# Paul J Donaldson

List of Publications by Year
in descending order



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|---|---|---|---|
| 117 papers | 2,770 citations | 201385 27 h-index | 264894 42 g-index |
| 120 all docs | 120 docs citations | 120 times ranked | 1688 citing authors |

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | The Lens Circulation. Journal of Membrane Biology, 2007, 216, 1-16. | 1.0 | 225 |
| 2 | The physiological optics of the lens. Progress in Retinal and Eye Research, 2017, 56, e1-e24. | 7.3 | 102 |
| 3 | Molecular Solutions to Mammalian Lens Transparency. Physiology, 2001, 16, 118-123. | 1.6 | 100 |
| 4 | Spatial differences in gap junction gating in the lens are a consequence of connexin cleavage. European Journal of Cell Biology, 1998, 76, 246-250. | 1.6 | 77 |
| 5 | Insertion of MP20 into lens fibre cell plasma membranes correlates with the formation of an extracellular diffusion barrier. Experimental Eye Research, 2003, 77, 567-574. | 1.2 | 66 |
| 6 | Molecular Characterization of the Cystine/Glutamate Exchanger and the Excitatory Amino Acid Transporters in the Rat Lens. , 2005, 46, 2869. | | 66 |
| 7 | Visualizing ocular lens fluid dynamics using MRI: manipulation of steady state water content and water fluxes. American Journal of Physiology - Regulatory Integrative and Comparative Physiology, 2011, 301, R335-R342. | 0.9 | 61 |
| 8 | Nutritional Strategies to Prevent Lens Cataract: Current Status and Future Strategies. Nutrients, 2019, 11, 1186. | 1.7 | 59 |
| 9 | Glutamate metabolic pathways and retinal function. Journal of Neurochemistry, 2009, 111, 589-599. | 2.1 | 55 |
| 10 | Molecular identification and characterisation of the glycine transporter (GLYT1) and the glutamine/glutamate transporter (ASCT2) in the rat lens. Experimental Eye Research, 2006, 83, 447-455. | 1.2 | 54 |
| 11 | Reconstitution of native-type noncrystalline lens fiber gap junctions from isolated hemichannels.. Journal of Cell Biology, 1994, 126, 1047-1058. | 2.3 | 51 |
| 12 | Gap Junction Processing and Redistribution Revealed by Quantitative Optical Measurements of Connexin46 Epitopes in the Lens. , 2004, 45, 191. | | 51 |
| 13 | Point: A Critical Appraisal of the Lens Circulation Modelâ€"An Experimental Paradigm for Understanding the Maintenance of Lens Transparency?. , 2010, 51, 2303. | | 46 |
| 14 | Regulation of lens volume: Implications for lens transparency. Experimental Eye Research, 2009, 88, 144-150. | 1.2 | 43 |
| 15 | Expression Patterns for Glucose Transporters GLUT1 and GLUT3 in the Normal Rat Lens and in Models of Diabetic Cataract. , 2003, 44, 3458. | | 41 |
| 16 | Vitamin C and the Lens: New Insights into Delaying the Onset of Cataract. Nutrients, 2020, 12, 3142. | 1.7 | 41 |
| 17 | Resolving morphology and antibody labeling over large distances in tissue sections. Microscopy Research and Technique, 2003, 62, 83-91. | 1.2 | 40 |
| 18 | Verification and spatial localization of aquaporin-5 in the ocular lens. Experimental Eye Research, 2013, 108, 94-102. | 1.2 | 40 |

