Pierre Maechler

List of Publications by Year
in descending order

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83 papers	6,745 citations	70961 41 h-index	60497 81 g-index
85 all docs	85 docs citations	85 times ranked	8403 citing authors

#	Article	IF	Citations
1	Glucose Sensitivity and Metabolism-Secretion Coupling Studied during Two-Year Continuous Culture in INS-1E Insulinoma Cells. Endocrinology, 2004, 145, 667-678.	1.4	521
2	Mitochondrial function in normal and diabetic Î²-cells. Nature, 2001, 414, 807-812.	13.7	492
3	Mitochondrial glutamate acts as a messenger in glucose-induced insulin exocytosis. Nature, 1999, 402, 685-689.	13.7	462
4	Regulation of Insulin Secretion by SIRT4, a Mitochondrial ADP-ribosyltransferase. Journal of Biological Chemistry, 2007, 282, 33583-33592.	1.6	359
5	Hydrogen Peroxide Alters Mitochondrial Activation and Insulin Secretion in Pancreatic Beta Cells. Journal of Biological Chemistry, 1999, 274, 27905-27913.	1.6	300
6	Dopamine D2-like Receptors Are Expressed in Pancreatic Beta Cells and Mediate Inhibition of Insulin Secretion. Journal of Biological Chemistry, 2005, 280, 36824-36832.	1.6	214
7	New insights into amino acid metabolism, Î²-cell function and diabetes. Clinical Science, 2005, 108, 185-194.	1.8	198
8	Mitochondrial dysfunction in pancreatic Î² cells. Trends in Endocrinology and Metabolism, 2012, 23, 477-487.	3.1	198
9	Hepatocyte Nuclear Factor 4Î± Regulates the Expression of Pancreatic Î²-Cell Genes Implicated in Glucose Metabolism and Nutrient-induced Insulin Secretion. Journal of Biological Chemistry, 2000, 275, 35953-35959.	1.6	190
10	Saturated fatty acidâ€induced insulin resistance is associated with mitochondrial dysfunction in skeletal muscle cells. Journal of Cellular Physiology, 2010, 222, 187-194.	2.0	172
11	Mitochondrial activation directly triggers the exocytosis of insulin in permeabilized pancreatic Î²-cells. EMBO Journal, 1997, 16, 3833-3841.	3.5	171
12	Minireview: New Roles for Peripheral Dopamine on Metabolic Control and Tumor Growth: Letâ€™s Seek the Balance. Endocrinology, 2010, 151, 5570-5581.	1.4	165
13	Pdx1 Level Defines Pancreatic Gene Expression Pattern and Cell Lineage Differentiation. Journal of Biological Chemistry, 2001, 276, 25279-25286.	1.6	150
14	Resveratrol Potentiates Glucose-stimulated Insulin Secretion in INS-1E Î²-Cells and Human Islets through a SIRT1-dependent Mechanism. Journal of Biological Chemistry, 2011, 286, 6049-6060.	1.6	145
15	In beta-cells, mitochondria integrate and generate metabolic signals controlling insulin secretion. International Journal of Biochemistry and Cell Biology, 2006, 38, 696-709.	1.2	123
16	Macrophage-derived glutamine boosts satellite cells and muscle regeneration. Nature, 2020, 587, 626-631.	13.7	119
17	Mitochondrial signals in glucoseâ€stimulated insulin secretion in the beta cell. Journal of Physiology, 2000, 529, 49-56.	1.3	118
18	The Malate-Aspartate NADH Shuttle Member Aralar1 Determines Glucose Metabolic Fate, Mitochondrial Activity, and Insulin Secretion in Beta Cells. Journal of Biological Chemistry, 2004, 279, 55659-55666.	1.6	107

