

Curriculum Vitae

Dudley Lamming

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Whitehead Institute for Biomedical Research, 9 Cambridge Center, Cambridge MA 02142

Education and Training:

2/08 – Present Senior Research Associate/Postdoctoral Fellow, Whitehead Institute for Biomedical Research, Cambridge MA
Advisor: David M. Sabatini, M.D., Ph.D.

9/02-1/08 Ph.D., Experimental Pathology, Harvard University, Cambridge, MA
Advisor: David A. Sinclair, Ph.D.
Thesis: The regulation of lifespan by sirtuins in *Saccharomyces cerevisiae*

9/96-5/00 B.S., Nuclear Engineering, Massachusetts Institute of Technology, Cambridge, MA
Minor: Chemistry

Other Research Experience:

7/00-7/02 Enanta Pharmaceuticals
Associate Scientist, Discovery Biology

6/98-8/98; Technical Intern, Los Alamos National Laboratory, Nondestructive Testing
5/99-8/99 Advisor: Deborah A. Summa, Ph.D.

10/97-5/98 UROP Intern, MIT, Department of Chemical Engineering

Professional Associations:

American Aging Association, Gerontological Society of America

Academic and Professional Honors:

2013 Whitehead Appreciation Award

2012 American Aging Association, Aging Research Network travel award

2011 Best Oral Presentation, American Aging Association, Raleigh, NC

2007 American Federation for Aging Research Dorothy Dillon Eweson Lecture Series travel award

2005 Albert J. Ryan Fellow

2005 Finalist, Best Student Presentation, American Aging Association Oakland, CA

2003 National Science Foundation Graduate Research Fellowship Program, Honorable Mention

1996 National Finalist, Westinghouse Science Talent Search

Publications:

Research Papers (* indicates authors contributed equally):

1. Ye, L., Widlund, A.L., Sims, C.A., **Lamming, D.W.**, Guan, Y., Davis, J.G., Sabatini, D.M., Harrison, D.E., Vang, O., Baur, J.A. (2013). Rapamycin doses sufficient to extend lifespan do not compromise muscle mitochondrial content or endurance. *Aging (Albany NY)* 5(7): 539-550.
2. **Lamming, D.W.**, Ye, L., Astle, C.M., Baur, J.A., Sabatini, D.M., Harrison D. E. (2013). Young and old genetically heterogeneous HET3 mice on a rapamycin diet are glucose intolerant but insulin sensitive. *Aging Cell* 12(4):712-718.
3. Mercken E.M., Crosby S.D., **Lamming D.W.**, Jebailey L., Krzysik-Walker S., Villareal D., Capri M., Franceschi C., Zhang Y., Becker K., Sabatini D.M., de Cabo R., Fontana L. (2013). Calorie restriction in humans inhibits the PI3K/AKT pathway and induces a younger transcription profile. *Aging Cell* 12(4):645-651.

