Chi Li, Ph.D.
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Education

09/92-10/98 Department of Biological Sciences, Columbia University, New York, NY
Ph.D. (Molecular Biology)
09/92-10/95 Department of Biological Sciences, Columbia University, New York, NY
M.A. & M.Phil. (Molecular Biology)
09/86-07/91 Department of Biology, University of Science and Technology of China,
Hefei, China. B.S. (Biology)

Academic Appointments

06/10- Senior member
Graduate faculty of the School of Medicine
University of Louisville

02/06- Assistant Professor of Medicine, and Pharmacology & Toxicology
Associate Scientist, James Graham Brown Cancer Center
University of Louisville School of Medicine

Other Positions and Employment

07/99-01/06 Postdoctoral research fellow in Dr. Craig Thompson's laboratory
University of Pennsylvania Cancer Center

11/98-06/99 Postdoctoral research fellow in Dr. Craig Thompson's laboratory
Howard Hughes Medical Institute, University of Chicago

05/93-10/98 Graduate research assistant with Dr. James Manley
Department of Biological Sciences, Columbia University

Certification and Licensure

N/A

Professional Memberships and Activities

07/07- Member, American Association for Cancer Research
02/09 Ad Hoc reviewer for the Health Research Board (Ireland)
09/14 Reviewer for National Cancer Institute Special Emphasis Panel

Honors and Awards

09/92-10/98 Faculty Fellowship (Columbia University)
06/96 James Howard McGregor Prize (Columbia University)
05/98 Peter Sajovic Memorial Prize (Columbia University)
07/05-06/11 Howard Temin Career Development Award (National Institutes of Health)

11/07 The first place Ralph Scott Fellow Research Prize for poster presentation
(Annual James Graham Brown Cancer Center Retreat)

Committee Assignments and Administrative Services

08/08- Faculty Advisory Committee
James Graham Brown Cancer Center
University of Louisville School of Medicine

12/10-07/11 Thesis Committee
Clarisse S. Muenyi, Ph.D. student
Department of Pharmacology and Toxicology
University of Louisville School of Medicine

12/10-07/11 Thesis Committee
Erica N. Rogers, Ph.D. student
Department of Pharmacology and Toxicology
University of Louisville School of Medicine

05/12- Thesis Committee
Huihui Wu, Ph.D. student
Department of Pharmacology and Toxicology
University of Louisville School of Medicine

05/13- Thesis Committee
Shuvasree Sengupta, Ph.D. student
Department of Microbiology and Immunology
University of Louisville School of Medicine

07/13- Thesis Committee
Melissa Skibba, M.S. student
Department of Pharmacology and Toxicology
University of Louisville School of Medicine

10/10, 10/11, 10/12, 09/13
Judge, Research!Louisville, University of Louisville, KY

11/10, 11/11, 10/12
Judge, Annual James Graham Brown Cancer Center Retreat,
University of Louisville, KY

Educational Activities

Courses:

10/09/08 Lecturer
"Mechanism of cell death and cell fate"
Radiation Biology course, Department of Radiation Oncology
1 lecture, 6 radiation oncology fellows.

04/02/10 Lecturer
"Mechanism of cell death and cell fate" and "Cancer stem cell"
Radiation Biology course, Department of Radiation Oncology
2 lectures, 6 radiation oncology fellows.

04/04/11 Lecturer
"Mechanism of cell death and cell fate" and "Cancer stem cell"
Radiation Biology course, Department of Radiation Oncology
2 lectures, 7 radiation oncology fellows.

04/02/12 Lecturer
"Mechanism of cell death and cell fate" and "Cancer stem cell"
Radiation Biology course, Department of Radiation Oncology
2 lectures, 6 radiation oncology fellows.

07/07/13 Lecturer
"Mechanism of cell death and cell fate" and "Cancer stem cell"
Radiation Biology course, Department of Radiation Oncology
2 lectures, 6 radiation oncology fellows.

