

Cameron Millar, PhD
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North Texas Eye Research Institute
Pharmacology & Neuroscience
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Area of Expertise

My research efforts within the North Texas Eye Research Institute (NTERI) are dedicated to the investigation and further development of the mouse as a useful model for the study of aqueous humor dynamics and primary open-angle glaucoma (POAG). Areas of expertise include studies (in living animals) of: aqueous humor dynamics, intraocular pressure measurement, generation and development of transgenic models of POAG using viral vectors, visualization of the eye using spectral domain ocular coherence tomography (SD-OCT), and electroretinography. Projects currently under way include an investigation, using 5XFAD mice (which express five familial Alzheimer's Disease (AD) mutations) into a possible connection between AD and POAG. I also routinely interact with other NTERI members in a multi-disciplinary manner.

Qualifications

BS in Applied Biology, Glasgow Caledonian University
BS in Applied & Clinical Biochemistry, Glasgow Caledonian University
PhD in Pharmacology, University of Glasgow

Recent Publications

Impaired axonal transport contributes to neurodegeneration in a Cre-inducible mouse model of myocilin-associated glaucoma

Kaipa, B. R., Kasetti, R., Sundaresan, Y., Li, L., Yacoub, S., Millar, J. C., Cho, W., Skowronska-Krawczyk, D., Maddineni, P., Palczewski, K. & Zode, G. S., 10 Mar 2025, In: JCI Insight. 10, 5, e188710.

Lentiviral mediated delivery of CRISPR/Cas9 reduces intraocular pressure in a mouse model of myocilin glaucoma

Patil, S. V., Kaipa, B. R., Ranshing, S., Sundaresan, Y., Millar, J. C., Nagarajan, B., Kiehlbauch, C., Zhang, Q., Jain, A., Searby, C. C., Scheetz, T. E., Clark, A. F., Sheffield, V. C. & Zode, G. S., Dec 2024, In: Scientific Reports. 14, 1, 6958.

Schlemm's canal-selective Tie2/TEK knockdown induces sustained ocular hypertension in adult mice

Schwakopf, J., Romero, C. O., Lopez, N. N., Millar, J. C., Vetter, M. L. & Bosco, A., Nov 2024, In: Experimental eye research. 248, 110114.

Steroid-Induced Ocular Hypertension in Mice Is Differentially Reduced by Selective EP2, EP3, EP4, and IP Prostanoid Receptor Agonists

Sharif, N. A., Millar, J. C., Zode, G. & Ota, T., Mar 2024, In: International journal of molecular sciences. 25, 6, 3328.

Viral vector induced ocular hypertension in mice. Chapter 9, Retinal Ganglion Cells: Methods and Protocols

Millar, C., Sundaresan, Y., Zode, G. S. & Clark, A., 10 Aug 2023, In: Methods in molecular biology (Clifton, N.J.). 2708, p. 77-79 3 p., Chapter 9.

Viral Vector-Induced Ocular Hypertension in Mice

Millar, J. C., Sundaresan, Y., Zode, G. S. & Clark, A. F., 2023, *Methods in Molecular Biology*. Humana Press Inc., p. 77-97 21 p. (Methods in Molecular Biology; vol. 2708).

A Novel Mouse Model of TGFβ2-Induced Ocular Hypertension Using Lentiviral Gene Delivery

Patil, S. V., Kasetti, R. B., Millar, J. C. & Zode, G. S., 1 Jul 2022, In: International journal of molecular sciences. 23, 13, 6883.

Early-Onset Glaucoma in egl1 Mice Homozygous for Pitx2 Mutation

Kodati, B., Merchant, S. A., Cameron Millar, J. & Liu, Y., Mar 2022, In: Biomedicines. 10, 3, 516.

