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	A pancreatic islet-specific microRNA regulates insulin secretion. Nature, 2004, 432, 226-230.	13.7	1,932
2	The Multiple Actions of GLP-1 on the Process of Glucose-Stimulated Insulin Secretion. Diabetes, 2002, 51, S434-S442.	0.3	452
3	SARS-CoV-2 infects and replicates in cells of the human endocrine and exocrine pancreas. Nature Metabolism, 2021, 3, 149-165.	5.1	378
4	Glucose-sensing mechanisms in pancreatic Î²-cells. Philosophical Transactions of the Royal Society B: Biological Sciences, 2005, 360, 2211-2225.	1.8	281
5	The cell biology of systemic insulin function. Journal of Cell Biology, 2018, 217, 2273-2289.	2.3	270
6	Voltage-dependent K + channels in pancreatic beta cells: Role, regulation and potential as therapeutic targets. Diabetologia, 2003, 46, 1046-1062.	2.9	223
7	Overexpression of uncoupling protein 2 inhibits glucose-stimulated insulin secretion from rat islets. Diabetes, 1999, 48, 1482-1486.	0.3	221
8	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
9	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
10	Patch-Seq Links Single-Cell Transcriptomes to Human Islet Dysfunction in Diabetes. Cell Metabolism, 2020, 31, 1017-1031.e4.	7.2	177
11	Members of the Kv1 and Kv2 Voltage-Dependent K+ Channel Families Regulate Insulin Secretion. Molecular Endocrinology, 2001, 15, 1423-1435.	3.7	176
12	Î² Cell tone is defined by proglucagon peptides through cAMP signaling. JCI Insight, 2019, 4, .	2.3	167
13	Converting Adult Pancreatic Islet Î± Cells into Î² Cells by Targeting Both Dnmt1 and Arx. Cell Metabolism, 2017, 25, 622-634.	7.2	165
14	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
15	Isocitrate-to-SENP1 signaling amplifies insulin secretion and rescues dysfunctional Î² cells. Journal of Clinical Investigation, 2015, 125, 3847-3860.	3.9	148
16	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
17	Release of small transmitters through kiss-and-run fusion pores in rat pancreatic Î² cells. Cell Metabolism, 2006, 4, 283-290.	7.2	127
18	Cystic fibrosisâ€"related diabetes is caused by islet loss and inflammation. JCI Insight, 2018, 3, .	2.3	127

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19	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
20	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
21	TCF1 links GIPR signaling to the control of beta cell function and survival. Nature Medicine, 2016, 22, 84-90.	15.2	108
22	Urea impairs Î² cell glycolysis and insulin secretion in chronic kidney disease. Journal of Clinical Investigation, 2016, 126, 3598-3612.	3.9	99
23	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
24	Investigation of Transport Mechanisms and Regulation of Intracellular Zn2+ in Pancreatic Î±-Cells. Journal of Biological Chemistry, 2008, 283, 10184-10197.	1.6	98
25	Glucagon-like peptide 1 increases insulin sensitivity in depancreatized dogs. Diabetes, 1999, 48, 1045-1053.	0.3	97
26	Islet Cholesterol Accumulation Due to Loss of ABCA1 Leads to Impaired Exocytosis of Insulin Granules. Diabetes, 2011, 60, 3186-3196.	0.3	97
27	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
28	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
29	Genetic variant effects on gene expression in human pancreatic islets and their implications for T2D. Nature Communications, 2020, 11, 4912.	5.8	89
30	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
31	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
32	KATP-channels and glucose-regulated glucagon secretion. Trends in Endocrinology and Metabolism, 2008, 19, 277-284.	3.1	86
33	SUMOylation Regulates Insulin Exocytosis Downstream of Secretory Granule Docking in Rodents and Humans. Diabetes, 2011, 60, 838-847.	0.3	84
34	GLP-1 receptor agonists synergize with DYRK1A inhibitors to potentiate functional human Î² cell regeneration. Science Translational Medicine, 2020, 12, .	5.8	81
35	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
36	SUMOylation regulates Kv2.1 and modulates pancreatic Î²-cell excitability. Journal of Cell Science, 2009, 122, 775-779.	1.2	78

