

# Robert P Mecham

## List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

113  
papers

8,482  
citations

52  
h-index

91  
g-index

115  
ext. papers

9,365  
ext. citations

7.7  
avg, IF

6.05  
L-index

#	Paper	IF	Citations
113	Passive biaxial mechanical behavior of newborn mouse aorta with and without elastin. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , <b>2021</b> , 126, 105021	4.1	0
112	Loss of Angiotensin II Type 2 Receptor Improves Blood Pressure in Elastin Insufficiency. <i>Frontiers in Cardiovascular Medicine</i> , <b>2021</b> , 8, 782138	5.4	1
111	Inhibition of NOX1 Mitigates Blood Pressure Increases in Elastin Insufficiency. <i>Function</i> , <b>2021</b> , 2, zqab015	5.1	4
110	Vascular Smooth Muscle Cell Subpopulations and Neointimal Formation in Mouse Models of Elastin Insufficiency. <i>Arteriosclerosis, Thrombosis, and Vascular Biology</i> , <b>2021</b> , 41, 2890-2905	9.4	4
109	Deletion of type VIII collagen reduces blood pressure, increases carotid artery functional distensibility and promotes elastin deposition. <i>Matrix Biology Plus</i> , <b>2021</b> , 12, 100085	5.1	0
108	Tissue-specific smooth muscle cell subtypes identified by transcriptional profiling. <i>International Journal of Biochemistry and Cell Biology</i> , <b>2021</b> , 139, 106055	5.6	
107	Whole exome sequencing in patients with Williams-Beuren syndrome followed by disease modeling in mice points to four novel pathways that may modify stenosis risk. <i>Human Molecular Genetics</i> , <b>2020</b> , 29, 2035-2050	5.6	7
106	Stem cell derived extracellular vesicles for vascular elastic matrix regenerative repair. <i>Acta Biomaterialia</i> , <b>2020</b> , 113, 267-278	10.8	8
105	Identification of the growth factor-binding sequence in the extracellular matrix protein MAGP-1. <i>Journal of Biological Chemistry</i> , <b>2020</b> , 295, 2687-2697	5.4	8
104	Elastin haploinsufficiency in mice has divergent effects on arterial remodeling with aging depending on sex. <i>American Journal of Physiology - Heart and Circulatory Physiology</i> , <b>2020</b> , 319, H1398-H1408	5.2	5
103	A matricellular protein fibulin-4 is essential for the activation of lysyl oxidase. <i>Science Advances</i> , <b>2020</b> , 6,	14.3	13
102	Captopril treatment during development alleviates mechanically induced aortic remodeling in newborn elastin knockout mice. <i>Biomechanics and Modeling in Mechanobiology</i> , <b>2020</b> , 19, 99-112	3.8	2
101	Decreased lysyl oxidase level protects against development of retinal vascular lesions in diabetic retinopathy. <i>Experimental Eye Research</i> , <b>2019</b> , 184, 221-226	3.7	8
100	Heterogeneous Cellular Contributions to Elastic Laminae Formation in Arterial Wall Development. <i>Circulation Research</i> , <b>2019</b> , 125, 1006-1018	15.7	21
99	Elastic fiber ultrastructure and assembly. <i>Matrix Biology</i> , <b>2019</b> , 84, 31-40	11.4	30
98	Intracellular retention of mutant lysyl oxidase leads to aortic dilation in response to increased hemodynamic stress. <i>JCI Insight</i> , <b>2019</b> , 5,	9.9	4
97	Elastin in lung development and disease pathogenesis. <i>Matrix Biology</i> , <b>2018</b> , 73, 6-20	11.4	63

