

## PROGRESS REPORT PUBLICATION LIST

### ANALYTICAL PHARMACOLOGY AND DRUG EVALUATION CORE

1. Fok WC, Bokov A, Gelfond J, Yu Z, Zhang Y, Doderer M, Chen Y, Javors M, Wood WH, 3rd, Zhang Y, Becker KG, Richardson A, Perez VI. Combined treatment of rapamycin and dietary restriction has a larger effect on the transcriptome and metabolome of liver. *Aging Cell*. 2014;13(2):311-9. Epub 2013/12/07. doi: 10.1111/accel.12175. PubMed PMID: 24304444; PMCID: PMC3989927.
2. Hasty P, Livi CB, Dodds SG, Jones D, Strong R, Javors M, Fischer KE, Sloane L, Murthy K, Hubbard G, Sun L, Hurez V, Curiel TJ, Sharp ZD. eRapa restores a normal life span in a FAP mouse model. *Cancer Prev Res (Phila)*. 2014;7(1):169-78. Epub 2013/11/28. doi: 10.1158/1940-6207.CAPR-13-0299. PubMed PMID: 24282255; PMCID: PMC4058993.
3. Miller RA, Harrison DE, Astle CM, Fernandez E, Flurkey K, Han M, Javors MA, Li X, Nadon NL, Nelson JF, Pletcher S, Salmon AB, Sharp ZD, Van Roekel S, Winkleman L, Strong R. Rapamycin-mediated lifespan increase in mice is dose and sex dependent and metabolically distinct from dietary restriction. *Aging Cell*. 2014;13(3):468-77. Epub 2013/12/18. doi: 10.1111/accel.12194. PubMed PMID: 24341993; PMCID: PMC4032600.
4. Ferguson AA, Bilonick RA, Buchanich JM, Marsh GM, Fisher AL. How Well Do Raters Agree on the Development Stage of *Caenorhabditis elegans*? *PLoS One*. 2015;10(7):e0132365. Epub 2015/07/15. doi: 10.1371/journal.pone.0132365. PubMed PMID: 26172989; PMCID: PMC4501796.
5. Laberge RM, Sun Y, Orjalo AV, Patil CK, Freund A, Zhou L, Curran SC, Davalos AR, Wilson-Edell KA, Liu S, Limbad C, Demaria M, Li P, Hubbard GB, Ikeno Y, Javors M, Desprez PY, Benz CC, Kapahi P, Nelson PS, Campisi J. MTOR regulates the pro-tumorigenic senescence-associated secretory phenotype by promoting IL1A translation. *Nat Cell Biol*. 2015;17(8):1049-61. Epub 2015/07/07. doi: 10.1038/ncb3195. PubMed PMID: 26147250; PMCID: PMC4691706.
6. Zhang N, Liang H, Farese RV, Li J, Musi N, Hussey SE. Pharmacological TLR4 Inhibition Protects against Acute and Chronic Fat-Induced Insulin Resistance in Rats. *PLoS One*. 2015;10(7):e0132575. Epub 2015/07/22. doi: 10.1371/journal.pone.0132575. PubMed PMID: 26196892; PMCID: PMC4510579.
7. Ross C, Salmon A, Strong R, Fernandez E, Javors M, Richardson A, Tardif S. Metabolic consequences of long-term rapamycin exposure on common marmoset monkeys (*Callithrix jacchus*). *Aging (Albany NY)*. 2015;7(11):964-73. Epub 2015/11/17. doi: 10.18632/aging.100843. PubMed PMID: 26568298; PMCID: PMC4694066.
8. Tardif S, Ross C, Bergman P, Fernandez E, Javors M, Salmon A, Spross J, Strong R, Richardson A. Testing efficacy of administration of the antiaging drug rapamycin in a nonhuman primate, the common marmoset. *J Gerontol A Biol Sci Med Sci*. 2015;70(5):577-87. Epub 2014/07/21. doi: 10.1093/gerona/glu101. PubMed PMID: 25038772; PMCID: PMC4400395.
9. Cai L, Fisher AL, Huang H, Xie Z. CRISPR-mediated genome editing and human diseases. *Genes Dis*. 2016;3(4):244-51. Epub 2016/08/30. doi: 10.1016/j.gendis.2016.07.003. PubMed PMID: 30258895; PMCID: PMC6150104.
10. Dodds SG, Livi CB, Parihar M, Hsu HK, Benavides AD, Morris J, Javors M, Strong R, Christy B, Hasty P, Sharp ZD. Adaptations to chronic rapamycin in mice. *Pathobiol Aging Age Relat Dis*. 2016;6:31688. Epub 2016/05/31. doi: 10.3402/pba.v6.31688. PubMed PMID: 27237224; PMCID: PMC4884683.
11. Ipson BR, Fisher AL. Roles of the tyrosine isomers meta-tyrosine and ortho-tyrosine in oxidative stress. *Ageing Res Rev*. 2016;27:93-107. Epub 2016/04/05. doi: 10.1016/j.arr.2016.03.005. PubMed PMID: 27039887; PMCID: PMC4841466.
12. Keith SA, Maddux SK, Zhong Y, Chinchankar MN, Ferguson AA, Ghazi A, Fisher AL. Graded Proteasome Dysfunction in *Caenorhabditis elegans* Activates an Adaptive Response Involving the Conserved SKN-1 and ELT-2 Transcription Factors and the Autophagy-Lysosome Pathway. *PLoS Genet*. 2016;12(2):e1005823. Epub 2016/02/02. doi: 10.1371/journal.pgen.1005823. PubMed PMID: 26828939; PMCID: PMC4734690.
13. Munkacsy E, Khan MH, Lane RK, Borrer MB, Park JH, Bokov AF, Fisher AL, Link CD, Rea SL. DLK-1, SEK-3 and PMK-3 Are Required for the Life Extension Induced by Mitochondrial Bioenergetic Disruption in *C. elegans*. *PLoS Genet*. 2016;12(7):e1006133. Epub 2016/07/16. doi: 10.1371/journal.pgen.1006133. PubMed PMID: 27420916; PMCID: PMC4946786.
14. Sataranatarajan K, Ikeno Y, Bokov A, Feliens D, Yalamanchili H, Lee HJ, Mariappan MM, Tabatabai-Mir H, Diaz V, Prasad S, Javors MA, Ghosh Choudhury G, Hubbard GB, Barnes JL, Richardson A, Kasinath BS. Rapamycin Increases Mortality in db/db Mice, a Mouse Model of Type 2 Diabetes. *J Gerontol A Biol Sci*