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37	The phosphatidylinositol 3â€kinase inhibitor LY294002 potently blocks Kv currents via a direct mechanism. FASEB Journal, 2003, 17, 720-722.	0.2	75
38	Adenylosuccinate Is an Insulin Secretagogue Derived from Glucose-Induced Purine Metabolism. Cell Reports, 2015, 13, 157-167.	2.9	72
39	Mitochondrial Metabolism of Pyruvate Is Essential for Regulating Glucose-stimulated Insulin Secretion. Journal of Biological Chemistry, 2014, 289, 13335-13346.	1.6	69
40	Oscillations, Intercellular Coupling, and Insulin Secretion in Pancreatic Î² Cells. PLoS Biology, 2006, 4, e49.	2.6	68
41	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
42	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
43	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
44	Interleukin-1 signaling contributes to acute islet compensation. JCI Insight, 2016, 1, e86055.	2.3	63
45	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
46	Insulin Granule Recruitment and Exocytosis Is Dependent on p110Î³ in Insulinoma and Human Î²-Cells. Diabetes, 2009, 58, 2084-2092.	0.3	60
47	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
48	Type 2 diabetes risk alleles in PAM impact insulin release from human pancreatic Î²-cells. Nature Genetics, 2018, 50, 1122-1131.	9.4	59
49	Improvement of islet transplantation by the fusion of islet cells with functional blood vessels. EMBO Molecular Medicine, 2021, 13, e12616.	3.3	57
50	Glucagon secretion and signaling in the development of diabetes. Frontiers in Physiology, 2012, 3, 349.	1.3	56
51	Impaired â€œGlycineâ€•mia in Type 2 Diabetes and Potential Mechanisms Contributing to Glucose Homeostasis. Endocrinology, 2017, 158, 1064-1073.	1.4	56
52	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
53	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
54	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

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55	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
56	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
57	Loss of mTORC1 signaling alters pancreatic Î± cell mass and impairs glucagon secretion. Journal of Clinical Investigation, 2017, 127, 4379-4393.	3.9	44
58	Autocrine activation of P2Y1 receptors couples Ca2+ influx to Ca2+ release in human pancreatic beta cells. Diabetologia, 2014, 57, 2535-2545.	2.9	43
59	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
60	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
61	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
62	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
63	Human islet function following 20Âyears of cryogenic biobanking. Diabetologia, 2015, 58, 1503-1512.	2.9	39
64	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
65	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
66	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
67	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
68	Hyperpolarization-Activated Cyclic Nucleotide-Gated Channels in Pancreatic Î²-Cells. Molecular Endocrinology, 2007, 21, 753-764.	3.7	36
69	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
70	Multivesicular exocytosis in rat pancreatic beta cells. Diabetologia, 2012, 55, 1001-1012.	2.9	35
71	Kv2.1 Clustering Contributes to Insulin Exocytosis and Rescues Human Î²-Cell Dysfunction. Diabetes, 2017, 66, 1890-1900.	0.3	34
72	Role of Phosphatidylinositol 3-KinaseÎ³ in the Î²-Cell: Interactions with Glucagon-Like Peptide-1. Endocrinology, 2006, 147, 3318-3325.	1.4	32