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19	NADPH Oxidase NOX2 Defines a New Antagonistic Role for Reactive Oxygen Species and cAMP/PKA in the Regulation of Insulin Secretion. Diabetes, 2012, 61, 2842-2850.	0.3	100
20	Mitochondrial function and insulin secretion. Molecular and Cellular Endocrinology, 2013, 379, 12-18.	1.6	98
21	The sensitivity of pancreatic Î²-cells to mitochondrial injuries triggered by lipotoxicity and oxidative stress. Biochemical Society Transactions, 2008, 36, 930-934.	1.6	96
22	Free radical modulation of insulin release in INS-1 cells exposed to alloxan. Biochemical Pharmacology, 1999, 57, 639-648.	2.0	93
23	Deletion of Glutamate Dehydrogenase in ÃŸ-Cells Abolishes Part of the Insulin Secretory Response Not Required for Glucose Homeostasis*. Journal of Biological Chemistry, 2009, 284, 921-929.	1.6	88
24	Transient Oxidative Stress Damages Mitochondrial Machinery Inducing Persistent Î²-Cell Dysfunction. Journal of Biological Chemistry, 2009, 284, 23602-23612.	1.6	77
25	Loss of Prohibitin Induces Mitochondrial Damages Altering Î²-Cell Function and Survival and Is Responsible for Gradual Diabetes Development. Diabetes, 2013, 62, 3488-3499.	0.3	76
26	Alteration of the Malonyl-CoA/Carnitine Palmitoyltransferase I Interaction in the Â-Cell Impairs Glucose-Induced Insulin Secretion. Diabetes, 2005, 54, 462-471.	0.3	75
27	Tissue specificity of mitochondrial glutamate pathways and the control of metabolic homeostasis. Biochimica Et Biophysica Acta - Bioenergetics, 2008, 1777, 965-972.	0.5	74
28	Adenovirus-mediated overexpression of liver carnitine palmitoyltransferase I in INS1E cells: effects on cell metabolism and insulin secretion. Biochemical Journal, 2002, 364, 219-226.	1.7	72
29	Increase in cellular glutamate levels stimulates exocytosis in pancreatic Î²-cells. FEBS Letters, 2002, 531, 199-203.	1.3	72
30	Inhibition of Mitochondrial Na+-Ca2+ Exchanger Increases Mitochondrial Metabolism and Potentiates Glucose-Stimulated Insulin Secretion in Rat Pancreatic Islets. Diabetes, 2003, 52, 965-973.	0.3	72
31	GAD65-mediated Glutamate Decarboxylation Reduces Glucose-stimulated Insulin Secretion in Pancreatic Beta Cells. Journal of Biological Chemistry, 2001, 276, 36391-36396.	1.6	70
32	Desensitization of Mitochondrial Ca2+ and Insulin Secretion Responses in the Beta Cell. Journal of Biological Chemistry, 1998, 273, 20770-20778.	1.6	63
33	Secretagogues Modulate the Calcium Concentration in the Endoplasmic Reticulum of Insulin-secreting Cells. Journal of Biological Chemistry, 1999, 274, 12583-12592.	1.6	62
34	Mitochondrial Glutamate Carrier GC1 as a Newly Identified Player in the Control of Glucose-stimulated Insulin Secretion. Journal of Biological Chemistry, 2009, 284, 25004-25014.	1.6	59
35	Role of Mitochondria in Î²-cell Function and Dysfunction. Advances in Experimental Medicine and Biology, 2010, 654, 193-216.	0.8	58
36	Implication of Glutamate in the Kinetics of Insulin Secretion in Rat and Mouse Perfused Pancreas. Diabetes, 2002, 51, S99-S102.	0.3	57

