

# Patrick E Macdonald

## List of Publications by Year in descending order

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Version: 2024-02-01

116  
papers

9,739  
citations

41344

49  
h-index

39675

94  
g-index

167  
all docs

167  
docs citations

167  
times ranked

12728  
citing authors

#	ARTICLE	IF	CITATIONS
1	Cryopreservation and post-thaw characterization of dissociated human islet cells. PLoS ONE, 2022, 17, e0263005.	2.5	11
2	Heterogenous impairment of $\hat{1}\pm$ cell function in type 2 diabetes is linked to cell maturation state. Cell Metabolism, 2022, 34, 256-268.e5.	16.2	39
3	Beta-cell specific Insr deletion promotes insulin hypersecretion and improves glucose tolerance prior to global insulin resistance. Nature Communications, 2022, 13, 735.	12.8	20
4	P2Y1 purinergic receptor identified as a diabetes target in a small-molecule screen to reverse circadian $\hat{1}^2$ -cell failure. ELife, 2022, 11, .	6.0	5
5	Impacts of the COVID-19 pandemic on a human research islet program. Islets, 2022, 14, 101-113.	1.8	3
6	SARS-CoV-2 infects and replicates in cells of the human endocrine and exocrine pancreas. Nature Metabolism, 2021, 3, 149-165.	11.9	378
7	CRISPR-based genome editing in primary human pancreatic islet cells. Nature Communications, 2021, 12, 2397.	12.8	26
8	Novel mouse model expands potential human $\hat{1}\pm$ -cell research. Islets, 2021, 13, 80-83.	1.8	0
9	A New Hypothesis for Type 1 Diabetes Risk: The At-Risk Allele at rs3842753 Associates With Increased Beta-Cell INS Messenger RNA in a Meta-Analysis of Single-Cell RNA-Sequencing Data. Canadian Journal of Diabetes, 2021, 45, 775-784.e2.	0.8	11
10	$\hat{1}^2$ -Cell Knockout of SENP1 Reduces Responses to Incretins and Worsens Oral Glucose Tolerance in High-Fat Diet Fed Mice. Diabetes, 2021, 70, 2626-2638.	0.6	13
11	Combinatorial transcription factor profiles predict mature and functional human islet $\hat{1}\pm$ and $\hat{1}^2$ cells. JCI Insight, 2021, 6, .	5.0	22
12	Improvement of islet transplantation by the fusion of islet cells with functional blood vessels. EMBO Molecular Medicine, 2021, 13, e12616.	6.9	57
13	Molecular and functional profiling of human islets: from heterogeneity to human phenotypes. Diabetologia, 2020, 63, 2095-2101.	6.3	17
14	Human islets contain a subpopulation of glucagon-like peptide-1 secreting $\hat{1}\pm$ cells that is increased in type 2 diabetes. Molecular Metabolism, 2020, 39, 101014.	6.5	44
15	Vitamin-D-Binding Protein Contributes to the Maintenance of $\hat{1}\pm$ Cell Function and Glucagon Secretion. Cell Reports, 2020, 31, 107761.	6.4	19
16	A role for alternative splicing in circadian control of exocytosis and glucose homeostasis. Genes and Development, 2020, 34, 1089-1105.	5.9	22
17	GLP-1 receptor agonists synergize with DYRK1A inhibitors to potentiate functional human $\hat{1}^2$ cell regeneration. Science Translational Medicine, 2020, 12, .	12.4	81
18	Improved glucose tolerance with DPPIV inhibition requires $\hat{1}^2$ cell SENP1 amplification of glucose-stimulated insulin secretion. Physiological Reports, 2020, 8, e14420.	1.7	5