4. Hubbard B.P., Gomes A.P., Dai H., Li J., Case A.W., Considine T., Riera T.V., Lee J.E., E S.Y., **Lamming D.W.**, Pentelute B.L., Schuman E.R., Stevens L.A., Ling A.J., Armour S.M., Michan S., Zhao H., Jiang Y., Sweitzer S.M., Blum C.A., Disch J.S., Ng P.Y., Howitz K.T., Rolo A.P., Hamuro Y., Moss J., Perni R.B., Ellis J.L., Vlasuk G.P., Sinclair D.A. (2013). Evidence for a common mechanism of SIRT1 regulation by allosteric activators. *Science* 339: 1216-1219.
5. **Lamming, D.W.***, Ye, L.*, Katajisto, P., Goncalves, M.D., Saitoh, M., Stevens, D.M., Davis, J.G., Salmon, A.B., Richardson, A., Ahima, R.S., Guertin, D.A., Sabatini, D.M., Baur, J.A. (2012). Rapamycin-induced insulin resistance is mediated by mTORC2 loss and uncoupled from longevity. *Science* 335: 1638-1643.
 Highlighted in: Piquet, A.C., Martins, P.J., Kozma, P.C. (2012). Rapamycin impacts positively on longevity, despite glucose intolerance induction, *J. Hepatol.* 57(6): 1368-9.
 Hughes, K. and Kennedy, B. (2012). Rapamycin Paradox Resolved, *Science* 335:1578-9.
 Ray, L.B. (2012). Dissecting Rapamycin Responses, *Sci. Signal.* 5(218): ec103.
 mTOR: The Master Regulator (2012). *Cell* 149(5): 955-7.
6. Yilmaz, O.H., Katajisto, P., **Lamming, D.W.**, Bakan, I., Sengupta, S., Birsoy, K., Bauer-Rowe, K.E., Dursun, M., Yilmaz, O., Selig, M., Nielson, P., Bhan, A., Mino-Kenudson, M., Zukerberg, L., Deshpande, V., Sabatini, D.M. (2012). mTORC1 in the Paneth cell niche couples intestinal stem-cell function to calorie intake. *Nature* 486: 490-495.
 Highlighted in: Ramos, F.J. and Kaeberlein, M. (2012). Ageing: A healthy diet for stem cells, *Nature*, 486: 477-478.
7. Ye L., Varamini B., **Lamming D.W.**, Sabatini D.M., Baur J.A. (2012). Rapamycin has a biphasic effect on insulin sensitivity in C2C12 myotubes due to sequential disruption of mTORC1 and mTORC2. *Front. Gene.* 3:177. doi: 10.3389/fgene.2012.00177
8. Robida-Stubbs, S., Glover-Cutter K., **Lamming, D.W.**, Mizunuma, M., Narasimhan, S.D., Neumann-Haefelin, E., Sabatini, D.M., Blackwell, T.K. (2012). TOR signaling and rapamycin influence longevity by regulating SKN-1/Nrf and DAF-16/FoxO. *Cell Metabolism* 15(5): 713-724.
9. Medvedik, O*, **Lamming, D.W.***, Kim, K.D., Sinclair, D.A. (2007). MSN2 and MSN4 link calorie restriction and TOR to sirtuin-mediated lifespan extension in *Saccharomyces cerevisiae*. *PLoS Biology* 5(10): e261.
10. Yang, H., Yang, T., Baur, J.A., Perez, E., Matsui, T., Carmona, J.J., **Lamming, D.W.**, Souza-Pinto, N.C., Bohr, V.A., Rosenzweig, A., de Cabo, R., Sauve, A.A., Sinclair, D.A. (2007). Nutrient-sensitive mitochondrial NAD⁺ levels dictate cell survival. *Cell* 130(6):1095-1107.
11. Yu, M.C., **Lamming, D.W.**, Eskin, J.A., Sinclair, D.A., and Silver, P.A. (2006). The role of protein arginine methylation in the formation of silent chromatin. *Genes Dev* 20: 3249-3254.
12. **Lamming, D.W.***, Latorre-Esteves, M. *, Medvedik, O. *, Wong, S.N. *, Tsang, F.A., Wang, C., Lin, S.J., and Sinclair, D.A. (2005). HST2 mediates SIR2-independent life-span extension by calorie restriction. *Science* 309: 1861-1864.
13. Howitz, K.T., Bitterman, K.J., Cohen, H.Y., **Lamming, D.W.**, Lavu, S., Wood, J.G., Zipkin, R.E., Chung, P., Kisielewski, A., Zhang, L.L., Scherer, B., and Sinclair, D.A. (2003). Small molecule activators of sirtuins extend *Saccharomyces cerevisiae* lifespan. *Nature* 425: 191-196.
14. Robinson, L.J., Roberts, W.K., Ling, T.T., **Lamming, D.**, Sternberg, S.S., and Roepe, P.D. (1997). Human MDR 1 protein overexpression delays the apoptotic cascade in Chinese hamster ovary fibroblasts. *Biochemistry* 36:11169-11178.

Submitted for Publication:

1. **Lamming, D.W.**, Demirkan, G. Boylan, J.M., Mihaylova, M.M, Peng, T., Ferreira, J., Neretti, N., Salomon, A., Sabatini, D.M., Gruppuso, P.A. (submitted). Hepatic Signaling by the Mechanistic Target of Rapamycin Complex 2 (mTORC2). Submitted, *FASEB*.

Reviews:

1. **Lamming, D.W.**, Ye, L., Sabatini, D.M., Baur, J.A. (2013). Rapalogs and mTOR inhibitors as anti-aging therapeutics. *J Clin Invest*, 123(3): 980-989.
2. **Lamming, D.W.**, Sabatini, D.M., Baur, J.A. (2012). Pharmacologic means of extending lifespan. *J Clin Exp Pathol* S4:002. doi:10.4172/2161-0681.S4-002
3. **Lamming, D.W.** and Sabatini, D.M. (2011). A Radical Role for TOR in Longevity. *Cell Metab* 13(6): 617-618.
4. **Lamming, D.W.**, Sabatini, D.M. (2010). Regulation of TOR signaling in Mammals. In M. Hall and F. Tamanoi (Eds.), *The Enzymes, Vol. 27* (pp. 21-38). Burlington: Academic Press.
5. **Lamming, D.W.**, Wood, J.G., and Sinclair, D.A. (2004). Small molecules that regulate lifespan: evidence for xenohormesis. *Mol Microbiol* 53(4): 1003-1009.