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| 19 | Active Maintenance of the Gradient of Refractive Index Is Required to Sustain the Optical Properties of the Lens. , 2015, 56, 7195. | | 39 |
| 20 | Mapping of Glutathione and Its Precursor Amino Acids Reveals a Role for GLYT2 in Glycine Uptake in the Lens Core. , 2007, 48, 5142. | | 38 |
| 21 | Antioxidant Delivery Pathways in the Anterior Eye. BioMed Research International, 2013, 2013, 1-10. | 0.9 | 38 |
| 22 | MP20, the second most abundant lens membrane protein and member of the tetraspanin superfamily, joins the list of ligands of galectin-3. BMC Cell Biology, 2001, 2, 17. | 3.0 | 37 |
| 23 | Differentiation-dependent modification and subcellular distribution of aquaporin-0 suggests multiple functional roles in the rat lens. Differentiation, 2009, 77, 70-83. | 1.0 | 37 |
| 24 | Molecular Profiling and Cellular Localization of Connexin Isoforms in the Rat Ciliary Epithelium. Experimental Eye Research, 2002, 75, 9-21. | 1.2 | 36 |
| 25 | Confocal Microscopy Reveals Zones of Membrane Remodeling in the Outer Cortex of the Human Lens. , 2009, 50, 4304. | | 36 |
| 26 | Tools to fight the cataract epidemic: A review of experimental animal models that mimic age related nuclear cataract. Experimental Eye Research, 2016, 145, 432-443. | 1.2 | 36 |
| 27 | The Role of Aquaporins in Ocular Lens Homeostasis. International Journal of Molecular Sciences, 2017, 18, 2693. | 1.8 | 36 |
| 28 | Focus on Molecules: The cystine/glutamate exchanger (System xcâˆ’). Experimental Eye Research, 2011, 92, 162-163. | 1.2 | 35 |
| 29 | Connexin Expression Patterns in the Rat Cornea. Cornea, 2003, 22, 457-464. | 0.9 | 34 |
| 30 | Ageâ€dependent changes in glutathione metabolism pathways in the lens: New insights into therapeutic strategies to prevent cataract formationâ€"A review. Clinical and Experimental Ophthalmology, 2020, 48, 1031-1042. | 1.3 | 34 |
| 31 | Localised Fibre Cell Swelling Characteristic of Diabetic Cataract Can Be Induced in Normal Rat Lens Using the Chloride Channel Blocker 5-Nitro-2-(3-Phenylpropylamino) Benzoic Acid. Ophthalmic Research, 1999, 31, 317-320. | 1.0 | 33 |
| 32 | Magnetic resonance and confocal imaging of solute penetration into the lens reveals a zone of restricted extracellular space diffusion. American Journal of Physiology - Regulatory Integrative and Comparative Physiology, 2012, 302, R1250-R1259. | 0.9 | 33 |
| 33 | Quantitative Determination of Gap Junctional Permeability in the Lens Cortex. Journal of Membrane Biology, 1999, 169, 91-102. | 1.0 | 31 |
| 34 | Application of two-photon flash photolysis to reveal intercellular communication and intracellular Ca[sup 2+] movements. Journal of Biomedical Optics, 2003, 8, 418. | 1.4 | 31 |
| 35 | Roles for KCC Transporters in the Maintenance of Lens Transparency. , 2006, 47, 673. | | 31 |
| 36 | Spatial distributions of glutathione and its endogenous conjugates in normal bovine lens and a model of lens aging. Experimental Eye Research, 2017, 154, 70-78. | 1.2 | 30 |

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| 37 | The lens internal microcirculation system delivers solutes to the lens core faster than would be predicted by passive diffusion. American Journal of Physiology - Regulatory Integrative and Comparative Physiology, 2018, 315, R994-R1002. | 0.9 | 30 |
| 38 | The Ciliary Muscle and Zonules of Zinn Modulate Lens Intracellular Hydrostatic Pressure Through Transient Receptor Potential Vanilloid Channels. , 2019, 60, 4416. | | 29 |
| 39 | Spatial distributions of AQP5 and AQP0 in embryonic and postnatal mouse lens development. Experimental Eye Research, 2015, 132, 124-135. | 1.2 | 28 |
| 40 | Verification and spatial mapping of TRPV1 and TRPV4 expression in the embryonic and adult mouse lens. Experimental Eye Research, 2019, 186, 107707. | 1.2 | 28 |
| 41 | Molecular identification and cellular localization of a potential transport system involved in cystine/cysteine uptake in human lenses. Experimental Eye Research, 2013, 116, 219-226. | 1.2 | 27 |
| 42 | Dynamic functional contribution of the water channel AQP5 to the water permeability of peripheral lens fiber cells. American Journal of Physiology - Cell Physiology, 2018, 314, C191-C201. | 2.1 | 27 |
| 43 | Dynamic regulation of GSH synthesis and uptake pathways in the rat lens epithelium. Experimental Eye Research, 2010, 90, 300-307. | 1.2 | 25 |
| 44 | Intracellular ionic activities in the EDL muscle of the mouse. Pflugers Archiv European Journal of Physiology, 1984, 400, 166-170. | 1.3 | 24 |
| 45 | Regional Differences in Cystine Accumulation Point to a Sutural Delivery Pathway to the Lens Core. , 2007, 48, 1253. | | 23 |
| 46 | Visualization of transverse diffusion paths across fiber cells of the ocular lens by small animal MRI. Physiological Measurement, 2009, 30, 1061-1073. | 1.2 | 23 |
| 47 | Characterization of the cystine/glutamate transporter in the outer plexiform layer of the vertebrate retina. European Journal of Neuroscience, 2008, 28, 1491-1502. | 1.2 | 22 |
| 48 | Novel roles for the lens in preserving overall ocular health. Experimental Eye Research, 2017, 156, 117-123. | 1.2 | 22 |
| 49 | MALDI imaging mass spectrometry of Î²â€•and Î³â€crystallins in the ocular lens. Journal of Mass Spectrometry, 2020, 55, e4473. | 0.7 | 22 |
| 50 | Reconstitution of channels from preparations enriched in lens gap junction protein MP70. Journal of Membrane Biology, 1992, 129, 155-65. | 1.0 | 21 |
| 51 | Characterization of Glutathione Uptake, Synthesis, and Efflux Pathways in the Epithelium and Endothelium of the Rat Cornea. Cornea, 2012, 31, 1304-1312. | 0.9 | 21 |
| 52 | Changes to Zonular Tension Alters the Subcellular Distribution of AQP5 in Regions of Influx and Efflux of Water in the Rat Lens. , 2020, 61, 36. | | 21 |
| 53 | Clâ^'Influx into Rat Cortical Lens Fiber Cells Is Mediated by a Clâ^'Conductance That Is Not ClC-2 or -3. , 2004, 45, 4400. | | 19 |
| 54 | Molecular identification of P-glycoprotein: a role in lens circulation?. Investigative Ophthalmology and Visual Science, 2002, 43, 3008-15. | 3.3 | 19 |

