

Publications using Aging Animal Models and Longevity Assessment Core Resources

2020

Dodds SG, Parihar M, Javors M, Nie J, Musi N, Dave Sharp Z, Hasty P. Acarbose improved survival for Apc+/Min mice. *Aging Cell*. 2020 Feb;19(2):e13088. doi: 10.1111/accel.13088. Epub 2020 Jan 6.

Guderyon MJ, Chen C, Bhattacharjee A, Ge G, Fernandez RA, Gelfond JAL, Gorena KM, Cheng CJ, Li Y, Nelson JF, Strong RJ, Hornsby PJ, Clark RA, Li S. Mobilization-based transplantation of young-donor hematopoietic stem cells extends lifespan in mice. *Aging Cell*. 2020 Feb 3:e13110. doi: 10.1111/accel.13110. [Epub ahead of print]

Unikrishnan A, Kurup K, Salmon AB, Richardson A. 2019. Is Rapamycin a Dietary Restriction Mimetic? *J Gerontol A Biol Sci Med Sci*. 75(1):4-13 (2020). PMID: PMC6909904

2019

Allen BD, Liao CY, Shu J, Muglia LJ, Majzoub JA, Diaz V, Nelson JF. 2019. Hyperadrenocorticism of calorie restriction contributes to its anti-inflammatory action in mice. *Aging Cell*. Jun;18(3):e12944. doi: 10.1111/accel.12944. PMC6516174

Apple DM, Mahesula S, Fonseca RS, Zhu C, Kokovay E. 2019 Calorie restriction protects neural stem cells from age-related deficits in the subventricular zone. *Aging (Albany NY)*. 2019 Jan 8;11(1):115-126. doi:10.18632/aging.101731. PMC6339798

Cheng, C. J., J. A. L. Gelfond, R. Strong, J. F. Nelson. 2019. Genetically heterogeneous mice exhibit a female survival advantage that is age and site-specific: Results from a large multi-site study. *Aging Cell*. 23:e12905. doi: 10.1111/accel.12905. [Epub ahead of print]. PMC6516160

Harrison, D. E., R. Strong, S. Alavez, C. M. Astle, J. DiGiovanni, E. Fernandez, K. Flurkey, M. A. Javors, M. Levi, G. J. Lithgow, F. Macchiarini, J. F. Nelson, S. J. Sukoff Rizzo, T. J. Slaga, T. Stearns, J. E. Wilkinson, R. A. Miller. 2019. Acarbose improves health and lifespan in aging HET3 mice. *Aging Cell* 18:e12898. DOI: 10.1111/accel.12898. PMID: 30688027. PMC6413665

Miller, R. A., D. E. Harrison, C. M. Astle, M. A. Bogue, J. Brind, E. Fernandez, K. Flurkey, M. Javors, W. Ladiges, C. Leeuwenburgh, F. Macchiarini, J. Nelson, A. G. Ryazanov, J. Snyder, T. M. Stearns, D. E. Vaughan, and R. Strong. 2019. Glycine supplementation extends lifespan of male and female mice. *Aging Cell* DOI:10.1111/accel.12953. PMC6516426

Smith BJ, Miller RA, Ericsson AC, Harrison DC, Strong R, Schmidt TM. 2019. Changes in the gut microbiome and fermentation products concurrent with enhanced longevity in acarbose-treated mice. *BMC Microbiol*. Jun 13;19(1) PMC6567620

Sills AM, Artavia JM, DeRosa BD, Ross CN, Salmon AB. 2019. Long-term treatment with the mTOR inhibitor rapamycin has minor effect on clinical laboratory markers in middle-aged marmosets. *Am J Primatol*. 2019 Feb;81(2):e22927. doi: 10.1002/ajp.22927. Epub 2018 Oct 12. PMC6415526

