Patrick E Macdonald

List of Publications by Year
in descending order

115 papers	9,739 citations	41258 49 h-index	39575 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.	1.1	11
2	Heterogenous impairment of Î± cell function in type 2 diabetes is linked to cell maturation state. Cell Metabolism, 2022, 34, 256-268.e5.	7.2	39
3	Beta-cell specific Insr deletion promotes insulin hypersecretion and improves glucose tolerance prior to global insulin resistance. Nature Communications, 2022, 13, 735.	5.8	20
4	P2Y1 purinergic receptor identified as a diabetes target in a small-molecule screen to reverse circadian Î²-cell failure. ELife, 2022, 11, .	2.8	5
5	Impacts of the COVID-19 pandemic on a human research islet program. Islets, 2022, 14, 101-113.	0.9	3
6	SARS-CoV-2 infects and replicates in cells of the human endocrine and exocrine pancreas. Nature Metabolism, 2021, 3, 149-165.	5.1	378
7	CRISPR-based genome editing in primary human pancreatic islet cells. Nature Communications, 2021, 12, 2397.	5.8	26
8	Novel mouse model expands potential human Î±-cell research. Islets, 2021, 13, 80-83.	0.9	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.	0.4	11
10	Î²-Cell Knockout of SENP1 Reduces Responses to Incretins and Worsens Oral Glucose Tolerance in High-Fat Dietâ€"Fed Mice. Diabetes, 2021, 70, 2626-2638.	0.3	13
11	Combinatorial transcription factor profiles predict mature and functional human islet Î± and Î² cells. JCI Insight, 2021, 6, .	2.3	22
12	Improvement of islet transplantation by the fusion of islet cells with functional blood vessels. EMBO Molecular Medicine, 2021, 13, e12616.	3.3	57
13	Molecular and functional profiling of human islets: from heterogeneity to human phenotypes. Diabetologia, 2020, 63, 2095-2101.	2.9	17
14	Human islets contain a subpopulation of glucagon-like peptide-1 secreting Î± cells that is increased in type 2 diabetes. Molecular Metabolism, 2020, 39, 101014.	3.0	44
15	Vitamin-D-Binding Protein Contributes to the Maintenance of Î± Cell Function and Glucagon Secretion. Cell Reports, 2020, 31, 107761.	2.9	19
16	A role for alternative splicing in circadian control of exocytosis and glucose homeostasis. Genes and Development, 2020, 34, 1089-1105.	2.7	22
17	GLP-1 receptor agonists synergize with DYRK1A inhibitors to potentiate functional human Î² cell regeneration. Science Translational Medicine, 2020, 12, .	5.8	81
18	Improved glucose tolerance with DPPIV inhibition requires Î²â€cell SENP1 amplification of glucoseâ€stimulated insulin secretion. Physiological Reports, 2020, 8, e14420.	0.7	5

#	Article	IF	Citations
19	Patch-Seq Links Single-Cell Transcriptomes to Human Islet Dysfunction in Diabetes. Cell Metabolism, 2020, 31, 1017-1031.e4.	7.2	177
20	Genetic variant effects on gene expression in human pancreatic islets and their implications for T2D. Nature Communications, 2020, 11, 4912.	5.8	89
21	A role for PKD1 in insulin secretion downstream of P2Y ₁ receptor activation in mouse and human islets. Physiological Reports, 2019, 7, e14250.	0.7	10
22	Î² Cell tone is defined by proglucagon peptides through cAMP signaling. JCI Insight, 2019, 4, .	2.3	167
23	A glucose-dependent spatial patterning of exocytosis in human Î² cells is disrupted in type 2 diabetes. JCI Insight, 2019, 4, .	2.3	18
24	The cell biology of systemic insulin function. Journal of Cell Biology, 2018, 217, 2273-2289.	2.3	270