- Med Sci. 2016;71(7):850-7. Epub 2015/10/08. doi: 10.1093/gerona/glv170. PubMed PMID: 26442901; PMCID: PMC4906320.
15. Strong R, Miller RA, Antebi A, Astle CM, Bogue M, Denzel MS, Fernandez E, Flurkey K, Hamilton KL, Lamming DW, Javors MA, de Magalhaes JP, Martinez PA, McCord JM, Miller BF, Muller M, Nelson JF, Ndukum J, Rainger GE, Richardson A, Sabatini DM, Salmon AB, Simpkins JW, Steegenga WT, Nadon NL, Harrison DE. Longer lifespan in male mice treated with a weakly estrogenic agonist, an antioxidant, an alpha-glucosidase inhibitor or a Nrf2-inducer. *Aging Cell*. 2016;15(5):872-84. Epub 2016/06/18. doi: 10.1111/ace.12496. PubMed PMID: 27312235; PMCID: PMC5013015.
  16. Baluk P, Yao LC, Flores JC, Choi D, Hong YK, McDonald DM. Rapamycin reversal of VEGF-C-driven lymphatic anomalies in the respiratory tract. *JCI Insight*. 2017;2(16). Epub 2017/08/18. doi: 10.1172/jci.insight.90103. PubMed PMID: 28814666; PMCID: PMC5621869.
  17. Lin AL, Jahrling JB, Zhang W, DeRosa N, Bakshi V, Romero P, Galvan V, Richardson A. Rapamycin rescues vascular, metabolic and learning deficits in apolipoprotein E4 transgenic mice with pre-symptomatic Alzheimer's disease. *J Cereb Blood Flow Metab*. 2017;37(1):217-26. Epub 2016/01/02. doi: 10.1177/0271678X15621575. PubMed PMID: 26721390; PMCID: PMC5167110.
  18. Qi W, Gutierrez GE, Gao X, Dixon H, McDonough JA, Marini AM, Fisher AL. The omega-3 fatty acid alpha-linolenic acid extends *Caenorhabditis elegans* lifespan via NHR-49/PPARalpha and oxidation to oxylipins. *Aging Cell*. 2017;16(5):1125-35. Epub 2017/08/05. doi: 10.1111/ace.12651. PubMed PMID: 28772063; PMCID: PMC5595674.
  19. Siegmund SE, Yang H, Sharma R, Javors M, Skinner O, Mootha V, Hirano M, Schon EA. Low-dose rapamycin extends lifespan in a mouse model of mtDNA depletion syndrome. *Hum Mol Genet*. 2017;26(23):4588-605. Epub 2017/10/04. doi: 10.1093/hmg/ddx341. PubMed PMID: 28973153; PMCID: PMC5886265.
  20. Blanco CL, Gastaldelli A, Anzueto DG, Winter LA, Seidner SR, McCurnin DC, Liang H, Javors MA, DeFronzo RA, Musi N. Effects of intravenous AICAR (5-aminoimidazole-4-carboximide riboside) administration on insulin signaling and resistance in premature baboons, *Papio sp.* *PLoS One*. 2018;13(12):e0208757. Epub 2018/12/13. doi: 10.1371/journal.pone.0208757. PubMed PMID: 30540820; PMCID: PMC6291136.
  21. Fang Y, Hill CM, Darcy J, Reyes-Ordóñez A, Arauz E, McFadden S, Zhang C, Osland J, Gao J, Zhang T, Frank SJ, Javors MA, Yuan R, Kopchick JJ, Sun LY, Chen J, Bartke A. Effects of rapamycin on growth hormone receptor knockout mice. *Proc Natl Acad Sci U S A*. 2018;115(7):E1495-E503. Epub 2018/01/31. doi: 10.1073/pnas.1717065115. PubMed PMID: 29378959; PMCID: PMC5816183.
  22. Ipson BR, Fletcher MB, Espinoza SE, Fisher AL. Identifying Exosome-Derived MicroRNAs as Candidate Biomarkers of Frailty. *The Journal of frailty & aging*. 2018;7(2):100-3. Epub 2018/05/10. doi: 10.14283/jfa.2017.45. PubMed PMID: 29741193; PMCID: PMC6384524.
  23. Jahrling JB, Lin AL, DeRosa N, Hussong SA, Van Skike CE, Girotti M, Javors M, Zhao Q, Maslin LA, Asmis R, Galvan V. mTOR drives cerebral blood flow and memory deficits in LDLR(-/-) mice modeling atherosclerosis and vascular cognitive impairment. *J Cereb Blood Flow Metab*. 2018;38(1):58-74. Epub 2017/05/18. doi: 10.1177/0271678X17705973. PubMed PMID: 28511572; PMCID: PMC5757441.
  24. Kang D, Kirienko DR, Webster P, Fisher AL, Kirienko NV. Pyoverdine, a siderophore from *Pseudomonas aeruginosa*, translocates into *C. elegans*, removes iron, and activates a distinct host response. *Virulence*. 2018;9(1):804-17. Epub 2018/03/14. doi: 10.1080/21505594.2018.1449508. PubMed PMID: 29532717; PMCID: PMC5955448.
  25. Kraig E, Linehan LA, Liang H, Romo TQ, Liu Q, Wu Y, Benavides AD, Curiel TJ, Javors MA, Musi N, Chiodo L, Koek W, Gelfond JAL, Kellogg DL, Jr. A randomized control trial to establish the feasibility and safety of rapamycin treatment in an older human cohort: Immunological, physical performance, and cognitive effects. *Exp Gerontol*. 2018;105:53-69. Epub 2018/02/07. doi: 10.1016/j.exger.2017.12.026. PubMed PMID: 29408453; PMCID: PMC5869166.
  26. Weiss R, Fernandez E, Liu Y, Strong R, Salmon AB. Metformin reduces glucose intolerance caused by rapamycin treatment in genetically heterogeneous female mice. *Aging (Albany NY)*. 2018;10(3):386-401. Epub 2018/03/27. doi: 10.18632/aging.101401. PubMed PMID: 29579736; PMCID: PMC5892694.
  27. Ipson BR, Green RA, Wilson JT, Watson JN, Faull KF, Fisher AL. Tyrosine aminotransferase is involved in the oxidative stress response by metabolizing meta-tyrosine in *Caenorhabditis elegans*. *J Biol Chem*. 2019;294(24):9536-54. Epub 2019/05/03. doi: 10.1074/jbc.RA118.004426. PubMed PMID: 31043480; PMCID: PMC6579467.
  28. Sills AM, Artavia JM, DeRosa BD, Ross CN, Salmon AB. Long-term treatment with the mTOR inhibitor rapamycin has minor effect on clinical laboratory markers in middle-aged marmosets. *Am J Primatol*. 2019;81(2):e22927. Epub 2018/10/13. doi: 10.1002/ajp.22927. PubMed PMID: 30311681; PMCID: PMC6415526.