Song C, Zhang J, Qi S, Liu Z, Zhang X, Zheng Y, Andersen JP, Zhang W, Strong R, Martinez PA, Musi N, Nie J, Shi Y. 2019. Cardiolipin remodeling by ALCAT1 links mitochondrial dysfunction to Parkinson's diseases. *Aging Cell*. 18(3):e12941 PMC6516155

2018

Cheng CJ, Nelson JF 2018 Physiological basis for sex-specific differences in longevity (2018) *Current Opinion in Physiology* 6:57-64 **PMC in process**

Hook J, Roy S, Williams EG, Mozhui K, Nelson JF, Lu L, Auwerx J, Williams RW 2018 Genetic cartography of longevity in mouse and human: Current landscape and horizons. 2018 *Biochim Biophys Acta* S0925-5539 PMC6066442

Lee, H. J., D. Feliars, J. L. Barnes, S. Oh, G. G. Choudhury, V. Diaz, V. Galvan, R. Strong, J. Nelson, A. Salmon, C. G. Kevil, B. S. Kasinath. 2018. Hydrogen sulfide ameliorates aging-associated changes in the kidney. *Geroscience*. 40:163-176. PMC5964063.

Ross CN, Salmon AB. (2018). Aging research using the common marmoset: Focus on aging interventions. *Nutrition and Healthy Aging*. 0:1-13. Doi. 10.3233/NHA-180046 **PMC in process**

Weiss, R., E. Fernandez, Y. Liu, R. Strong, A. B. Salmon. 2018. Metformin reduces glucose intolerance caused by rapamycin treatment in genetically heterogeneous female mice. *Aging (Albany NY)*. 10:386-401. PMC5892694.

Salmon AB, Dorigatti J, Huber H, Nathanielsz PW. Maternal nutrient restriction in baboons programs later life cellular growth and respiration of cultured skin fibroblasts: a potential model for the study of aging programming interactions. *Geroscience*. 40(3): 269-278, (2018). PMID:PMC6060193

Wu, A., Qiaoxiang Dong, Hui Gao, Yuanshuo Shi, Yuanhong Chen, Fuchuang Zhang, Abhik Bandyopadhyay, Danhan Wang, Karla M. Gorena, Changjiang Huang, Suzette Tardif, Peter W. Nathanielsz, and Lu-Zhe Sun. (2016). Characterization of mammary epithelial stem/progenitor cells and their changes with aging in common marmosets *Sci. Rep Jan*;6(32190). PMC4997341

2017

Apple, D. M., & Kokovay, E. (2017). Vascular niche contribution to age-associated neural stem cell dysfunction. *American journal of physiology. Heart and circulatory physiology*, 313(5), H896–H902. doi:10.1152/ajpheart.00154.2017 PMID: PMC5792207

Apple DM, Solano-Fonseca R, Kokovay E. (2017) Neurogenesis in the aging brain. *Biochem Pharmacol*. 2017 Oct 1;141:77-85. doi: 10.1016/j.bcp.2017.06.116. Epub 2017 Jun 16. Review. **PMC in process**

Bai X, Wey MC, Martinez PA, Shi C, Fernandez E, Strong R. 2017. Neurochemical and motor changes in mice with combined mutations linked to Parkinson's disease. *Pathobiol Aging Age Relat Dis*. 5;7(1):1267855 PMC5328310

Zhou J, Chong SY, Lim A, Singh BK, Sinha RA, Salmon AB, Yen PM, Changes in macroautophagy, chaperone-mediated autophagy, and mitochondrial metabolism in murine skeletal and cardiac muscle during aging. *Aging (Albany, NY)* 9(2):583-599. (2017). PMID: PMC5361683.