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19	Patch-Seq Links Single-Cell Transcriptomes to Human Islet Dysfunction in Diabetes. <i>Cell Metabolism</i> , 2020, 31, 1017-1031.e4.	16.2	177
20	Genetic variant effects on gene expression in human pancreatic islets and their implications for T2D. <i>Nature Communications</i> , 2020, 11, 4912.	12.8	89
21	A role for PKD1 in insulin secretion downstream of P2Y <sub>1</sub> receptor activation in mouse and human islets. <i>Physiological Reports</i> , 2019, 7, e14250.	1.7	10
22	Î² Cell tone is defined by proglucagon peptides through cAMP signaling. <i>JCI Insight</i> , 2019, 4, .	5.0	167
23	A glucose-dependent spatial patterning of exocytosis in human Î² cells is disrupted in type 2 diabetes. <i>JCI Insight</i> , 2019, 4, .	5.0	18
24	The cell biology of systemic insulin function. <i>Journal of Cell Biology</i> , 2018, 217, 2273-2289.	5.2	270
25	A post-translational balancing act: the good and the bad of SUMOylation in pancreatic islets. <i>Diabetologia</i> , 2018, 61, 775-779.	6.3	11
26	Cystic fibrosis-related diabetes is caused by islet loss and inflammation. <i>JCI Insight</i> , 2018, 3, .	5.0	127
27	Type 2 diabetes risk alleles in PAM impact insulin release from human pancreatic Î²-cells. <i>Nature Genetics</i> , 2018, 50, 1122-1131.	21.4	59
28	Decreased STARD10 Expression Is Associated with Defective Insulin Secretion in Humans and Mice. <i>American Journal of Human Genetics</i> , 2017, 100, 238-256.	6.2	60
29	Converting Adult Pancreatic Islet Î± Cells into Î² Cells by Targeting Both Dnmt1 and Arx. <i>Cell Metabolism</i> , 2017, 25, 622-634.	16.2	165
30	STEAP4 expression in human islets is associated with differences in body mass index, sex, HbA1c, and inflammation. <i>Endocrine</i> , 2017, 56, 528-537.	2.3	6
31	Impaired â€œGlycineâ€•mia in Type 2 Diabetes and Potential Mechanisms Contributing to Glucose Homeostasis. <i>Endocrinology</i> , 2017, 158, 1064-1073.	2.8	56
32	N-acyl Taurines and Acylcarnitines Cause an Imbalance in Insulin Synthesis and Secretion Provoking Î² Cell Dysfunction in Type 2 Diabetes. <i>Cell Metabolism</i> , 2017, 25, 1334-1347.e4.	16.2	87
33	Transplantation of Human Pancreatic Endoderm Cells Reverses Diabetes Post Transplantation in a Prevascularized Subcutaneous Site. <i>Stem Cell Reports</i> , 2017, 8, 1689-1700.	4.8	68
34	Kv2.1 Clustering Contributes to Insulin Exocytosis and Rescues Human Î²-Cell Dysfunction. <i>Diabetes</i> , 2017, 66, 1890-1900.	0.6	34
35	SUMOylation and calcium control syntaxin-1A and secretagogin sequestration by tomosyn to regulate insulin exocytosis in human Î³ cells. <i>Scientific Reports</i> , 2017, 7, 248.	3.3	37
36	Chronic insulin infusion induces reversible glucose intolerance in lean rats yet ameliorates glucose intolerance in obese rats. <i>Biochimica Et Biophysica Acta - General Subjects</i> , 2017, 1861, 313-322.	2.4	6