25	A post-translational balancing act: the good and the bad of SUMOylation in pancreatic islets. Diabetologia, 2018, 61, 775-779.	2.9	11
26	Cystic fibrosisâ€"related diabetes is caused by islet loss and inflammation. JCI Insight, 2018, 3, .	2.3	127
27	Type 2 diabetes risk alleles in PAM impact insulin release from human pancreatic Î²-cells. Nature Genetics, 2018, 50, 1122-1131.	9.4	59
28	Decreased STARD10 Expression Is Associated with Defective Insulin Secretion in Humans and Mice. American Journal of Human Genetics, 2017, 100, 238-256.	2.6	60
29	Converting Adult Pancreatic Islet Î± Cells into Î² Cells by Targeting Both Dnmt1 and Arx. Cell Metabolism, 2017, 25, 622-634.	7.2	165
30	STEAP4 expression in human islets is associated with differences in body mass index, sex, HbA1c, and inflammation. Endocrine, 2017, 56, 528-537.	1.1	6
31	Impaired â€œGlycineâ€•mia in Type 2 Diabetes and Potential Mechanisms Contributing to Glucose Homeostasis. Endocrinology, 2017, 158, 1064-1073.	1.4	56
32	N-acyl Taurines and Acylcarnitines Cause an Imbalance in Insulin Synthesis and Secretion Provoking Î² Cell Dysfunction in Type 2 Diabetes. Cell Metabolism, 2017, 25, 1334-1347.e4.	7.2	87
33	Transplantation of Human Pancreatic Endoderm Cells Reverses Diabetes Post Transplantation in a Prevascularized Subcutaneous Site. Stem Cell Reports, 2017, 8, 1689-1700.	2.3	68
34	Kv2.1 Clustering Contributes to Insulin Exocytosis and Rescues Human Î²-Cell Dysfunction. Diabetes, 2017, 66, 1890-1900.	0.3	34
35	SUMOylation and calcium control syntaxin-1A and secretagogin sequestration by tomosyn to regulate insulin exocytosis in human ÃŸ cells. Scientific Reports, 2017, 7, 248.	1.6	37
36	Chronic insulin infusion induces reversible glucose intolerance in lean rats yet ameliorates glucose intolerance in obese rats. Biochimica Et Biophysica Acta - General Subjects, 2017, 1861, 313-322.	1.1	6

#	Article	IF	Citations
37	Toward Connecting Metabolism to the Exocytotic Site. Trends in Cell Biology, 2017, 27, 163-171.	3.6	28
38	Metabolomics applied to islet nutrient sensing mechanisms. Diabetes, Obesity and Metabolism, 2017, 19, 90-94.	2.2	12
39	Loss of mTORC1 signaling alters pancreatic Î± cell mass and impairs glucagon secretion. Journal of Clinical Investigation, 2017, 127, 4379-4393.	3.9	44
40	A Glycine-Insulin Autocrine Feedback Loop Enhances Insulin Secretion From Human Î²-Cells and Is Impaired in Type 2 Diabetes. Diabetes, 2016, 65, 2311-2321.	0.3	54
41	PI3 kinases p110Î± and PI3K-C2Î² negatively regulate cAMP via PDE3/8 to control insulin secretion in mouse and human islets. Molecular Metabolism, 2016, 5, 459-471.	3.0	13
42	TCF1 links GIPR signaling to the control of beta cell function and survival. Nature Medicine, 2016, 22, 84-90.	15.2	108
43	Research-Focused Isolation of Human Islets From Donors With and Without Diabetes at the Alberta Diabetes Institute IsletCore. Endocrinology, 2016, 157, 560-569.	1.4	97
44	Antiaging Glycopeptide Protects Human Islets Against Tacrolimus-Related Injury and Facilitates Engraftment in Mice. Diabetes, 2016, 65, 451-462.	0.3	23
45	Interleukin-1 signaling contributes to acute islet compensation. JCI Insight, 2016, 1, e86055.	2.3	63
46	Urea impairs Î² cell glycolysis and insulin secretion in chronic kidney disease. Journal of Clinical Investigation, 2016, 126, 3598-3612.	3.9	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. PLoS Genetics, 2015, 11, e1005694.	1.5	178