96	Maintaining Elastogenicity of Mesenchymal Stem Cell-Derived Smooth Muscle Cells in Two-Dimensional Culture. <i>Tissue Engineering - Part A</i> , <b>2018</b> , 24, 979-989	3.9	4
95	Extracellular Determinants of Arterial Morphogenesis, Growth, and Homeostasis. <i>Current Topics in Developmental Biology</i> , <b>2018</b> , 130, 193-216	5.3	2
94	Elastin purification and solubilization. <i>Methods in Cell Biology</i> , <b>2018</b> , 143, 207-222	1.8	9
93	Pro-elastogenic effects of bone marrow mesenchymal stem cell-derived smooth muscle cells on cultured aneurysmal smooth muscle cells. <i>Journal of Tissue Engineering and Regenerative Medicine</i> , <b>2017</b> , 11, 679-693	4.4	20
92	Deficient Circumferential Growth Is the Primary Determinant of Aortic Obstruction Attributable to Partial Elastin Deficiency. <i>Arteriosclerosis, Thrombosis, and Vascular Biology</i> , <b>2017</b> , 37, 930-941	9.4	27
91	Fibulin-4 is essential for maintaining arterial wall integrity in conduit but not muscular arteries. <i>Science Advances</i> , <b>2017</b> , 3, e1602532	14.3	18
90	Mechanical behavior and matrisome gene expression in the aneurysm-prone thoracic aorta of newborn lysyl oxidase knockout mice. <i>American Journal of Physiology - Heart and Circulatory Physiology</i> , <b>2017</b> , 313, H446-H456	5.2	21
89	Functionally Distinct Tendons From Elastin Haploinsufficient Mice Exhibit Mild Stiffening and Tendon-Specific Structural Alteration. <i>Journal of Biomechanical Engineering</i> , <b>2017</b> , 139,	2.1	21
88	Downregulation of Lysyl Oxidase Protects Retinal Endothelial Cells From High Glucose-Induced Apoptosis <b>2017</b> , 58, 2725-2731		11
87	Crosslinked elastic fibers are necessary for low energy loss in the ascending aorta. <i>Journal of Biomechanics</i> , <b>2017</b> , 61, 199-207	2.9	27
86	FGF receptors control alveolar elastogenesis. <i>Development (Cambridge)</i> , <b>2017</b> , 144, 4563-4572	6.6	27
85	Loss of function mutation in LOX causes thoracic aortic aneurysm and dissection in humans. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2016</b> , 113, 8759-64	11.5	100
84	Sterilization of Lung Matrices by Supercritical Carbon Dioxide. <i>Tissue Engineering - Part C: Methods</i> , <b>2016</b> , 22, 260-9	2.9	42
83	Characterization of metabolic health in mouse models of fibrillin-1 perturbation. <i>Matrix Biology</i> , <b>2016</b> , 55, 63-76	11.4	6
82	Comparative biology of decellularized lung matrix: Implications of species mismatch in regenerative medicine. <i>Biomaterials</i> , <b>2016</b> , 102, 220-30	15.6	53
81	Mechanical factors direct mouse aortic remodelling during early maturation. <i>Journal of the Royal Society Interface</i> , <b>2015</b> , 12, 20141350	4.1	17
80	Fibulin-4 E57K Knock-in Mice Recapitulate Cutaneous, Vascular and Skeletal Defects of Recessive Cutis Laxa 1B with both Elastic Fiber and Collagen Fibril Abnormalities. <i>Journal of Biological Chemistry</i> , <b>2015</b> , 290, 21443-59	5.4	32
79	Chronic antihypertensive treatment improves pulse pressure but not large artery mechanics in a mouse model of congenital vascular stiffness. <i>American Journal of Physiology - Heart and Circulatory Physiology</i> , <b>2015</b> , 309, H1008-16	5.2	15

78	Greater impairments in cerebral artery compared with skeletal muscle feed artery endothelial function in a mouse model of increased large artery stiffness. <i>Journal of Physiology</i> , <b>2015</b> , 593, 1931-43	3.9	23
77	Altered reactivity of resistance vasculature contributes to hypertension in elastin insufficiency. <i>American Journal of Physiology - Heart and Circulatory Physiology</i> , <b>2014</b> , 306, H654-66	5.2	26
76	Elastin Insufficiency Predisposes Mice to Impaired Glucose Metabolism. <i>Journal of Molecular and Genetic Medicine: an International Journal of Biomedical Research</i> , <b>2014</b> , 8,	2.5	6
75	Microfibril-associated glycoprotein 2 (MAGP2) loss of function has pleiotropic effects in vivo. <i>Journal of Biological Chemistry</i> , <b>2013</b> , 288, 28869-80	5.4	38
74	A fiber-based constitutive model predicts changes in amount and organization of matrix proteins with development and disease in the mouse aorta. <i>Biomechanics and Modeling in Mechanobiology</i> , <b>2013</b> , 12, 497-510	3.8	32
73	Overview of extracellular matrix. <i>Current Protocols in Cell Biology</i> , <b>2012</b> , Chapter 10, Unit 10.1	2.3	71
72	Elastin in large artery stiffness and hypertension. <i>Journal of Cardiovascular Translational Research</i> , <b>2012</b> , 5, 264-73	3.3	254
71	Alternative splicing and tissue-specific elastin misassembly act as biological modifiers of human elastin gene frameshift mutations associated with dominant cutis laxa. <i>Journal of Biological Chemistry</i> , <b>2012</b> , 287, 22055-67	5.4	23
70	Characterization of erectile function in elastin haploinsufficient mice. <i>Journal of Sexual Medicine</i> , <b>2011</b> , 8, 3075-85	1.1	2
69	New insights into the pathogenesis of autosomal-dominant cutis laxa with report of five ELN mutations. <i>Human Mutation</i> , <b>2011</b> , 32, 445-55	4.7	98
68	Decreased aortic diameter and compliance precedes blood pressure increases in postnatal development of elastin-insufficient mice. <i>American Journal of Physiology - Heart and Circulatory Physiology</i> , <b>2011</b> , 301, H221-9	5.2	59
67	Genetic modifiers of cardiovascular phenotype caused by elastin haploinsufficiency act by extrinsic noncomplementation. <i>Journal of Biological Chemistry</i> , <b>2011</b> , 286, 44926-36	5.4	25
66	Oxidative modifications of the C-terminal domain of tropoelastin prevent cell binding. <i>Journal of Biological Chemistry</i> , <b>2011</b> , 286, 13574-82	5.4	22
65	Elastin <b>2011</b> , 267-301		9
64	Elastin haploinsufficiency results in progressive aortic valve malformation and latent valve disease in a mouse model. <i>Circulation Research</i> , <b>2010</b> , 107, 549-57	15.7	52
63	Oxidative and nitrosative modifications of tropoelastin prevent elastic fiber assembly in vitro. <i>Journal of Biological Chemistry</i> , <b>2010</b> , 285, 37396-404	5.4	36
62	The importance of elastin to aortic development in mice. <i>American Journal of Physiology - Heart and Circulatory Physiology</i> , <b>2010</b> , 299, H257-64	5.2	52
61	Microfibril-associated glycoprotein-1, an extracellular matrix regulator of bone remodeling. <i>Journal of Biological Chemistry</i> , <b>2010</b> , 285, 23858-67	5.4	21