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73	Rp-cAMPS Prodrugs Reveal the cAMP Dependence of First-Phase Glucose-Stimulated Insulin Secretion. Molecular Endocrinology, 2015, 29, 988-1005.	3.7	32
74	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
75	Toward Connecting Metabolism to the Exocytotic Site. Trends in Cell Biology, 2017, 27, 163-171.	3.6	28
76	CRISPR-based genome editing in primary human pancreatic islet cells. Nature Communications, 2021, 12, 2397.	5.8	26
77	The role of the transcription factor ETV5 in insulin exocytosis. Diabetologia, 2014, 57, 383-391.	2.9	25
78	Antiaging Glycopeptide Protects Human Islets Against Tacrolimus-Related Injury and Facilitates Engraftment in Mice. Diabetes, 2016, 65, 451-462.	0.3	23
79	LKB1 couples glucose metabolism to insulin secretion in mice. Diabetologia, 2015, 58, 1513-1522.	2.9	22
80	A role for alternative splicing in circadian control of exocytosis and glucose homeostasis. Genes and Development, 2020, 34, 1089-1105.	2.7	22
81	Combinatorial transcription factor profiles predict mature and functional human islet Î± and Î² cells. JCI Insight, 2021, 6, .	2.3	22
82	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
83	Splice Variant-Dependent Regulation of Î²-Cell Sodium-Calcium Exchange by Acyl-Coenzyme As. Molecular Endocrinology, 2008, 22, 2293-2306.	3.7	20
84	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
85	SUMO1 enhances cAMPâ€dependent exocytosis and glucagon secretion from pancreatic Î±â€cells. Journal of Physiology, 2014, 592, 3715-3726.	1.3	19
86	Vitamin-D-Binding Protein Contributes to the Maintenance of Î± Cell Function and Glucagon Secretion. Cell Reports, 2020, 31, 107761.	2.9	19
87	A glucose-dependent spatial patterning of exocytosis in human Î² cells is disrupted in type 2 diabetes. JCI Insight, 2019, 4, .	2.3	18
88	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
89	Molecular and functional profiling of human islets: from heterogeneity to human phenotypes. Diabetologia, 2020, 63, 2095-2101.	2.9	17
90	DeSUMOylation Controls Insulin Exocytosis in Response to Metabolic Signals. Biomolecules, 2012, 2, 269-281.	1.8	16

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91	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
92	Functional Plasticity of the Human Infant Î²-Cell Exocytotic Phenotype. Endocrinology, 2013, 154, 1392-1399.	1.4	15
93	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
94	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
95	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
96	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
97	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
98	Per-arnt-sim (PAS) domain kinase (PASK) as a regulator of glucagon secretion. Diabetologia, 2011, 54, 719-721.	2.9	12
99	Metabolomics applied to islet nutrient sensing mechanisms. Diabetes, Obesity and Metabolism, 2017, 19, 90-94.	2.2	12
100	A post-translational balancing act: the good and the bad of SUMOylation in pancreatic islets. Diabetologia, 2018, 61, 775-779.	2.9	11
101	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
102	Cryopreservation and post-thaw characterization of dissociated human islet cells. PLoS ONE, 2022, 17, e0263005.	1.1	11
103	TRP-ing Down the Path to Insulin Secretion. Diabetes, 2011, 60, 28-29.	0.3	10
104	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
105	cAMP-independent effects of GLP-1 on Î² cells. Journal of Clinical Investigation, 2015, 125, 4327-4330.	3.9	10
106	Triton X-100 inhibits L-type voltage-operated calcium channels. Canadian Journal of Physiology and Pharmacology, 2013, 91, 316-324.	0.7	7
107	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
108	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

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109	Control of secretory granule access to the plasma membrane by PI3 kinase-Î³. Islets, 2009, 1, 266-268.	0.9	5
110	Improved glucose tolerance with DPPIV inhibition requires Î²â€cell SENP1 amplification of glucoseâ€stimulated insulin secretion. Physiological Reports, 2020, 8, e14420.	0.7	5
111	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
112	Impacts of the COVID-19 pandemic on a human research islet program. Islets, 2022, 14, 101-113.	0.9	3
113	Controlling Insulin Secretion: An Exciting TASK. Endocrinology, 2014, 155, 3729-3731.	1.4	1
114	Novel mouse model expands potential human Î±-cell research. Islets, 2021, 13, 80-83.	0.9	0
115	Triton Xâ€100 inhibits Lâ€type voltageâ€operated calcium channels. FASEB Journal, 2012, 26, 1115.15.	0.2	0