48	Human islet function following 20Âyears of cryogenic biobanking. Diabetologia, 2015, 58, 1503-1512.	2.9	39
49	LKB1 couples glucose metabolism to insulin secretion in mice. Diabetologia, 2015, 58, 1513-1522.	2.9	22
50	Adenylosuccinate Is an Insulin Secretagogue Derived from Glucose-Induced Purine Metabolism. Cell Reports, 2015, 13, 157-167.	2.9	72
51	Rp-cAMPS Prodrugs Reveal the cAMP Dependence of First-Phase Glucose-Stimulated Insulin Secretion. Molecular Endocrinology, 2015, 29, 988-1005.	3.7	32
52	Isocitrate-to-SENP1 signaling amplifies insulin secretion and rescues dysfunctional Î² cells. Journal of Clinical Investigation, 2015, 125, 3847-3860.	3.9	148
53	cAMP-independent effects of GLP-1 on Î² cells. Journal of Clinical Investigation, 2015, 125, 4327-4330.	3.9	10
54	Controlling Insulin Secretion: An Exciting TASK. Endocrinology, 2014, 155, 3729-3731.	1.4	1

#	Article	IF	Citations
55	SUMOylation protects against IL-1Î²-induced apoptosis in INS-1 832/13 cells and human islets. American Journal of Physiology - Endocrinology and Metabolism, 2014, 307, E664-E673.	1.8	17
56	SUMO1 enhances cAMPâ€dependent exocytosis and glucagon secretion from pancreatic Î±â€cells. Journal of Physiology, 2014, 592, 3715-3726.	1.3	19
57	Autocrine activation of P2Y1 receptors couples Ca2+ influx to Ca2+ release in human pancreatic beta cells. Diabetologia, 2014, 57, 2535-2545.	2.9	43
58	The role of the transcription factor ETV5 in insulin exocytosis. Diabetologia, 2014, 57, 383-391.	2.9	25
59	Insulin Secretion Induced by Glucose-dependent Insulinotropic Polypeptide Requires Phosphatidylinositol 3-Kinase Î³ in Rodent and Human Î²-Cells. Journal of Biological Chemistry, 2014, 289, 32109-32120.	1.6	21
60	Stem Cells to Insulin Secreting Cells: Two Steps Forward and Now a Time to Pause?. Cell Stem Cell, 2014, 15, 535-536.	5.2	39
61	Dichotomous role of pancreatic HUWE1/MULE/ARF-BP1 in modulating beta cell apoptosis in mice under physiological and genotoxic conditions. Diabetologia, 2014, 57, 1889-1898.	2.9	16
62	Mitochondrial Metabolism of Pyruvate Is Essential for Regulating Glucose-stimulated Insulin Secretion. Journal of Biological Chemistry, 2014, 289, 13335-13346.	1.6	69
63	Distinct and opposing roles for the phosphatidylinositol 3-OH kinase catalytic subunits p110Î± and p110Î² in the regulation of insulin secretion from rodent and human beta cells. Diabetologia, 2013, 56, 1339-1349.	2.9	14
64	Functional Plasticity of the Human Infant Î²-Cell Exocytotic Phenotype. Endocrinology, 2013, 154, 1392-1399.	1.4	15
65	Triton X-100 inhibits L-type voltage-operated calcium channels. Canadian Journal of Physiology and Pharmacology, 2013, 91, 316-324.	0.7	7
66	Intraislet SLITâ€"ROBO signaling is required for beta-cell survival and potentiates insulin secretion. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 16480-16485.	3.3	52
67	SSTR2 is the functionally dominant somatostatin receptor in human pancreatic Î²- and Î±-cells. American Journal of Physiology - Endocrinology and Metabolism, 2012, 303, E1107-E1116.	1.8	119
68	In Vivo Role of Focal Adhesion Kinase in Regulating Pancreatic Î²-Cell Mass and Function Through Insulin Signaling, Actin Dynamics, and Granule Trafficking. Diabetes, 2012, 61, 1708-1718.	0.3	62
69	Glucagon secretion and signaling in the development of diabetes. Frontiers in Physiology, 2012, 3, 349.	1.3	56
70	Novel roles of SUMO in pancreatic Î²-cells: thinking outside the nucleus. Canadian Journal of Physiology and Pharmacology, 2012, 90, 765-770.	0.7	14