60	Mechanisms of emphysema in autosomal dominant cutis laxa. <i>Matrix Biology</i> , <b>2010</b> , 29, 621-8	11.4	21
59	Reduced vessel elasticity alters cardiovascular structure and function in newborn mice. <i>Circulation Research</i> , <b>2009</b> , 104, 1217-24	15.7	82
58	Discrete contributions of elastic fiber components to arterial development and mechanical compliance. <i>Arteriosclerosis, Thrombosis, and Vascular Biology</i> , <b>2009</b> , 29, 2083-9	9.4	62
57	Vascular extracellular matrix and arterial mechanics. <i>Physiological Reviews</i> , <b>2009</b> , 89, 957-89	47.9	632
56	Mice lacking the extracellular matrix protein MAGP1 display delayed thrombotic occlusion following vessel injury. <i>Blood</i> , <b>2008</b> , 111, 4137-44	2.2	33
55	Modification and functional inactivation of the tropoelastin carboxy-terminal domain in cross-linked elastin. <i>Matrix Biology</i> , <b>2008</b> , 27, 631-9	11.4	21
54	Methods in elastic tissue biology: elastin isolation and purification. <i>Methods</i> , <b>2008</b> , 45, 32-41	4.6	74
53	Elastin haploinsufficiency induces alternative aging processes in the aorta. <i>Rejuvenation Research</i> , <b>2008</b> , 11, 97-112	2.6	60
52	Fibulin-2 is dispensable for mouse development and elastic fiber formation. <i>Molecular and Cellular Biology</i> , <b>2008</b> , 28, 1061-7	4.8	55
51	Deficiency in microfibril-associated glycoprotein-1 leads to complex phenotypes in multiple organ systems. <i>Journal of Biological Chemistry</i> , <b>2008</b> , 283, 25533-25543	5.4	69
50	Neutrophil elastase cleaves laminin-332 (laminin-5) generating peptides that are chemotactic for neutrophils. <i>Journal of Biological Chemistry</i> , <b>2008</b> , 283, 9513-22	5.4	80
49	Smooth muscle protein 22alpha-mediated patchy deletion of <i>Bmpr1a</i> impairs cardiac contractility but protects against pulmonary vascular remodeling. <i>Circulation Research</i> , <b>2008</b> , 102, 380-8	15.7	39
48	Elastin insufficiency predisposes to elevated pulmonary circulatory pressures through changes in elastic artery structure. <i>Journal of Applied Physiology</i> , <b>2008</b> , 105, 1610-9	3.7	33
47	Essential role for fibrillin-2 in zebrafish notochord and vascular morphogenesis. <i>Developmental Dynamics</i> , <b>2008</b> , 237, 2844-61	2.9	30
46	New insights into elastic fiber assembly. <i>Birth Defects Research Part C: Embryo Today Reviews</i> , <b>2007</b> , 81, 229-40		298
45	Microfibril-associated MAGP-2 stimulates elastic fiber assembly. <i>Journal of Biological Chemistry</i> , <b>2007</b> , 282, 800-8	5.4	43
44	Elastin protein levels are a vital modifier affecting normal lung development and susceptibility to emphysema. <i>American Journal of Physiology - Lung Cellular and Molecular Physiology</i> , <b>2007</b> , 292, L778-87	5.8	71
43	Elastin-insufficient mice show normal cardiovascular remodeling in 2K1C hypertension despite higher baseline pressure and unique cardiovascular architecture. <i>American Journal of Physiology - Heart and Circulatory Physiology</i> , <b>2007</b> , 293, H574-82	5.2	20