Consensus Recommendation for Mouse Models of Ocular Hypertension to Study Aqueous Humor Outflow and Its Mechanisms

McDowell, C. M., Kizhatil, K., Elliott, M. H., Overby, D. R., van Batenburg-Sherwood, J., Cameron Millar, J., Kuehn, M. H., Zode, G., Acott, T. S., Anderson, M. G., Bhattacharya, S. K., Bertrand, J. A., Borrás, T., Bovenkamp, D. E., Cheng, L., Danias, J., De Ieso, M. L., Du, Y., Faralli, J. A. & Fuchshofer, R. & 60 others, Ganapathy, P. S., Gong, H., Herberg, S., Hernandez, H., Humphries, P., John, S. W. M., Kaufman, P. L., Keller, K. E., Kelley, M. J., Kelly, R. A., Krizaj, D., Kumar, A., Leonard, B. C., Lieberman, R. L., Liton, P., Liu, Y., Liu, K. C., Lopez, N. N., Mao, W., Mavlyutov, T., McDonnell, F., McLellan, G. J., Mzyk, P., Nartey, A., Pasquale, L. R., Patel, G. C., Pattabiraman, P. P., Peters, D. M., Raghunathan, V., Rao, P. V., Rayana, N., Raychaudhuri, U., Reina-Torres, E., Ren, R., Rhee, D., Chowdhury, U. R., Samples, J. R., Griffen Samples, E., Sharif, N., Schuman, J. S., Sheffield, V. C., Stevenson, C. H., Soundararajan, A., Subramanian, P., Sugali, C. K., Sun, Y., Toris, C. B., Torrejon, K. Y., Vahabikashi, A., Vranka, J. A., Wang, T., Willoughby, C. E., Xin, C., Yun, H., Zhang, H. F., Fautsch, M. P., Tamm, E. R., Clark, A. F., Ross Ethier, C. & Daniel Stamer, W., Feb 2022, In: Investigative Ophthalmology and Visual Science. 63, 2, 12.

Effect of ATP-sensitive Potassium Channel Openers on Intraocular Pressure in Ocular Hypertensive Animal Models

Chowdhury, U. R., Millar, J. C., Holman, B. H., Anderson, K. J., Dosa, P. I., Roddy, G. W. & Fautsch, M. P., Feb 2022, In: Investigative Ophthalmology and Visual Science. 63, 2, 15.

Sponsored Projects

Dose-Dependence Study of Dronabinol on Mouse Intraocular Pressure

Pang, I.-H. (PI) & Millar, C. (Col)
Rhodes Pharmaceuticals
25/09/17 → 31/12/17

Effect of Adtech Compounds on

Millar, C. (PI)
AdTech Pharma Inc
1/09/21 → 31/08/26

Effect of Dronabinol Formulations on Mouse Intraocular Pressure

Pang, I.-H. (PI) & Millar, C. (Col)
Rhodes Pharmaceuticals
22/03/15 → 30/06/17

Effect of Injected Visco-Elast

Millar, C. (PI)
Alcon
5/02/25 → 31/07/25

Effect of Repeated Doses of Rhodes Formulations on Mouse Intraocular Pressure

Pang, I.-H. (PI), Millar, C. (Col) & Liu, Y. (Col)
Rhodes Pharmaceuticals
7/06/17 → 31/12/17

Effect of Shire Compound on Mouse Intraocular Pressure and Aqueous Humor Hydrodynamics

Pang, I.-H. (PI), Millar, C. (Col) & Liu, Y. (Col)
Shire, plc
1/10/16 → 30/09/19

Glucocorticoids, Ocular Hypert

Clark, A. (PI) & Millar, C. (Col)
NEI: National Eye Institute
30/09/20 → 31/08/26

Glucocorticoids, Ocular Hypertension, and Glaucoma

Clark, A. (PI) & Millar, C. (Col)

NEI: National Eye Institute

30/09/18 → 31/08/20

Novel Hybrid Molecule with Bot

Millar, C. (Col) & Acharya, S. (PI)

NEI: National Eye Institute

1/03/20 → 31/08/26

Preclinical Evaluation of Graybug Vision Compound

Clark, A. (PI), Tovar-Vidales, T. (Col), Liu, Y. (Col) & Millar, C. (Col)

Graybug Vision, Inc.

5/06/17 → 4/06/19

Strain and Age Survey of Epicleral Venous Pressure, Aqueous Outflow Facility, and Uveoscleral Outflow in the Mouse

Millar, C. (PI)

Intramural Research(UNTHSC)

1/10/13 → 31/08/15

Targeting FMNL2/Rho-GTPase Pat

Clark, A. (Col), Millar, C. (PI), Millar, C. (Col) & Ellis, D. (Col)

NEI: National Eye Institute

1/01/24 → 31/12/25