2016

Benmansour, S., Arroyo, L. D., & Frazer, A. (2016). Comparison of the Antidepressant-Like Effects of Estradiol and That of Selective Serotonin Reuptake Inhibitors in Middle-Aged Ovariectomized Rats. *Frontiers in aging neuroscience*, 8, 311. doi:10.3389/fnagi.2016.00311 PMID: PMC5174113

Dodds SG, Livi CB, Parihar M, Hsu HK, Benavides AD, Morris J, Javors M, Strong R, Christy B, Hasty P, Sharp ZD. (2016) Adaptations to chronic rapamycin in mice. *Pathobiol Aging Age Relat Dis*.;6:31688. PMC4884683

Dong, Q., Hui Gao, Yuanshuo Shi, Fuchuang Zhang, Xiang Gu, Anqi Wu, Danhan Wang, Yuanhong Chen, Abhik Bandyopadhyay, I-Tien Yeh, Benjamin J. Daniel, Yidong Chen, Yi Zou, Vivienne L. Rebel, Christi A.

Walter, Jianxin Lu, Changjiang Huang, Lu-Zhe Sun. (2016) Aging is associated with an expansion of CD49^{hi} mammary stem cells that show a decline in function and increased transformation potential *Aging* Jan;8(11):2754-2770. PMC5191868

Lelegren M, Liu Y, Ross C, Tardif S, Salmon AB. (2016). Pharmaceutical inhibition of mTOR in the common marmoset: effect of rapamycin on regulators of proteostasis in a non-human primate. *Pathobiol Aging Age Relat Dis.* 6:31793. PMC4920937

Salmon AB. (2016). Moving toward 'common' use of the marmoset as a non-human primate aging model. *Pathobiol Aging Age Relat Dis.* 6:32758. PMC4958916

Solano Fonseca, Rene, Swetha Mahesula, Deana M. Apple, Rekha Raghunathan, Allison Dugan, Astrid Cardona, Jason O'Connor, and Erzsebet Kokovay. Neurogenic Niche Microglia Undergo Positional Remodeling and Progressive Activation Contributing to Age-Associated Reductions in Neurogenesis (2016) *Stem Cells and Development* 25: 542-555. PMC4817564

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, Mcord 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 ((2016) Longer lifespan in male mice treated with a weakly estrogenic agonist, an antioxidant, an α -glucosidase inhibitor or a NRF2-inducer. *Aging Cell* PMC5013015

Salmon AB, Kim G, Liu C, Wren JD, Georgescu C, Richardson A, Levine RL, Effects of transgenic methionine sulfoxide reductase A (MsrA) expression on lifespan and age-dependent changes in metabolic function in mice. *Redox Biol* 10:251-256. (2016). PMID: PMC5099276.

Wu A, Dong Q, Gao H, Shi Y, Chen Y, Zhang F, Bandyopadhyay A, Wang D, Gorena KM, Huang C, Tardif S, Nathanielsz PW, Sun L. Characterization of mammary epithelial stem/progenitor cells and their changes with aging in common marmosets *Sci. Rep* 6:32190. (2016). PMID: PMC4997341

Liu J, Akanuma N, Liu C, Najj A, Halff GA, Washburn WK, Sun L, Wang P, TGF- β 1 promotes acinar to ductal metaplasia of human pancreatic acinar cells. *Sci Rep.* 6:30904. (2016). PMID: PMC4971483

Dong Q, Gao H, Shi Y, Zhang F, Gu X, Wu A, Wang D, Chen Y, Bandyopadhyay A, Yeh IT, Daniel BJ, Chen Y, Zou Y, Rebel VL, Walter CA, Lu J, Huang C, Sun LZ. *Aging (Albany NY).* 8(11):2754-2776. (2016). PMID: PMC5191868.