42	Functional rescue of elastin insufficiency in mice by the human elastin gene: implications for mouse models of human disease. <i>Circulation Research</i> , <b>2007</b> , 101, 523-31	15.7	74
41	Domains 16 and 17 of tropoelastin in elastic fibre formation. <i>Biochemical Journal</i> , <b>2007</b> , 402, 63-70	3.8	22
40	Elastic fiber formation: a dynamic view of extracellular matrix assembly using timer reporters. <i>Journal of Cellular Physiology</i> , <b>2006</b> , 207, 87-96	7	142
39	Elastic fiber macro-assembly is a hierarchical, cell motion-mediated process. <i>Journal of Cellular Physiology</i> , <b>2006</b> , 207, 97-106	7	76
38	The stumbling block in lung repair of emphysema: elastic fiber assembly. <i>Proceedings of the American Thoracic Society</i> , <b>2006</b> , 3, 428-33		98
37	Fibulin-5 mutations: mechanisms of impaired elastic fiber formation in recessive cutis laxa. <i>Human Molecular Genetics</i> , <b>2006</b> , 15, 3379-86	5.6	75
36	Chronic hypoxia augments uterine artery distensibility and alters the circumferential wall stress-strain relationship during pregnancy. <i>Journal of Applied Physiology</i> , <b>2006</b> , 100, 1842-50	3.7	17
35	Elastin fragments drive disease progression in a murine model of emphysema. <i>Journal of Clinical Investigation</i> , <b>2006</b> , 116, 753-9	15.9	345
34	Extracellular matrix gene expression in the developing mouse aorta. <i>Advances in Developmental Biology (Amsterdam, Netherlands)</i> , <b>2005</b> , 15, 81-128		21
33	Increased fibulin-5 and elastin in S100A4/Mts1 mice with pulmonary hypertension. <i>Circulation Research</i> , <b>2005</b> , 97, 596-604	15.7	80
32	Altered vascular remodeling in fibulin-5-deficient mice reveals a role of fibulin-5 in smooth muscle cell proliferation and migration. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , <b>2005</b> , 102, 2946-51	11.5	101
31	A functional mutation in the terminal exon of elastin in severe, early-onset chronic obstructive pulmonary disease. <i>American Journal of Respiratory Cell and Molecular Biology</i> , <b>2005</b> , 33, 355-62	5.7	66
30	The Pro-regions of lysyl oxidase and lysyl oxidase-like 1 are required for deposition onto elastic fibers. <i>Journal of Biological Chemistry</i> , <b>2005</b> , 280, 42848-55	5.4	104
29	Effects of elastin haploinsufficiency on the mechanical behavior of mouse arteries. <i>American Journal of Physiology - Heart and Circulatory Physiology</i> , <b>2005</b> , 289, H1209-17	5.2	141
28	Tropoelastin interacts with cell-surface glycosaminoglycans via its COOH-terminal domain. <i>Journal of Biological Chemistry</i> , <b>2005</b> , 280, 40939-47	5.4	128
27	Tropoelastin inhibits vascular calcification via 67-kDa elastin binding protein in cultured bovine aortic smooth muscle cells. <i>Journal of Atherosclerosis and Thrombosis</i> , <b>2004</b> , 11, 159-66	4	25
26	Identification of a major microfibril-associated glycoprotein-1-binding domain in fibrillin-2. <i>Journal of Biological Chemistry</i> , <b>2004</b> , 279, 23045-51	5.4	29
25	Vascular extracellular matrix and aortic development. <i>Current Topics in Developmental Biology</i> , <b>2004</b> , 62, 153-88	5.3	139

