

Douglas R. Martin, PhD
Selected Publications

Rockwell HE, McCurdy VJ, Eaton SC, Wilson DU, Johnson AK, Bradbury AM, Gray-Edwards HL, Baker HJ, Hudson JA, Cox NR, Sena-Esteves M, Seyfried TN, **Martin DR**. AAV-mediated gene delivery corrects lysosomal storage in the feline central nervous system. *ASN Neuro*, 2014. (In preparation)

Larsen JM, **Martin DR**, Byrne ME. Effect of inulin and mannitol on the formation and maintenance of the diblock copolymer polyethylene glycol-b-poly(lactic acid). *Biomacromolecules*, 2014. (In preparation)

Bradbury AM, Peterson TA, Wells SZ, McCurdy VJ, Wolfe KG, Dennis JC, Brunson BL, Gray-Edwards HL, Randle AN, Morrison EE, Cox NR, Baker HJ, Sena-Esteves M, **Martin DR**. AAV-mediated gene delivery attenuates neuroinflammation associated with feline Sandhoff disease. *Human Molecular Genetics*, 2014. (In preparation)

Gray-Edwards HL, Brunson BL, Holland M, Hespel A-M, Bradbury AM, McCurdy VJ, Beadlescomb PM, Randle AN, Salibi N, Denney TS, Beyers RJ, Johnson AK, Montgomery RD, Wilson DU, Hudson JA, Cox NR, Baker HJ, Sena-Esteves M, **Martin DR**. Mucopolysaccharidosis-like phenotype in feline Sandhoff disease and partial correction after AAV gene therapy. *Journal of Inherited Metabolic Disease*, 2014. (Submitted for publication)

McCurdy VJ, Rockwell HE, Arthur JA, Bradbury AM, Johnson AK, Randle AN, Brunson BL, Hwang M, Gray-Edwards HL, Morrison NE, Johnson JA, Cox NR, Baker HJ, Seyfried TN, Sena-Esteves M, **Martin DR**. Widespread correction of central nervous system disease following intracranial gene therapy in a feline model of Sandhoff disease. *Gene Therapy*, 2014. (Accepted for publication)

Bradbury AM, Heather Gray-Edwards H, McCurdy VJ, Shirley JL, Colaco AN, Randle AN, Christopherson PW, Bird AC, De Pompa NL, Sorjonen DC, Brunson BL, Jeyakumar M, Platt FM, Cox NR, Baker HJ, Sena-Esteves M, **Martin DR**. Biomarkers for disease progression and AAV therapeutic efficacy in feline Sandhoff disease. *Experimental Neurology*, 2014. (Accepted for publication)

Samoylov AM, Napier ID, Morrison NE, **Martin DR**, Cox NR, Samoylova TI. Molecular cloning, sequencing, and distribution of feline gonadotropin releasing hormone receptor (GnRHR) and re-sequencing of canine GnRHR. *Theriogenology*, 2014. (Accepted for publication)

McCurdy VJ, Johnson AK, Gray-Edwards HL, Randle AN, Brunson BL, Morrison NE, Salibi N, Johnson JA, Hwang M, Beyers RJ, Leroy SG, Maitland S, Denney TS, Cox NR, Baker HJ, Sena-Esteves M, **Martin DR**. Sustained normalization of neurologic disease after intracranial gene therapy in a feline model. *Science Translational Medicine* 6:231ra48 (2014). doi: 10.1126/scitranslmed.3007733. PMID 24718858.

Larsen JM, **Martin DR**, Byrne ME. Recent advances in delivery through the blood-brain barrier. *Current Topics in Medicinal Chemistry* 14:1148-1160, 2014. PMID 24678707

Gray-Edwards HL, Salibi N, Josephson EM, Hudson JA, Cox NR, Randle AN, McCurdy VJ, Bradbury AM, Wilson DU, Beyers RJ, Denney TS, **Martin DR**. High resolution MRI anatomy of the cat brain at 3Tesla. *Journal of Neuroscience Methods* 227:10-17, 2014. PMID 24525327

Bradbury AM, Cochran JN, McCurdy VJ, Johnson AK, Brunson BL, Gray-Edwards H, Leroy SG, Hwang, Randle AN, Jackson LS, Morrison NE, Baek RC, Seyfried TN, Cheng SH, Cox NR, Baker HJ, Cachón-González MB, Cox TM, Sena-Esteves M, **Martin DR**. Therapeutic response in feline Sandhoff disease despite immunity to intracranial gene therapy. *Molecular Therapy* 21(7):1306-1315, 2013. PMID 23689599

Rigat BA, Tropak MB, Buttner J, Crushell E, Benedict D, Callahan JW, **Martin DR**, Mahuran DJ. Evaluation of N-nonyl-deoxygalactonojirimycin as a pharmacological chaperone for human GM1 gangliosidosis leads to identification of a feline model suitable for testing enzyme enhancement therapy. *Molecular Genetics and Metabolism* 107(1-2):203-212, 2012.