Seminars:

03/16/09 Instructor
"Target the apoptosis: anticancer activity of anti-Bcl-2 family inhibitor ABT-263"
Hematology/Oncology Fellows Research Seminar Series
James Graham Brown Cancer Center, Department of Medicine

04/19/10 Instructor
"TRIAL agonists and cancer therapy"
Hematology/Oncology Fellows Research Seminar Series
James Graham Brown Cancer Center, Department of Medicine

Students and fellows mentored:

10/13- Aaron M. Neely
Ph.D. student in the Department of Pharmacology and Toxicology

01/11- Guoping Zhao, Ph.D.
Postdoctoral fellow

06/13-08/13 Jacob Mattingly
College student in the James Graham Brown Cancer Center Summer Research Internship Program

8/08-11/12 Colins O. Eno
Ph.D. student in the Department of Pharmacology and Toxicology

08/12-10/12 Melissa E. Skibba
Graduate student in the Department of Pharmacology and Toxicology

05/08-06/11 Yanglong Zhu, Ph.D.
Postdoctoral fellow

04/06-04/10 Xiaoli Wang, M.D./Ph.D.
Postdoctoral fellow

06/08-08/08 Chandler D. Wilfong

Medical school student in the University of Louisville Summer Research Scholars Program

06/09-08/09 Jared Allard
High School student in the James Graham Brown Cancer Center Summer Research Internship Program

Clinical activities
N/A

Grants and Contracts
Finished
K01CA106599-06S1 Li (PI) 09/01/2009 to 8/31/2010 Direct Cost $46,296
NIH/NCI (ARRA Administrative Supplement)
"Regulation of apoptosis by Bcl-X_L, Bak and Bax"
Role: PI (0% effort)

K01 CA106599 Li (PI) 07/01/2005 to 06/30/2011 Direct Cost $702,000
NIH/NCI
"Regulation of apoptosis by Bcl-X_L, Bak and Bax"
Role: PI (75% effort)

Basic Award Li (PI) 07/01/2010 to 6/30/2011 Direct Cost $43,161
Clinical Translational Science Pilot Grant Program, the University of Louisville
"Promotion of tumor cell apoptosis by direct activation of the pro-apoptotic Bcl-2 protein Bax"
Role: PI (0% effort)

1P20 RR018733 Li (PI of Project 6) 07/01/2008 to 06/30/2012 Direct Cost $782,910
NIH/Center for Biomedical Research Excellence in Molecular Targets
"The programmed death pathway initiated from the Endoplasmic Reticulum"
Role: PI of sub-project (22% effort)

OGMB120516 Li (PI) 05/01/2012 to 04/30/2014 Direct Cost $13,6364
Commonwealth of Kentucky Lung Cancer Research Program
"*Activating Bax as a therapeutic strategy against lung cancer*"
Role: PI (5% effort)
Relinquished after 07/31/2013 due to the overlap of research scope with the funded R01

Basic Award Li (PI) 09/01/2012 to 8/31/2013 Direct Cost $15,000
Health Sciences research Committee, the University of Louisville
"*Activation of mitochondrial apoptosis signaling by translocated ER luminal protein PDI*"
Role: PI (0% effort)

Ongoing
1 R01 CA175003-01 Li (PI) 08/01/2013-05/31/2018 Direct cost $1,033,175
NIH/NCI
"*Activating Bax as a therapeutic strategy for lung cancer*"
Role: PI (37.5% effort)

OGMB130027A1 Li (PI) 08/01/2013 to 06/31/2014 Direct Cost $55,000
Commonwealth of Kentucky Lung Cancer Research Program Supplementary Grant
"Activating Bax as a therapeutic strategy against lung cancer"
Role: PI (5% effort)

Intramural Research Incentive Grant 06/01/2014 to 05/31/2015 Direct cost $4,000
"Identifying compounds that induce human tumor cell apoptosis independent of Bcl-2 proteins"
Role: PI (5% effort)

Pending
1R21CA191043-01 Li (multiple-PI with Dr. Machen at University of California Berkeley)
NIH/NCI 12/01/2014 to 11/30/2016 Direct Cost $275,000
"Inducing tumor cell apoptosis by bacterial homoserine lactone"
Role: PI (10% effort)

KSEF-3130-RDE-017 Li (PI) 06/01/2014 to 05/31/2015 Direct Cost $27,277
Kentucky Science and Engineering Foundation
"Tumor Cell Killing by a Bacterial Homoserine Lactone"
Role: PI (5% effort)

Patents
Pending
12/13 United States Provisional Utility Patent Application (Eer. no. 61/923,437) "Activating the pro-apoptotic Bcl-2 protein Bax by a small molecule induces tumor cell apoptosis" .