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37	Toward Connecting Metabolism to the Exocytotic Site. <i>Trends in Cell Biology</i> , 2017, 27, 163-171.	7.9	28
38	Metabolomics applied to islet nutrient sensing mechanisms. <i>Diabetes, Obesity and Metabolism</i> , 2017, 19, 90-94.	4.4	12
39	Loss of mTORC1 signaling alters pancreatic $\beta$ cell mass and impairs glucagon secretion. <i>Journal of Clinical Investigation</i> , 2017, 127, 4379-4393.	8.2	44
40	A Glycine-Insulin Autocrine Feedback Loop Enhances Insulin Secretion From Human $\beta$ -Cells and Is Impaired in Type 2 Diabetes. <i>Diabetes</i> , 2016, 65, 2311-2321.	0.6	54
41	PI3 kinases p110 $\alpha$ and PI3K-C2 $\beta$ negatively regulate cAMP via PDE3/8 to control insulin secretion in mouse and human islets. <i>Molecular Metabolism</i> , 2016, 5, 459-471.	6.5	13
42	TCF1 links GIPR signaling to the control of beta cell function and survival. <i>Nature Medicine</i> , 2016, 22, 84-90.	30.7	108
43	Research-Focused Isolation of Human Islets From Donors With and Without Diabetes at the Alberta Diabetes Institute IsletCore. <i>Endocrinology</i> , 2016, 157, 560-569.	2.8	97
44	Antiaging Glycopeptide Protects Human Islets Against Tacrolimus-Related Injury and Facilitates Engraftment in Mice. <i>Diabetes</i> , 2016, 65, 451-462.	0.6	23
45	Interleukin-1 signaling contributes to acute islet compensation. <i>JCI Insight</i> , 2016, 1, e86055.	5.0	63
46	Urea impairs $\beta$ cell glycolysis and insulin secretion in chronic kidney disease. <i>Journal of Clinical Investigation</i> , 2016, 126, 3598-3612.	8.2	99
47	Transcript Expression Data from Human Islets Links Regulatory Signals from Genome-Wide Association Studies for Type 2 Diabetes and Glycemic Traits to Their Downstream Effectors. <i>PLoS Genetics</i> , 2015, 11, e1005694.	3.5	178
48	Human islet function following 20 years of cryogenic biobanking. <i>Diabetologia</i> , 2015, 58, 1503-1512.	6.3	39
49	LKB1 couples glucose metabolism to insulin secretion in mice. <i>Diabetologia</i> , 2015, 58, 1513-1522.	6.3	22
50	Adenylosuccinate Is an Insulin Secretagogue Derived from Glucose-Induced Purine Metabolism. <i>Cell Reports</i> , 2015, 13, 157-167.	6.4	72
51	Rp-cAMPS Prodrugs Reveal the cAMP Dependence of First-Phase Glucose-Stimulated Insulin Secretion. <i>Molecular Endocrinology</i> , 2015, 29, 988-1005.	3.7	32
52	Isocitrate-to-SEN1 signaling amplifies insulin secretion and rescues dysfunctional $\beta$ cells. <i>Journal of Clinical Investigation</i> , 2015, 125, 3847-3860.	8.2	148
53	cAMP-independent effects of GLP-1 on $\beta$ cells. <i>Journal of Clinical Investigation</i> , 2015, 125, 4327-4330.	8.2	10
54	Controlling Insulin Secretion: An Exciting TASK. <i>Endocrinology</i> , 2014, 155, 3729-3731.	2.8	1