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| 55 | Two Distinct Levels of Gap Junction Assembly in Vitro. Journal of Structural Biology, 1993, 110, 28-38. | 1.3 | 18 |
| 56 | Differentiation-dependent changes in the membrane properties of fiber cells isolated from the rat lens. American Journal of Physiology - Cell Physiology, 2008, 294, C1133-C1145. | 2.1 | 18 |
| 57 | Characterization of the Effects of Hyperbaric Oxygen on the Biochemical and Optical Properties of the Bovine Lens. , 2016, 57, 1961. | | 18 |
| 58 | A quantitative map of glutathione in the aging human lens. International Journal of Mass Spectrometry, 2019, 437, 58-68. | 0.7 | 18 |
| 59 | Molecular identification and localization of P2X receptors in the rat lens. Experimental Eye Research, 2008, 86, 844-855. | 1.2 | 17 |
| 60 | Comparison of the expression and spatial localization of glucose transporters in the rat, bovine and human lens. Experimental Eye Research, 2017, 161, 193-204. | 1.2 | 16 |
| 61 | Functional characterisation of glutathione export from the rat lens. Experimental Eye Research, 2018, 166, 151-159. | 1.2 | 16 |
| 62 | Chapter 16: Gating of Gap Junction Channels and Hemichannels in the Lens: A Role in Cataract?. Current Topics in Membranes, 1999, 49, 343-356. | 0.5 | 15 |
| 63 | Molecular identification and cellular localisation of GSH synthesis, uptake, efflux and degradation pathways in the rat ciliary body. Histochemistry and Cell Biology, 2013, 139, 559-571. | 0.8 | 15 |
| 64 | Ocular lens gap junctions: Protein expression, assembly, and structure-function analysis. Microscopy Research and Technique, 1995, 31, 347-356. | 1.2 | 14 |
| 65 | Probing microscopic diffusion by 2-photon flash photolysis: Measurement of isotropic and anisotropic diffusion in lens fiber cells. Microscopy Research and Technique, 2004, 63, 50-57. | 1.2 | 14 |
| 66 | The Phosphoinosotide 3-Kinase Catalytic Subunit p110Î± is Required for Normal Lens Growth. , 2016, 57, 3145. | | 14 |
| 67 | Molecular and functional mapping of regional differences in P2Y receptor expression in the rat lens. Experimental Eye Research, 2008, 87, 137-146. | 1.2 | 13 |
| 68 | Cellular Localization of Glutamate and Glutamine Metabolism and Transport Pathways in the Rat Ciliary Epithelium. , 2011, 52, 3345. | | 13 |
| 69 | Development of an in vivo magnetic resonance imaging and computer modelling platform to investigate the physiological optics of the crystalline lens. Biomedical Optics Express, 2019, 10, 4462. | 1.5 | 12 |
| 70 | A computer model of lens structure and function predicts experimental changes to steady state properties and circulating currents. BioMedical Engineering OnLine, 2013, 12, 85. | 1.3 | 11 |
| 71 | Quantifying Changes in Gap Junction Structure as a Function of Lens Fiber Cell Differentiation. Cell Communication and Adhesion, 2001, 8, 349-353. | 1.0 | 10 |
| 72 | Development of a 3D finite element model of lens microcirculation. BioMedical Engineering OnLine, 2012, 11, 69. | 1.3 | 10 |