71	G protein-coupled receptor (GPR)40-dependent potentiation of insulin secretion in mouse islets is mediated by protein kinase D1. Diabetologia, 2012, 55, 2682-2692.	2.9	139
72	DeSUMOylation Controls Insulin Exocytosis in Response to Metabolic Signals. Biomolecules, 2012, 2, 269-281.	1.8	16

#	Article	IF	Citations
73	The voltage-dependent potassium channel subunit Kv2.1 regulates insulin secretion from rodent and human islets independently of its electrical function. Diabetologia, 2012, 55, 1709-1720.	2.9	40
74	Multivesicular exocytosis in rat pancreatic beta cells. Diabetologia, 2012, 55, 1001-1012.	2.9	35
75	Triton Xâ€100 inhibits Lâ€type voltageâ€operated calcium channels. FASEB Journal, 2012, 26, 1115.15.	0.2	0
76	TRP-ing Down the Path to Insulin Secretion. Diabetes, 2011, 60, 28-29.	0.3	10
77	Islet Cholesterol Accumulation Due to Loss of ABCA1 Leads to Impaired Exocytosis of Insulin Granules. Diabetes, 2011, 60, 3186-3196.	0.3	97
78	Per-arnt-sim (PAS) domain kinase (PASK) as a regulator of glucagon secretion. Diabetologia, 2011, 54, 719-721.	2.9	12
79	SUMOylation Regulates Insulin Exocytosis Downstream of Secretory Granule Docking in Rodents and Humans. Diabetes, 2011, 60, 838-847.	0.3	84
80	Signal integration at the level of ion channel and exocytotic function in pancreatic Î²-cells. American Journal of Physiology - Endocrinology and Metabolism, 2011, 301, E1065-E1069.	1.8	28
81	Voltage-dependent K+ channels are positive regulators of alpha cell action potential generation and glucagon secretion in mice and humans. Diabetologia, 2010, 53, 1917-1926.	2.9	37
82	Inhibition of Â-Cell Sodium-Calcium Exchange Enhances Glucose-Dependent Elevations in Cytoplasmic Calcium and Insulin Secretion. Diabetes, 2010, 59, 1686-1693.	0.3	35
83	Characterization of Erg K+ Channels in Î±- and Î²-Cells of Mouse and Human Islets. Journal of Biological Chemistry, 2009, 284, 30441-30452.	1.6	42
84	SUMOylation regulates Kv2.1 and modulates pancreatic Î²-cell excitability. Journal of Cell Science, 2009, 122, 775-779.	1.2	78
85	Insulin Granule Recruitment and Exocytosis Is Dependent on p110Î³ in Insulinoma and Human Î²-Cells. Diabetes, 2009, 58, 2084-2092.	0.3	60
86	Control of secretory granule access to the plasma membrane by PI3 kinase-Î³. Islets, 2009, 1, 266-268.	0.9	5
87	Kiss-and-run exocytosis and fusion pores of secretory vesicles in human Î²-cells. Pflugers Archiv European Journal of Physiology, 2009, 457, 1343-1350.	1.3	51
88	KATP-channels and glucose-regulated glucagon secretion. Trends in Endocrinology and Metabolism, 2008, 19, 277-284.	3.1	86
89	Investigation of Transport Mechanisms and Regulation of Intracellular Zn2+ in Pancreatic Î±-Cells. Journal of Biological Chemistry, 2008, 283, 10184-10197.	1.6	98
90	Splice Variant-Dependent Regulation of Î²-Cell Sodium-Calcium Exchange by Acyl-Coenzyme As. Molecular Endocrinology, 2008, 22, 2293-2306.	3.7	20

#	Article	IF	Citations
91	Role of Kinin B 2 Receptor Signaling in the Recruitment of Circulating Progenitor Cells With Neovascularization Potential. Circulation Research, 2008, 103, 1335-1343.	2.0	108
92	A KATP Channel-Dependent Pathway within Î± Cells Regulates Glucagon Release from Both Rodent and Human Islets of Langerhans. PLoS Biology, 2007, 5, e143.	2.6	203
