Li Y. Glutathione and glutathione-linked enzymes in human aortic smooth muscle cells: chemical inducibility and protection against reactive oxygen and nitrogen species-induced injury. Mol Cell Biochem 301:47-59, 2007.
38. Zhu H, Jia Z, Mahaney JE, Ross D, Misra HP, Trush MA, Li Y. The highly expressed and inducible endogenous NAD(P)H:quinone oxidoreductase 1 in cardiovascular cells acts as a potential superoxide scavenger. Cardiovasc Toxicol 7:202-211, 2007.
39. Jia Z, Zhu, H, Trush MA, Misra HP, Li Y. Generation of superoxide from reaction of 3H-1,2-dithiole-3-thione with thiols: implications for dithiolethione chemoprotection. Mol Cell Biochem (in press) 2007.

40. Jia Z, Hallur S, Zhu H, Li Y, Misra HP. Potent upregulation of glutathione and NAD(P)H:quinone oxidoreductase 1 by alpha-lipoic acid in human neuroblastoma SH-SY5Y cells: protection against neurotoxicant-elicited cytotoxicity. Neurochem Res (in press) 2007.

C. Research Support

Ongoing Research Support

R01, HL71190 Li, Yunbo (PI) 04/01/2004-03/31/2008
NIH/NHLBI

Induction of cellular antioxidants and cardioprotection

Major goals: To study the chemical inducibility of antioxidants in cardiac cells and the protective effects on doxorubicin cardiotoxicity.

Role: PI

Overlap: None

R01, HL081248 Villamena, Frederick A. (PI) 12/01/2006-11/30/2010
NIH/NHLBI

Novel Spin Traps for Biological Free Radical Detection

Major goals: To develop novel EPR spin traps for detecting free radicals involved in cardiovascular tissue injury

Role: Co-Investigator

Overlap: None

Recent Completed Research Support

R15, CA91895 Li, Yunbo (PI) 07/01/2001-06/30/2004
NIH/NCI

Mitochondrial reactive oxygen and tumor promotion

Major goal: To investigate the role of mitochondria-derived reactive oxygen species in chemically-induced tumor promotion.

Role: PI

Overlap: None

R01, HL067027 Alevriadou, Rita B. (PI) 03/01/2004-02/28/2006
NIH/NHLBI

Reperfusion-induced endothelial cell dysfunction

Major goal: To investigate the reperfusion-mediated injury to cultured human endothelial cells

Role: Co-investigator

Overlap: None