29. Wang H, Webster P, Chen L, Fisher AL. Cell-autonomous and non-autonomous roles of daf-16 in muscle function and mitochondrial capacity in aging *C. elegans*. *Aging (Albany NY)*. 2019;11(8):2295-311. Epub 2019/04/25. doi: 10.18632/aging.101914. PubMed PMID: 31017874; PMCID: PMC6520005.
30. Xu A, Zhang Z, Ko SH, Fisher AL, Liu Z, Chen L. Microtubule regulators act in the nervous system to modulate fat metabolism and longevity through DAF-16 in *C. elegans*. *Aging Cell*. 2019;18(2):e12884. Epub 2019/01/15. doi: 10.1111/accel.12884. PubMed PMID: 30638295; PMCID: PMC6413656.
31. Fernandez E, Ross C, Liang H, Javors M, Tardif S, Salmon AB. Evaluation of the pharmacokinetics of metformin and acarbose in the common marmoset. *Pathobiol Aging Age Relat Dis*. 2019;9(1):1657756. Epub 2019/09/10. doi: 10.1080/20010001.2019.1657756. PubMed PMID: 31497263; PMCID: PMC6719263.
32. Van Skike CE, Lin AL, Roberts BR, Halloran JJ, Hernandez SF, Cuvillier J, Soto VY, Hussong SA, Javors MA, Hart MJ, Fischer KE, Austad SN, Galvan V. mTOR drives cerebrovascular, synaptic, and cognitive dysfunction in normative aging. *Aging Cell*. In press.