93	Hyperpolarization-Activated Cyclic Nucleotide-Gated Channels in Pancreatic Î²-Cells. Molecular Endocrinology, 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 Î² Cells. Journal of General Physiology, 2007, 129, 221-231.	0.9	94
95	The Ins and Outs of Secretion from Pancreatic Î²-Cells: Control of Single-Vesicle Exo- and Endocytosis. Physiology, 2007, 22, 113-121.	1.6	52
96	Release of small transmitters through kiss-and-run fusion pores in rat pancreatic Î² cells. Cell Metabolism, 2006, 4, 283-290.	7.2	127
97	Oscillations, Intercellular Coupling, and Insulin Secretion in Pancreatic Î² Cells. PLoS Biology, 2006, 4, e49.	2.6	68
98	Role of Phosphatidylinositol 3-KinaseÎ³ in the Î²-Cell: Interactions with Glucagon-Like Peptide-1. Endocrinology, 2006, 147, 3318-3325.	1.4	32
99	Calcium increases endocytotic vesicle size and accelerates membrane fission in insulin-secreting INS-1 cells. Journal of Cell Science, 2005, 118, 5911-5920.	1.2	63
100	Glucose-sensing mechanisms in pancreatic Î²-cells. Philosophical Transactions of the Royal Society B: Biological Sciences, 2005, 360, 2211-2225.	1.8	281
101	Regulated Exocytosis and Kiss-and-Run of Synaptic-Like Microvesicles in INS-1 and Primary Rat Â-Cells. Diabetes, 2005, 54, 736-743.	0.3	63
102	A pancreatic islet-specific microRNA regulates insulin secretion. Nature, 2004, 432, 226-230.	13.7	1,932
103	Voltage-dependent K + channels in pancreatic beta cells: Role, regulation and potential as therapeutic targets. Diabetologia, 2003, 46, 1046-1062.	2.9	223
104	Temperature and redox state dependence of native Kv2.1 currents in rat pancreatic Î²â€cells. Journal of Physiology, 2003, 546, 647-653.	1.3	38
105	Antagonism of Rat Î²-Cell Voltage-dependent K+ Currents by Exendin 4 Requires Dual Activation of the cAMP/Protein Kinase A and Phosphatidylinositol 3-Kinase Signaling Pathways. Journal of Biological Chemistry, 2003, 278, 52446-52453.	1.6	98
106	The phosphatidylinositol 3â€kinase inhibitor LY294002 potently blocks Kv currents via a direct mechanism. FASEB Journal, 2003, 17, 720-722.	0.2	75
107	Inhibition of Kv2.1 Voltage-dependent K+Channels in Pancreatic Î²-Cells Enhances Glucose-dependent Insulin Secretion. Journal of Biological Chemistry, 2002, 277, 44938-44945.	1.6	161
108	Glucagon-Like Peptide-1 Receptor Activation Antagonizes Voltage-Dependent Repolarizing K+ Currents in Â-Cells: A Possible Glucose-Dependent Insulinotropic Mechanism. Diabetes, 2002, 51, S443-S447.	0.3	88

#	Article	IF	Citations
109	Synaptosome-Associated Protein of 25 Kilodaltons Modulates Kv2.1 Voltage-Dependent K+ Channels in Neuroendocrine Islet Î²-Cells through an Interaction with the Channel N Terminus. Molecular Endocrinology, 2002, 16, 2452-2461.	3.7	79
110	The Multiple Actions of GLP-1 on the Process of Glucose-Stimulated Insulin Secretion. Diabetes, 2002, 51, S434-S442.	0.3	452
111	Members of the Kv1 and Kv2 Voltage-Dependent K+ Channel Families Regulate Insulin Secretion. Molecular Endocrinology, 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. Molecular Endocrinology, 1999, 13, 1305-1317.	3.7	39
113	Glucagon-like peptide 1 increases insulin sensitivity in depancreatized dogs. Diabetes, 1999, 48, 1045-1053.	0.3	97
114	Overexpression of uncoupling protein 2 inhibits glucose-stimulated insulin secretion from rat islets. Diabetes, 1999, 48, 1482-1486.	0.3	221
115	From Isles of KÃ¶nigsberg to Islets of Langerhans: Examining the Function of the Endocrine Pancreas Through Network Science. Frontiers in Endocrinology, 0, 13, .	1.5	15