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55	SUMOylation protects against IL-1 $\beta$ -induced apoptosis in INS-1 832/13 cells and human islets. <i>American Journal of Physiology - Endocrinology and Metabolism</i> , 2014, 307, E664-E673.	3.5	17
56	SUMO1 enhances cAMP-dependent exocytosis and glucagon secretion from pancreatic $\beta$ -cells. <i>Journal of Physiology</i> , 2014, 592, 3715-3726.	2.9	19
57	Autocrine activation of P2Y1 receptors couples Ca <sup>2+</sup> influx to Ca <sup>2+</sup> release in human pancreatic beta cells. <i>Diabetologia</i> , 2014, 57, 2535-2545.	6.3	43
58	The role of the transcription factor ETV5 in insulin exocytosis. <i>Diabetologia</i> , 2014, 57, 383-391.	6.3	25
59	Insulin Secretion Induced by Glucose-dependent Insulinotropic Polypeptide Requires Phosphatidylinositol 3-Kinase $\beta$ in Rodent and Human $\beta$ -Cells. <i>Journal of Biological Chemistry</i> , 2014, 289, 32109-32120.	3.4	21
60	Stem Cells to Insulin Secreting Cells: Two Steps Forward and Now a Time to Pause?. <i>Cell Stem Cell</i> , 2014, 15, 535-536.	11.1	39
61	Dichotomous role of pancreatic HUIWE1/MULE/ARF-BP1 in modulating beta cell apoptosis in mice under physiological and genotoxic conditions. <i>Diabetologia</i> , 2014, 57, 1889-1898.	6.3	16
62	Mitochondrial Metabolism of Pyruvate Is Essential for Regulating Glucose-stimulated Insulin Secretion. <i>Journal of Biological Chemistry</i> , 2014, 289, 13335-13346.	3.4	69
63	Distinct and opposing roles for the phosphatidylinositol 3-OH kinase catalytic subunits p110 $\alpha$ and p110 $\beta$ in the regulation of insulin secretion from rodent and human beta cells. <i>Diabetologia</i> , 2013, 56, 1339-1349.	6.3	14
64	Functional Plasticity of the Human Infant $\beta$ -Cell Exocytotic Phenotype. <i>Endocrinology</i> , 2013, 154, 1392-1399.	2.8	15
65	Triton X-100 inhibits L-type voltage-operated calcium channels. <i>Canadian Journal of Physiology and Pharmacology</i> , 2013, 91, 316-324.	1.4	7
66	Intra-islet SLIT-ROBO signaling is required for beta-cell survival and potentiates insulin secretion. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013, 110, 16480-16485.	7.1	52
67	SSTR2 is the functionally dominant somatostatin receptor in human pancreatic $\beta$ - and $\delta$ -cells. <i>American Journal of Physiology - Endocrinology and Metabolism</i> , 2012, 303, E1107-E1116.	3.5	119
68	In Vivo Role of Focal Adhesion Kinase in Regulating Pancreatic $\beta$ -Cell Mass and Function Through Insulin Signaling, Actin Dynamics, and Granule Trafficking. <i>Diabetes</i> , 2012, 61, 1708-1718.	0.6	62
69	Glucagon secretion and signaling in the development of diabetes. <i>Frontiers in Physiology</i> , 2012, 3, 349.	2.8	56
70	Novel roles of SUMO in pancreatic $\beta$ -cells: thinking outside the nucleus. <i>Canadian Journal of Physiology and Pharmacology</i> , 2012, 90, 765-770.	1.4	14
71	G protein-coupled receptor (GPR)40-dependent potentiation of insulin secretion in mouse islets is mediated by protein kinase D1. <i>Diabetologia</i> , 2012, 55, 2682-2692.	6.3	139
72	DeSUMOylation Controls Insulin Exocytosis in Response to Metabolic Signals. <i>Biomolecules</i> , 2012, 2, 269-281.	4.0	16