24	TGF-beta-dependent pathogenesis of mitral valve prolapse in a mouse model of Marfan syndrome. <i>Journal of Clinical Investigation</i> , <b>2004</b> , 114, 1586-92	15.9	231
23	Domains in tropoelastin that mediate elastin deposition in vitro and in vivo. <i>Journal of Biological Chemistry</i> , <b>2003</b> , 278, 18491-8	5.4	108
22	Lysyl oxidase is required for vascular and diaphragmatic development in mice. <i>Journal of Biological Chemistry</i> , <b>2003</b> , 278, 14387-93	5.4	236
21	Fibrillin-1 and -2 contain heparin-binding sites important for matrix deposition and that support cell attachment. <i>Biochemical Journal</i> , <b>2003</b> , 375, 425-32	3.8	69
20	Dexamethasone induction of hypertension and diabetes is PPAR-alpha dependent in LDL receptor-null mice. <i>Nature Medicine</i> , <b>2003</b> , 9, 1069-75	50.5	173
19	A site on laminin alpha 5, AQARSAASKVKVSMKF, induces inflammatory cell production of matrix metalloproteinase-9 and chemotaxis. <i>Journal of Immunology</i> , <b>2003</b> , 171, 398-406	5.3	97
18	Hypertension and prolonged vasoconstrictor signaling in RGS2-deficient mice. <i>Journal of Clinical Investigation</i> , <b>2003</b> , 111, 445-52	15.9	220
17	Developmental adaptation of the mouse cardiovascular system to elastin haploinsufficiency. <i>Journal of Clinical Investigation</i> , <b>2003</b> , 112, 1419-28	15.9	186
16	Interaction of tropoelastin with the amino-terminal domains of fibrillin-1 and fibrillin-2 suggests a role for the fibrillins in elastic fiber assembly. <i>Journal of Biological Chemistry</i> , <b>2000</b> , 275, 24400-6	5.4	105
15	Developmental expression of latent transforming growth factor beta binding protein 2 and its requirement early in mouse development. <i>Molecular and Cellular Biology</i> , <b>2000</b> , 20, 4879-87	4.8	96
14	The microfibrillar proteins MAGP-1 and fibrillin-1 form a ternary complex with the chondroitin sulfate proteoglycan decorin. <i>Molecular Biology of the Cell</i> , <b>2000</b> , 11, 1499-507	3.5	122
13	Mouse models of genetic diseases resulting from mutations in elastic fiber proteins. <i>Matrix Biology</i> , <b>2000</b> , 19, 481-8	11.4	69
12	Relation between outer and luminal diameter in cannulated arteries. <i>American Journal of Physiology - Heart and Circulatory Physiology</i> , <b>1999</b> , 277, H1745-53	5.2	38
11	Elastin is an essential determinant of arterial morphogenesis. <i>Nature</i> , <b>1998</b> , 393, 276-80	50.4	625
10	Action of tropoelastin and synthetic elastin sequences on vascular tone and on free Ca <sup>2+</sup> level in human vascular endothelial cells. <i>Circulation Research</i> , <b>1998</b> , 82, 328-36	15.7	100
9	Elastin degradation by matrix metalloproteinases. Cleavage site specificity and mechanisms of elastolysis. <i>Journal of Biological Chemistry</i> , <b>1997</b> , 272, 18071-6	5.4	184
8	Cell-type Specific Recognition of RGD- and Non-RGD-containing Cell Binding Domains in Fibrillin-1. <i>Journal of Biological Chemistry</i> , <b>1996</b> , 271, 4916-4922	5.4	136
7	Activation of the 92-kDa gelatinase by stromelysin and 4-aminophenylmercuric acetate. Differential processing and stabilization of the carboxyl-terminal domain by tissue inhibitor of metalloproteinases (TIMP). <i>Journal of Biological Chemistry</i> , <b>1995</b> , 270, 6351-6	5.4	134



6	Identification of an elastin cross-linking domain that joins three peptide chains. Possible role in nucleated assembly. <i>Journal of Biological Chemistry</i> , <b>1995</b> , 270, 17778-83	5.4	125
5	Receptors for laminin on mammalian cells. <i>FASEB Journal</i> , <b>1991</b> , 5, 2538-46	0.9	207
4	Three-dimensional organization of extracellular matrix in elastic cartilage as viewed by quick freeze, deep etch electron microscopy. <i>Connective Tissue Research</i> , <b>1990</b> , 24, 83-93	3.3	50
3	Elastin binds to a multifunctional 67-kilodalton peripheral membrane protein. <i>Biochemistry</i> , <b>1989</b> , 28, 3716-22	3.2	168
2	Elastin production by cultured calf pulmonary artery endothelial cells. <i>Journal of Cellular Physiology</i> , <b>1983</b> , 116, 282-8	7	74
1	Desmosine radioimmunoassay as a means of studying elastogenesis in cell culture. <i>Connective Tissue Research</i> , <b>1981</b> , 8, 255-8	3.3	44