Editorial work
Editorial Board:
2009- International Journal of Clinical and Experimental Pathology

Review manuscript:
07/08 Journal of Cellular and Molecular Medicine
05/09 Journal of Cell Death
05/09 Acta Pathologica; Microbiologica et Immunologica Scandinavica
11/10 Molecular Biology Reports
03/11 Membrane Transport and Signaling
05/11 Cell Death and Differentiation
06/11 Life Sciences
12/11 Computational and Structural Biotechnology Journal
05/12 Biometals
12/12 PeerJ
03/13 Science Translational Medicine
06/13 Journal of Bioenergetics and Biomembranes
07/13 Journal of Vascular Research
11/13 Burns
03/13 Journal of Biological Chemistry

Abstracts and Presentations
a. Oral Presentations (National/International)
*1. 04/09/09 "The regulation of endoplasmic reticulum membrane permeability by Bcl-2 proteins"
Department of Molecular and Biomedical Pharmacology Seminar Series

University of Kentucky Medical Center, Lexington, KY

*2. 06/16/09 "The regulation of ER membrane permeability during apoptosis"
Natural Science Division Seminar Series
Pepperdine University, Malibu, CA

*3. 10/02/09 "Regulation of the endoplasmic reticulum gateway to apoptosis by Bcl-2 proteins"
Trev & Joyce Deeley Research Centre, British Columbia Cancer Agency
Victoria, British Columbia, Canada

*4. 10/06/09 "ER stress and apoptosis"
Department of Molecular Genetics & Microbiology
SUNY-Stony Brook, Stony Brook, NY

*5. 11/12/09 "Regulation of endoplasmic reticulum-mediated apoptosis by Bcl-2 proteins"
Department of Cancer and Cell Biology
University of Cincinnati, Cincinnati, OH

b. Oral Presentations (Local/Regional)
*1. 04/20/06 "Regulation of the endoplasmic reticulum gateway to apoptosis by Bcl-2 proteins"
Department of Pharmacology & Toxicology Seminar
University of Louisville School of Medicine, Louisville, KY

*2. 02/08/07 "Regulation of the endoplasmic reticulum gateway to apoptosis by Bcl-2 proteins"
Molecular Targets Seminar
James Graham Brown Cancer Center, Department of Medicine
University of Louisville School of Medicine, Louisville, KY

*3. 05/29/07 "Regulation of the endoplasmic reticulum gateway to apoptosis by Bcl-2 proteins"
Department of Molecular, Cellular and Craniofacial Biology and Birth Defects Center
University of Louisville School of Dentistry, Louisville, KY

*4. 02/29/08 "Regulation of endoplasmic reticulum-mediated apoptosis by Bcl-2 proteins"
Department of Ophthalmology & Visual Sciences
University of Louisville School of Medicine, Louisville, KY

*5. 02/03/11 "ER Membrane Permeability and Apoptosis"
Department of Pharmacology & Toxicology Seminar
University of Louisville School of Medicine, Louisville, KY

*6. 06/29/12 "Distinct roles of Bcl-2 proteins localized on different organelles in apoptosis"
Molecular Targets Seminar
James Graham Brown Cancer Center, Department of Medicine
University of Louisville School of Medicine, Louisville, KY

Publications

Peer-Reviewed

1. Um, M.[#], **Li, C.**[#], and Manley, J.L. (1995) Transcriptional repressor Even-skipped interacts directly with TATA-binding protein. *Mol. Cell Biol.* 15:5007-5016. ([#] The first two authors contributed equally to the paper). PMID:7651419.