Baek RC, **Martin DR**, Cox NR, Seyfried TN. Comparative analysis of brain lipids in mice, cats, and humans with Sandhoff disease. *Lipids* 44:197-205, 2009.

Wang L, Shi J, van Ginkel FW, Lan L, Niemeyer G, **Martin DR**, Snyder EY, Cox NR. Neural stem/progenitor cells modulate immune responses by suppressing T lymphocytes with nitric oxide and prostaglandin E2. *Experimental Neurology* 216(1):177-183, 2009.

Bradbury AM, Morrison NE, Hwang M, Cox NR, Baker HJ, **Martin DR**. Neurodegenerative lysosomal storage disease in European Burmese cats with hexosaminidase beta-subunit deficiency. *Mol Genet Metab* 97:53-59, 2009.

Wang L, Shi J, van Ginkel FW, Lan L, Niemeyer G, **Martin DR**, Snyder EY, Cox NR. Neural stem/progenitor cells modulate immune responses by suppressing T lymphocytes with nitric oxide and prostaglandin E2. *Exp Neurol* 216(1):177-183, 2009.

Baek RC, **Martin DR**, Cox NR, Seyfried TN. Comparative analysis of brain lipids in mice, cats, and humans with Sandhoff disease. *Lipids* 44:197-205, 2008.

Vig K, Herzog R, **Martin D**, Moore EG, Dennis VA, Pillai S, Singh SR. Recombinant adeno-associated virus as vaccine delivery vehicles. *Gene Ther Mol Biol* 12:277-292, 2008.

Martin DR, Rigat BA, Foureman P, Varadarajan GS, Hwang M, Krum BK, Smith BF, Callahan JW, Mahuran DJ, Baker HJ. Molecular consequences of the pathogenic mutation in feline GM1 gangliosidosis. *Molec Genet Metab* 94:212-221, 2008.

Samoylova TI, **Martin DR**, Morrison NE, Hwang M, Cochran A, Samoylov A, Baker HJ, Cox NR. Generation and characterization of recombinant feline β -galactosidase for preclinical enzyme replacement therapy studies in GM1 gangliosidosis. *Metab Brain Dis* 23(2):161-73, 2008. Wang L, **Martin DR**, Baker HJ, Gentry AS, Zinn KR, Kappes JC Snyder EY, Cox NR.

Neural progenitor cell transplantation and imaging in a large animal model. *Neurosci Res* 59: 327-340, 2007.

Martin DR, Cox NR, Morrison NE, Kennamer DM, Peck SL, Dodson AN, Gentry AS, Griffin B, Rolsma MD, Baker HJ. Mutation of the GM2 activator protein in a feline model of GM2 gangliosidosis. *Acta Neuropathol* 110(5):443-50, 2005.

Martin DR, Krum BK, Varadarajan GS, Hathcock TL, Smith BF, Baker HJ. An inversion of 25 base pairs causes feline GM2 gangliosidosis variant 0. *Exp Neurol* 187:30-37, 2004.

Martin DR, Cox NR, Hathcock TL, Niemeyer GP, Baker HJ. Isolation and characterization of multipotential mesenchymal stem cells from feline bone marrow. *Exp Hematol* 30:879-886, 2002.

Book Chapters:

Golebiowski D, Bradbury AM, Kwon CS, van der Bom IMJ, Stoica L, Johnson AK, Wilson DU, Gray-Edwards HL, Hudson JA, Johnson JA, Randle AN, Whitlock BK, Sartin JL, Kühn AL, Gounis M, Asaad W, **Martin DR**, Sena-Esteves M. AAV gene therapy strategies for lysosomal storage disorders with central nervous system involvement. In *Neuromethods: Gene Delivery and Therapy for Neurological Disorders*, Bo X and Verhaagen J (eds.), 2014.

Seyfried TN, Rockwell HE, Heinicke KA, **Martin DR**, Sena-Esteves M. Ganglioside storage diseases: on the road to management. In *Advances in Neurobiology: Glycobiology of the Nervous System*, Shengrund (ed.), 9:485-499, 2014.

Baker HJ, Smith BF, **Martin DR**, Foureman P. Molecular diagnosis of gangliosidoses: a model for elimination of inherited diseases in pure breeds. In *Consultations in Feline Internal Medicine*, 4th ed, August JR (ed.), W.B. Saunders (Orlando) 615-620, 2001.