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73	The voltage-dependent potassium channel subunit Kv2.1 regulates insulin secretion from rodent and human islets independently of its electrical function. <i>Diabetologia</i> , 2012, 55, 1709-1720.	6.3	40
74	Multivesicular exocytosis in rat pancreatic beta cells. <i>Diabetologia</i> , 2012, 55, 1001-1012.	6.3	35
75	Triton X $\hat{1}$ 00 inhibits L $\hat{a}$ type voltage $\hat{a}$ perated calcium channels. <i>FASEB Journal</i> , 2012, 26, 1115.15.	0.5	0
76	TRP-ing Down the Path to Insulin Secretion. <i>Diabetes</i> , 2011, 60, 28-29.	0.6	10
77	Islet Cholesterol Accumulation Due to Loss of ABCA1 Leads to Impaired Exocytosis of Insulin Granules. <i>Diabetes</i> , 2011, 60, 3186-3196.	0.6	97
78	Per-arnt-sim (PAS) domain kinase (PASK) as a regulator of glucagon secretion. <i>Diabetologia</i> , 2011, 54, 719-721.	6.3	12
79	SUMOylation Regulates Insulin Exocytosis Downstream of Secretory Granule Docking in Rodents and Humans. <i>Diabetes</i> , 2011, 60, 838-847.	0.6	84
80	Signal integration at the level of ion channel and exocytotic function in pancreatic $\hat{I}^2$ -cells. <i>American Journal of Physiology - Endocrinology and Metabolism</i> , 2011, 301, E1065-E1069.	3.5	28
81	Voltage-dependent K $+$ channels are positive regulators of alpha cell action potential generation and glucagon secretion in mice and humans. <i>Diabetologia</i> , 2010, 53, 1917-1926.	6.3	37
82	Inhibition of $\hat{A}$ -Cell Sodium-Calcium Exchange Enhances Glucose-Dependent Elevations in Cytoplasmic Calcium and Insulin Secretion. <i>Diabetes</i> , 2010, 59, 1686-1693.	0.6	35
83	Characterization of Erg K $+$ Channels in $\hat{I}^{\pm}$ - and $\hat{I}^2$ -Cells of Mouse and Human Islets. <i>Journal of Biological Chemistry</i> , 2009, 284, 30441-30452.	3.4	42
84	SUMOylation regulates Kv2.1 and modulates pancreatic $\hat{I}^2$ -cell excitability. <i>Journal of Cell Science</i> , 2009, 122, 775-779.	2.0	78
85	Insulin Granule Recruitment and Exocytosis Is Dependent on p110 $\hat{I}^3$ in Insulinoma and Human $\hat{I}^2$ -Cells. <i>Diabetes</i> , 2009, 58, 2084-2092.	0.6	60
86	Control of secretory granule access to the plasma membrane by PI3 kinase- $\hat{I}^3$ . <i>Islets</i> , 2009, 1, 266-268.	1.8	5
87	Kiss-and-run exocytosis and fusion pores of secretory vesicles in human $\hat{I}^2$ -cells. <i>Pflugers Archiv European Journal of Physiology</i> , 2009, 457, 1343-1350.	2.8	51
88	KATP-channels and glucose-regulated glucagon secretion. <i>Trends in Endocrinology and Metabolism</i> , 2008, 19, 277-284.	7.1	86
89	Investigation of Transport Mechanisms and Regulation of Intracellular Zn $^{2+}$ in Pancreatic $\hat{I}^{\pm}$ -Cells. <i>Journal of Biological Chemistry</i> , 2008, 283, 10184-10197.	3.4	98
90	Splice Variant-Dependent Regulation of $\hat{I}^2$ -Cell Sodium-Calcium Exchange by Acyl-Coenzyme As. <i>Molecular Endocrinology</i> , 2008, 22, 2293-2306.	3.7	20