2015

Bai X, Wey MC, Fernandez E, Hart MJ, Gelfond J, Bokov AF, Rani S, Strong R. (2015) Rapamycin improves motor function, reduces 4-hydroxynonenal adducted protein in brain, and attenuates synaptic injury in a mouse model of synucleinopathy. *Pathobiol Aging Age Relat Dis.*;5:28743. PMC4549373

Ross C, Salmon A, Strong R, Fernandez E, Javors M, Richardson A, Tardif S. (2015) Metabolic consequences of long-term rapamycin exposure on common marmoset monkeys (*Callithrix jacchus*). *Aging (Albany NY).*;7(11):964-73. PMC4694066

Sataranatarajan, K., Y. Ikeno, A. Bokov, D. Feliars, H. Yalamanchili, H. J. Lee, M. M. Mariappan Tabatabai-Mir H, Diaz V, Prasad S, Javors MA, Ghosh Choudhury G, Hubbard GB, Barnes JL, Richardson A, Kasinath BS.. (2015) "Rapamycin Increases Mortality in db/db Mice, a Mouse Model of Type 2 Diabetes." *The journals of gerontology. Series A, Biological sciences and medical sciences.* PMC4906320

Liu R, Pulliam DA, Liu Y, Salmon AB, Dynamic differences in oxidative stress and the regulation of metabolism with age in visceral versus subcutaneous adipose. *Redox Biol* 6:401-408. (2015). PMID: PMC4572386

Salmon AB, Lerner C, Ikeno Y, Motch Perrine S, McCarter R, Sell C. Altered metabolism and resistance to obesity in long-lived mice producing reduced levels of IGF-1. *Am J Physiol Endo Metabol* 308(7):E545-E553. (2015). PMID: PMC4385875.

Zhang Y, Fischer KE, Soto V, Liu Y, Sosnowska D, Richardson A, Salmon AB#, Obesity-induced oxidative stress, accelerated functional decline with age and increased mortality in mice. *Arch Biochem Biophys* 576:39-48. (2015). PMID: PMC4456198.

Tardif S, Ross C, Bergman P, Fernandez E, Javors M, Salmon A, Spross J, Strong R, Richardson A. Testing efficacy of administration of the anti-aging drug rapamycin in a non-human primate, the common marmoset. *J Gerontol A Biol Sci Med Sci*. 70(5):577-588. (2015). PMID: PMC4400395

2014

Harrison, D. E., Strong, R., Allison, D. B., Ames, B. N., Astle, C. M., Atamna, H., ... Miller, R. A. (2014). Acarbose, 17- α -estradiol, and nordihydroguaiaretic acid extend mouse lifespan preferentially in males. *Aging cell*, 13(2), 273–282. doi:10.1111/ace.12170 PMID: PMC3954939

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, Winkelman L, Strong R. ((2014) Rapamycin-mediated lifespan increase in mice is dose and sex dependent and metabolically distinct from dietary restriction. *Aging Cell* 13:468-77 PMID: 24341993. PMID: PMC4032600.

Liu Y, Diaz V, Fernandez E, Strong R, Ye L, Baur JA, Lamming DA, Richardson A, Salmon AB#. Rapamycin-induced metabolic defects are reversible in both lean and obese mice. *Aging (Albany, NY)* 6(9):742-754. (2014). PMID: PMC4221917.

Lorenzini A, Salmon AB, Lerner C, Torres C, Ikeno Y, Motch S, McCarter R, Sell C. Mice producing reduced levels of insulin-like growth factor type 1 display an increase in maximum, but not mean, lifespan. *J Gerontol A Biol Sci Med Sci* 69(4): 410-419. (2014). PMID: PMC3968822.

Yu Z, Fok WC, Salmon AB, Coles A, Richardson A, Pérez VI. Rapamycin and dietary restriction induce metabolically distinctive changes in mouse liver. *J Gerontol A Biol Sci Med Sci* 70(4):410-420. (2015). PMID: PMC4447794.

Fok WC, Chen Y, Bokov A, Zhang Y, Salmon AB, Diaz V, Javors M, Bronikowski, A, Wood WH III, Zhang Y, Becker KG, Pérez VI, Richardson A, Mice fed rapamycin have increase in lifespan associated with major changes in the transcriptome. *Plos ONE* 9(1): e83988. (2014). PMID: PMC3883653.