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| 73 | Identification, Expression, and Roles of the Cystine/Glutamate Antiporter in Ocular Tissues. Oxidative Medicine and Cellular Longevity, 2020, 2020, 1-10. | 1.9 | 10 |
| 74 | Multi-parametric MRI of the physiology and optics of the in-vivo mouse lens. Magnetic Resonance Imaging, 2020, 70, 145-154. | 1.0 | 10 |
| 75 | Purinergic Receptors in the Rat Lens: Activation of P2X Receptors following Hyperosmotic Stress. , 2010, 51, 4156. | | 9 |
| 76 | Differential membrane redistribution of P2X receptor isoforms in response to osmotic and hyperglycemic stress in the rat lens. Histochemistry and Cell Biology, 2009, 131, 667-680. | 0.8 | 8 |
| 77 | Alterations of Glutamate, Glutamine, and Related Amino Acids in the Anterior Eye Secondary to Ischaemia and Reperfusion. Current Eye Research, 2012, 37, 633-643. | 0.7 | 8 |
| 78 | Fully automated laser ray tracing system to measure changes in the crystalline lens GRIN profile. Biomedical Optics Express, 2017, 8, 4947. | 1.5 | 8 |
| 79 | Age-related spatial differences of human lens UV filters revealed by negative ion mode MALDI imaging mass spectrometry. Experimental Eye Research, 2019, 184, 146-151. | 1.2 | 8 |
| 80 | Age-Dependent Changes in Total and Free Water Content of In Vivo Human Lenses Measured by Magnetic Resonance Imaging. , 2021, 62, 33. | | 8 |
| 81 | Regulation of the Membrane Trafficking of the Mechanosensitive Ion Channels TRPV1 and TRPV4 by Zonular Tension, Osmotic Stress and Activators in the Mouse Lens. International Journal of Molecular Sciences, 2021, 22, 12658. | 1.8 | 8 |
| 82 | A link between maternal malnutrition and depletion of glutathione in the developing lens: a possible explanation for idiopathic childhood cataract?. Australasian journal of optometry, The, 2013, 96, 523-528. | 0.6 | 7 |
| 83 | An exploration into diffusion tensor imaging in the bovine ocular lens. Frontiers in Physiology, 2013, 4, 33. | 1.3 | 7 |
| 84 | Mapping of the cystineâ€"glutamate exchanger in the mouse eye: a role for xCT in controlling extracellular redox balance. Histochemistry and Cell Biology, 2019, 152, 293-310. | 0.8 | 7 |
| 85 | Lens Aquaporins in Health and Disease: Location is Everything!. Frontiers in Physiology, 2022, 13, 882550. | 1.3 | 7 |
| 86 | Mapping Glucose Uptake, Transport and Metabolism in the Bovine Lens Cortex. Frontiers in Physiology, 2022, 13, . | 1.3 | 7 |
| 87 | Review of the Experimental Background and Implementation of Computational Models of the Ocular Lens Microcirculation. IEEE Reviews in Biomedical Engineering, 2016, 9, 163-176. | 13.1 | 6 |
| 88 | The modulation of the phosphorylation status of NKCC1 in organ cultured bovine lenses: Implications for the regulation of fiber cell and overall lens volume. Experimental Eye Research, 2017, 165, 164-174. | 1.2 | 6 |
| 89 | Using the Lens Paradox to Optimize an In Vivo MRI-Based Optical Model of the Aging Human Crystalline Lens. Translational Vision Science and Technology, 2020, 9, 39. | 1.1 | 6 |
| 90 | Connexins in the Lens: Are they to Blame in Diabetic Cataractogenesis?. Novartis Foundation Symposium, 1999, 219, 97-112. | 1.2 | 6 |