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91	Role of Kinin B 2 Receptor Signaling in the Recruitment of Circulating Progenitor Cells With Neovascularization Potential. <i>Circulation Research</i> , 2008, 103, 1335-1343.	4.5	108
92	A KATP Channel-Dependent Pathway within $\beta$ Cells Regulates Glucagon Release from Both Rodent and Human Islets of Langerhans. <i>PLoS Biology</i> , 2007, 5, e143.	5.6	203
93	Hyperpolarization-Activated Cyclic Nucleotide-Gated Channels in Pancreatic $\beta$ -Cells. <i>Molecular Endocrinology</i> , 2007, 21, 753-764.	3.7	36
94	Corelease and Differential Exit via the Fusion Pore of GABA, Serotonin, and ATP from LDCV in Rat Pancreatic $\beta$ Cells. <i>Journal of General Physiology</i> , 2007, 129, 221-231.	1.9	94
95	The Ins and Outs of Secretion from Pancreatic $\beta$ -Cells: Control of Single-Vesicle Exo- and Endocytosis. <i>Physiology</i> , 2007, 22, 113-121.	3.1	52
96	Release of small transmitters through kiss-and-run fusion pores in rat pancreatic $\beta$ cells. <i>Cell Metabolism</i> , 2006, 4, 283-290.	16.2	127
97	Oscillations, Intercellular Coupling, and Insulin Secretion in Pancreatic $\beta$ Cells. <i>PLoS Biology</i> , 2006, 4, e49.	5.6	68
98	Role of Phosphatidylinositol 3-Kinase $\beta$ in the $\beta$ -Cell: Interactions with Glucagon-Like Peptide-1. <i>Endocrinology</i> , 2006, 147, 3318-3325.	2.8	32
99	Calcium increases endocytotic vesicle size and accelerates membrane fission in insulin-secreting INS-1 cells. <i>Journal of Cell Science</i> , 2005, 118, 5911-5920.	2.0	63
100	Glucose-sensing mechanisms in pancreatic $\beta$ -cells. <i>Philosophical Transactions of the Royal Society B: Biological Sciences</i> , 2005, 360, 2211-2225.	4.0	281
101	Regulated Exocytosis and Kiss-and-Run of Synaptic-Like Microvesicles in INS-1 and Primary Rat $\beta$ -Cells. <i>Diabetes</i> , 2005, 54, 736-743.	0.6	63
102	A pancreatic islet-specific microRNA regulates insulin secretion. <i>Nature</i> , 2004, 432, 226-230.	27.8	1,932
103	Voltage-dependent K <sup>+</sup> channels in pancreatic beta cells: Role, regulation and potential as therapeutic targets. <i>Diabetologia</i> , 2003, 46, 1046-1062.	6.3	223
104	Temperature and redox state dependence of native Kv2.1 currents in rat pancreatic $\beta$ -cells. <i>Journal of Physiology</i> , 2003, 546, 647-653.	2.9	38
105	Antagonism of Rat $\beta$ -Cell Voltage-dependent K <sup>+</sup> Currents by Exendin 4 Requires Dual Activation of the cAMP/Protein Kinase A and Phosphatidylinositol 3-Kinase Signaling Pathways. <i>Journal of Biological Chemistry</i> , 2003, 278, 52446-52453.	3.4	98
106	The phosphatidylinositol 3-kinase inhibitor LY294002 potently blocks Kv currents via a direct mechanism. <i>FASEB Journal</i> , 2003, 17, 720-722.	0.5	75
107	Inhibition of Kv2.1 Voltage-dependent K <sup>+</sup> Channels in Pancreatic $\beta$ -Cells Enhances Glucose-dependent Insulin Secretion. <i>Journal of Biological Chemistry</i> , 2002, 277, 44938-44945.	3.4	161
108	Glucagon-Like Peptide-1 Receptor Activation Antagonizes Voltage-Dependent Repolarizing K <sup>+</sup> Currents in $\beta$ -Cells: A Possible Glucose-Dependent Insulinotropic Mechanism. <i>Diabetes</i> , 2002, 51, S443-S447.	0.6	88

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109	Synaptosome-Associated Protein of 25 Kilodaltons Modulates Kv2.1 Voltage-Dependent K <sup>+</sup> Channels in Neuroendocrine Islet $\beta^2$ -Cells through an Interaction with the Channel N Terminus. <i>Molecular Endocrinology</i> , 2002, 16, 2452-2461.	3.7	79
110	The Multiple Actions of GLP-1 on the Process of Glucose-Stimulated Insulin Secretion. <i>Diabetes</i> , 2002, 51, S434-S442.	0.6	452
111	Members of the Kv1 and Kv2 Voltage-Dependent K <sup>+</sup> Channel Families Regulate Insulin Secretion. <i>Molecular Endocrinology</i> , 2001, 15, 1423-1435.	3.7	176
112	Mutations to the Third Cytoplasmic Domain of the Glucagon-Like Peptide 1 (GLP-1) Receptor Can Functionally Uncouple GLP-1-Stimulated Insulin Secretion in HIT-T15 Cells. <i>Molecular Endocrinology</i> , 1999, 13, 1305-1317.	3.7	39
113	Glucagon-like peptide 1 increases insulin sensitivity in depancreatized dogs. <i>Diabetes</i> , 1999, 48, 1045-1053.	0.6	97
114	Overexpression of uncoupling protein 2 inhibits glucose-stimulated insulin secretion from rat islets. <i>Diabetes</i> , 1999, 48, 1482-1486.	0.6	221
115	Mutations to the Third Cytoplasmic Domain of the Glucagon-Like Peptide 1 (GLP-1) Receptor Can Functionally Uncouple GLP-1-Stimulated Insulin Secretion in HIT-T15 Cells. <i>Molecular Endocrinology</i> , 1999, 13, 1305-1317.	3.7	15
116	From Isles of K�nigsberg to Islets of Langerhans: Examining the Function of the Endocrine Pancreas Through Network Science. <i>Frontiers in Endocrinology</i> , 0, 13, .	3.5	15