Patents:

1. Benson, J.D., Vincent, S.M., Brasher, B.B., Miao, Z., **Lamming, D.** Methods and compositions for identifying peptide aptamers capable of altering a cell phenotype. US Pat. Appl. 10/833,951, filed Apr 28, 2004.
2. Sinclair, D.A., Howitz, K.T., Zipkin, R.E., Bitterman, K.J., **Lamming, D.W.** Compositions for manipulating the lifespan and stress response of cells and organisms. US Patent 7,544,497, issued Jun 9, 2009.

Selected Talks and Seminars:

American Aging Association, June 2013, "Depletion of mTORC2 Impairs the Health and Longevity of Male, but not Female Mice."

Keystone Symposia: Diabetes, January 2013, "Depletion of mTORC2 impairs the health and longevity of mice independently of effects on hepatic glucose output."

Cold Spring Harbor Molecular Genetics of Aging, October 2012, "Depletion of mTORC2 impairs the health and longevity of mice."

University of Wisconsin Madison, June 2012, "Separable roles for mTORC1 and mTORC2 in the extension of mammalian lifespan by rapamycin." (Invited).

American Aging Association, June 2012, "Depletion of mTORC2 Impairs the Health and Longevity of Mice."

Brown University, May 2012, "Separable roles for mTORC1 and mTORC2 in the extension of mammalian lifespan by rapamycin" (Invited).

American Aging Association, June 2011, "Depletion of mTOR and mLST8 uncouples longevity from rapamycin-induced changes in glucose homeostasis."

Cell Symposia: Metabolism and Aging, March 2011, “The paradoxical effects of rapamycin on lifespan and diabetes.”

American Federation for Aging Research Symposium, October 2010, “mTOR, Rapamycin, and Longevity: A tale of two complexes.”

Cold Spring Harbor Molecular Genetics of Aging, October 2008, “mTOR signaling in mammalian health and longevity.”

American Aging Association Annual Meeting, June 2007, “Calorie restriction and TOR signaling converge on sirtuin-mediated lifespan extension in *Saccharomyces cerevisiae*.”

Teaching Experience:

9/12-12/12 Instructor, Advanced Undergraduate Seminar, Massachusetts Institute of Technology
Supervisor: H. Robert Horvitz

9/03-12/03 Teaching Assistant, BCMP 200: Molecular Biology, Harvard Medical School
Instructors: Stephen Buratowski and Johannes Walter

Research Mentor to 3 undergraduate students and 1 graduate student
Feng Chen (Fall 2004 – Spring 2006)
Joseph Torella (Summer 2005 – Spring 2007)
Keyman Kim (Summer 2006 – Summer 2007)
Mohammed Soliman (Summer 2011)

Research Support:

Ongoing Research Support:

1K99AG041765 Dudley Lamming (PI) 9/30/12-8/31/14
NIH/NIA Pathway to Independence (PI) Award (K99/R00) “The *in vivo* regulation of glucose homeostasis and lifespan by mTORC2.” Role: PI

Completed Research Support:

F32AG032833 Dudley Lamming (PI) 12/1/08-11/30/11
NIH/NIA Ruth L. Kirschstein National Research Service Award (F32) “Mammalian Target of Rapamycin (mTOR) signaling in health and longevity.” Role: PI

Mentor-Based Postdoctoral Fellow Award David Sabatini (PI) 12/1/11-03/31/12
American Diabetes Association “mTOR signaling in the control of glucose homeostasis.” Role:
Postdoctoral fellow

Charles A. King Trust Postdoctoral Fellowship Dudley Lamming (PI) 7/1/12-9/29/12
“Mammalian Target of Rapamycin Complex 2 signaling in aging and the response to calorie restriction.”
Role: PI

Julie Martin Mid-Career Award in Aging David Sabatini (PI) 7/1/09-6/30/13
American Federation for Aging Research “Mammalian Target of Rapamycin (mTOR) Signaling in Health and Longevity.” Role: Postdoctoral fellow