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| 91 | Whole-Cell Patch Clamping of Isolated Fiber Cells Confirms that Spatially Distinct Clâˆ'Influx and Efflux Pathways Exist in the Cortex of the Rat Lens. , 2009, 50, 3808. | | 5 |
| 92 | Identification of a nonselective cation channel in isolated lens fiber cells that is activated by cell shrinkage. American Journal of Physiology - Cell Physiology, 2012, 303, C1252-C1259. | 2.1 | 5 |
| 93 | Identification and Functional Characterization of a GSH Conjugate Efflux Pathway in the Rat Lens. , 2015, 56, 5256. | | 5 |
| 94 | Identification of the WNK-SPAK/OSR1 Signaling Pathway in Rodent and Human Lenses. Investigative Ophthalmology and Visual Science, 2015, 56, 310-321. | 3.3 | 5 |
| 95 | Regional differences in glutathione accumulation pathways in the rat cornea: Mapping of amino acid transporters involved in glutathione synthesis. Experimental Eye Research, 2017, 161, 89-100. | 1.2 | 5 |
| 96 | Characterisation of Glutathione Export from Human Donor Lenses. Translational Vision Science and Technology, 2020, 9, 37. | 1.1 | 5 |
| 97 | Intracellular hydrostatic pressure regulation in the bovine lens: a role in the regulation of lens optics?. American Journal of Physiology - Regulatory Integrative and Comparative Physiology, 2022, 322, R263-R279. | 0.9 | 5 |
| 98 | Microelectrode studies of toad urinary bladder epithelial cells using a novel mounting method. Pflugers Archiv European Journal of Physiology, 1991, 419, 504-507. | 1.3 | 4 |
| 99 | Reply to: The Lens Fluid Circulation Modelâ€"A Critical Appraisal. , 2010, 51, 2310. | | 4 |
| 100 | Mapping glucose metabolites in the normal bovine lens: Evaluation and optimisation of a matrixâ€assisted laser desorption/ionisation imaging mass spectrometry method. Journal of Mass Spectrometry, 2021, 56, e4666. | 0.7 | 4 |
| 101 | Membrane Transporters. , 2008, , 89-110. | | 4 |
| 102 | Hyperbaric oxygen as a model of lens aging in the bovine lens: The effects on lens biochemistry, physiology and optics. Experimental Eye Research, 2021, 212, 108790. | 1.2 | 4 |
| 103 | Fatty Acid Uptake and Incorporation into Phospholipids in the Rat Lens. , 2011, 52, 804. | | 3 |
| 104 | Corneal opacities in mice exposed to repeated contact procedures during ocular examinations. Australasian journal of optometry, The, 2020, 103, 307-311. | 0.6 | 3 |
| 105 | Early Onset of Age-Related Cataracts in Cystine/Glutamate Antiporter Knockout Mice. , 2021, 62, 23. | | 3 |
| 106 | Lens Cell Membranes. , 2004, , 151-172. | | 2 |
| 107 | Reversing the Age-Dependent Decline in Lens Transport: A New Strategy to Prevent Age Related Nuclear Cataract?. , 2013, 54, 7188. | | 2 |
| 108 | Chapter 5 Sodium Dependence of Cation Permeabilities and Transport. Current Topics in Membranes and Transport, 1989, 34, 83-104. | 0.6 | 1 |

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| 109 | Fluid in Equals Fluid Outâ€"Evidence for Circulating Fluid Fluxes in the Lens. , 2012, 53, 7727. | | 1 |
| 110 | The Effects of Maternal Under-Nutrition and a Post-Natal High Fat Diet on Lens Growth, Transparency and Oxidative Defense Systems in Rat Offspring. Current Eye Research, 2017, 42, 589-599. | 0.7 | 1 |
| 111 | Chapter 7 Patch Clamp of Cation Channels. Current Topics in Membranes and Transport, 1990, 37, 215-246. | 0.6 | 0 |
| 112 | Effects of ADH on the apical and basolateral membranes of toad urinary bladder epithelial cells. Pflugers Archiv European Journal of Physiology, 1993, 425, 213-218. | 1.3 | 0 |
| 113 | Modelling the circulation in the mammalian lens. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2003, 36, 105-107. | 0.4 | 0 |
| 114 | Application of two-photon flash photolysis to measure microscopic diffusion and calcium fluxes. , 2005, , . | | 0 |
| 115 | Animal Models in Cataract Research. , 2017, , 103-116. | | 0 |
| 116 | Channel reconstitution from lens MP70 enriched preparations. , 1993, , 149-152. | | 0 |
| 117 | A novel procedure for in vitro docking of hemi-channels and assembly of non-crystalline gap junctions. Progress in Cell Research, 1995, , 323-326. | 0.3 | 0 |