2. Manley, J.L., Um, M., **Li, C.**, and Ashali, H. (1996) Mechanism of transcriptional activation and repression can both involve TFIID. *Phil. Trans. R. Soc. Lond.* B 351: 516-526. PMID:8735274.

3. **Li, C.**, and Manley, J.L. (1998) Even-skipped represses transcription by binding TBP and blocking the TFIID-TATA box interaction. *Mol. Cell Biol.* 18:3771-3781. PMID:9632760.

4. **Li, C.**, and Manley, J.L. (1999) Allosteric regulation of Even-skipped repression activity by phosphorylation. *Mol. Cell.* 3:77-86. PMID:10024881.

5. **Li, C.**, Fox, C.J., Master, S.R., Bindokas, V.P., Chodosh, L.A., and Thompson, C.B. (2002) Bcl-XL affects Ca2+ homeostasis by regulating expression of inositol 1,4,5-triphosphate receptor. *Proc. Natl. Acad. Sci. USA.* 99:9830-9835. PMID:12118121.

6. **Li, C**. and Thompson, C.B. (2002) DNA damage, deamidation, and death. *Science*. 298:1346-1347. PMID:12434041.

7. Zong, W-X.[#], **Li, C.**[#], Hatzivassiliou, G., Lindsten, T., Yuan, J., and Thompson, C.B. (2003) Initiation of apoptosis from the endoplasmic reticulum by Bax and/or Bak. *J. Cell Biol.* 162:59-69 ([#] The first two authors contributed equally to the paper). PMID:12847083.

8. Lum, J.J., Bauer, D.E., Kong, M., Harris, M.H., **Li, C.**, Lindsten, T., and Thompson, C.B. (2004) Growth factor regulation of autophagy and cell survival in the absence of apoptosis. *Cell.* 120: 237-248. PMID:15680329.

9. Oltersdorf, T., Elmore, S.W., Shoemaker, A.R., Armstrong, R.C., Augeri, D., Belli, B.A., Bruncko, M., Deckwerth, T.L., Dinges, J., Hajduk, P.J., Joseph, M.K., Kitada, S., Korsmeyer, S.J., Kunzer, A.R., Leita, A., **Li, C.**, Mitten, M.J., Nettesheim, D.G., Ng, S., Nimmer, P.M., O'Connor, J.M., Oleksijew, A., Petros, A.M., Reed, J.C., Shen, W., Tahir, S.K., Thompson, C.B., Tomaselli, K.J., Wang, B., Wendt, M.D., Zhang, H., Fesik, S.W., and Rosenberg, S.H. (2005) An inhibitor of Bcl-2 family proteins induces regression of solid tumors. *Nature*. 435: 677-681. PMID:15902208.

10. White, C.[#], **Li, C**[#], Yang, J., Petrenko, N.B., Madesh, M, Thompson, C.B., and Foskett, K.J. (2005) The endoplasmic reticulum gateway to apoptosis: Bcl-XL modulation of the InsP3. *Nature Cell Biol.* 7:1021-1028 ([#] The first two authors contributed equally to the paper). PMID:16179951.

11. Bivona, T.G., Quatela, S.E., Bodemann, B.O., Ahearn, I.M., Soskis, M.J., Mor, A., Miura, J., Wiener, H.H., Wright, L., Saba, S.G., Yim, D., Fein, A., Perez de Castro, I., **Li, C.**, Thompson, C.B., Cox, A.D., and Philips, M.R. (2006) PKC regulates a farnesyl-electrostatic switch on K-Ras that promotes its association with Bcl-Xl on mitochondria and induces apoptosis. *Mol Cell.* 21: 481-493. PMID:16483930.

12. **Li, C.**, Wang, X., Vais, H., Thompson, C.B., Foskett, J.K. and White, C. (2007) Apoptosis regulation by Bcl-xL modulation of mammalian inositol 1,4,5-trisphosphate receptor channel isoform gating. *Proc. Natl. Acad. Sci. USA.* 104:12565-12570. PMID:17636122.

13. **Li, C.** Increased mitochondrial activity in Anthrax-induced cell death. (2009) *J. Cell Death.* 2:41-44.

14. Brock, S.E., **Li, C.**, and Wattenberg, B.W. (2010) The Bax carboxyl-terminal hydrophobic helix does not determine organelle-specific targeting but is essential for maintaining Bax in an inactive state and for stable mitochondrial membrane insertion. *Apoptosis*. 15:14-27. PMID:19809877.

15. Olberding, K.E., Wang, X., Zhu, Y., Pan, J., Rai, S., and **Li, C.** (2010) Actinomycin D synergistically enhances the efficacy of the BH3 mimetic ABT-737 by down-regulating Mcl-1 expression. *Cancer Biology & Therapy*. 10:922-933. PMID:20818182.

16. Wang, X., Olberding, K.E., White, C., and **Li, C.** (2011) Bcl-2 proteins regulate ER membrane permeability to luminal proteins during ER stress-induced apoptosis. *Cell Death & Diff.* 18:38-47. PMID:20539308.

17. Wang, X., Eno, C.O., Altman, B.J., Zhu, Y., Zhao, G., Olberding, K.E., Rathmell, J.C., **Li, C.** (2011) ER stress modulates cellular metabolism. *Biochem. J.* 435:285-296. PMID:21241252.

18. Eno, C.O., Eckenrode, E.F., Olberding, K.E., Zhao, G., White, C. and **Li, C.** (2012) Distinct roles of mitochondria- and ER-localized Bcl-XL in apoptosis resistance and Ca^{2+} homeostasis. *Mol Biol Cell.* 23:2605-2618. PMID:22573883.

19. Eno, C.O., Zhao, G., Olberding, K.E., and **Li, C.** (2012) The Bcl-2 proteins Noxa and Bcl-XL coordinately regulate oxidative stress-induced apoptosis. *Biochem J.* 444:69-78. PMID:22380599.

20. Zhu, Y., Eaton, J. W., and **Li, C.** (2012) Titanium dioxide (TiO_2) nano-particles preferentially induce cell death in oncogenic transformed cells in a Bak/Bax-independent fashion. *PLoS One*.7:e50607. PMID:23185639.

21. Lanceta, L., **Li, C.**, Choi, A.M., and Eaton J.W. (2013) Heme oxygenase-1 overexpression alters intracellular iron distribution. *Biochem J.* 449:189-194. PMID:22989377.

22. Huang, H., Hu, X., Eno, C.O., Zhao, G., **Li, C.**, White, C. (2013) An interaction between Bcl-xL and VDAC promotes mitochondrial Ca2+ uptake. *J Biol Chem.* 288:19870-19881. PMID:23720737.

23. Eno, C.O., Zhao, G., Venkatanarayan, A, .Wang, B., Flores, E.R., **Li, C.** (2013) Noxa couples lysosomal membrane permeabilization and apoptosis during oxidative stress. *Free Radic Biol Med.* 65C:26-37. PMID:23770082

24. Zhao, G., Zhu, Y., Eno, C.O., Liu, Y., DeLeeuw, L., Burlison, J.A., Chaires, J.B., Trent, J., **Li., C.** (2014) Activating the pro-apoptotic Bcl-2 protein Bax by a small molecule induces tumor cell apoptosis. *Mol Cell Biol.* 34:1198-1207. PMID:24421393.

25. Schwarzer, Z., Fu, Z., Shuai, S., Babbar, S., Zhao, G., **Li, C.**, Machen, T. E. (2014) Pseudomonas aeruginosa homoserine lactone triggers apoptosis and Bak/Bax-Independent release of mitochondrial cytochrome C in fibroblasts. *Cell Micro.* 16:1094-1104. PMID: 24438098.

26. Huang, H., Shah, K., Bradbury, N., **Li, C.**, White, C. (2014) Mcl-1 promotes lung cancer cell migration by directly interacting with VDAC to increase mitochondrial Ca2+ uptake and reactive oxygen species generation. *Cell Death & Disease.* 5:e1482.

Non-Peer-Reviewed

Not Applicable