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37	Deletion of glutamate dehydrogenase 1 (<i><scp>G</scp>lud1</i>) in the central nervous system affects glutamate handling without altering synaptic transmission. Journal of Neurochemistry, 2012, 123, 342-348.	2.1	52
38	Mitochondria-derived glutamate at the interplay between branched-chain amino acid and glucose-induced insulin secretion. FEBS Letters, 2003, 545, 167-172.	1.3	49
39	GDH-Dependent Glutamate Oxidation in the Brain Dictates Peripheral Energy Substrate Distribution. Cell Reports, 2015, 13, 365-375.	2.9	49
40	Epigallocatechin-3-gallate (EGCG) activates AMPK through the inhibition of glutamate dehydrogenase in muscle and pancreatic ÃŸ-cells: A potential beneficial effect in the pre-diabetic state?. International Journal of Biochemistry and Cell Biology, 2017, 88, 220-225.	1.2	48
41	Silencing of the mitochondrial NADH shuttle component aspartateâ€“glutamate carrier AGC1/Aralar1 in INS-1E cells and rat islets. Biochemical Journal, 2009, 424, 459-466.	1.7	44
42	From pancreatic islets to central nervous system, the importance of glutamate dehydrogenase for the control of energy homeostasis. Neurochemistry International, 2011, 59, 510-517.	1.9	41
43	Delineation of glutamate pathways and secretory responses in pancreatic islets with Î²-cellâ€“specific abrogation of the glutamate dehydrogenase. Molecular Biology of the Cell, 2012, 23, 3851-3862.	0.9	39
44	Bone Regulates Browning and Energy Metabolism Through Mature Osteoblast/Osteocyte PPARÎ³ Expression. Diabetes, 2017, 66, 2541-2554.	0.3	36
45	Glutamate dehydrogenase is essential to sustain neuronal oxidative energy metabolism during stimulation. Journal of Cerebral Blood Flow and Metabolism, 2018, 38, 1754-1768.	2.4	36
46	Integrative Genomics Outlines a Biphasic Glucose Response and a ChREBP-RORÎ³ Axis Regulating Proliferation in Î² Cells. Cell Reports, 2016, 16, 2359-2372.	2.9	34
47	Liver Glutamate Dehydrogenase Controls Whole-Body Energy Partitioning Through Amino Acidâ€“Derived Gluconeogenesis and Ammonia Homeostasis. Diabetes, 2018, 67, 1949-1961.	0.3	34
48	Modulation of Glutamate Generation in Mitochondria Affects Hormone Secretion in INS-1E Beta Cells. IUBMB Life, 2000, 50, 27-31.	1.5	33
49	Beta-cell mitochondrial carriers and the diabetogenic stress response. Biochimica Et Biophysica Acta - Molecular Cell Research, 2016, 1863, 2540-2549.	1.9	33
50	Upregulation of UCP2 in beta-cells confers partial protection against both oxidative stress and glucotoxicity. Redox Biology, 2017, 13, 541-549.	3.9	33
51	In vivo stabilization of OPA1 in hepatocytes potentiates mitochondrial respiration and gluconeogenesis in a prohibitin-dependent way. Journal of Biological Chemistry, 2019, 294, 12581-12598.	1.6	33
52	Resveratrol-activated SIRT1 in liver and pancreatic Î²-cells: a Janus head looking to the same direction of metabolic homeostasis. Aging, 2011, 3, 444-449.	1.4	32
53	Dietary excess regulates absorption and surface of gut epithelium through intestinal PPARÎ±. Nature Communications, 2021, 12, 7031.	5.8	32
54	Diabetogenic milieus induce specific changes in mitochondrial transcriptome and differentiation of human pancreatic islets. Human Molecular Genetics, 2015, 24, 5270-5284.	1.4	31

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55	AMPâ€activated protein kinase (AMPK) regulates astrocyte oxidative metabolism by balancing TCA cycle dynamics. Glia, 2020, 68, 1824-1839.	2.5	31
56	Non-canonical glutamine transamination sustains efferocytosis by coupling redox buffering to oxidative phosphorylation. Nature Metabolism, 2021, 3, 1313-1326.	5.1	31
57	Metabolomics Identifies a Biomarker Revealing In Vivo Loss of Functional Î²-Cell Mass Before Diabetes Onset. Diabetes, 2019, 68, 2272-2286.	0.3	28
58	Chronic fructose renders pancreatic Î²-cells hyper-responsive to glucose-stimulated insulin secretion through extracellular ATP signaling. American Journal of Physiology - Endocrinology and Metabolism, 2019, 317, E25-E41.	1.8	28
59	Mitochondrial activation and the pyruvate paradox in a human cell line. FEBS Letters, 2004, 578, 224-228.	1.3	26
60	Glutamate pathways of the beta-cell and the control of insulin secretion. Diabetes Research and Clinical Practice, 2017, 131, 149-153.	1.1	26
61	Glutamate Dehydrogenaseâ€“Deficient Mice Display Schizophrenia-Like Behavioral Abnormalities and CA1-Specific Hippocampal Dysfunction. Schizophrenia Bulletin, 2019, 45, 127-137.	2.3	26
62	Beta cell glutamate receptor antagonists: novel oral antidiabetic drugs?. Nature Medicine, 2015, 21, 310-311.	15.2	24
63	Overexpression of the malateâ€“aspartate NADH shuttle member Aralar1 in the clonal Î²-cell line BRIN-BD11 enhances amino-acid-stimulated insulin secretion and cell metabolism. Clinical Science, 2009, 117, 321-330.	1.8	22
64	Changes in Mitochondrial Carriers Exhibit Stress-Specific Signatures in INS-1EÎ²-Cells Exposed to Glucose Versus Fatty Acids. PLoS ONE, 2013, 8, e82364.	1.1	21
65	The antiepileptic drug topiramate preserves metabolism-secretion coupling in insulin secreting cells chronically exposed to the fatty acid oleate. Biochemical Pharmacology, 2006, 72, 965-973.	2.0	20
66	Identification of the molecular dysfunction caused by glutamate dehydrogenase S445L mutation responsible for hyperinsulinism/hyperammonemia. Human Molecular Genetics, 2017, 26, 3453-3465.	1.4	18
67	AMPK Profiling in Rodent and Human Pancreatic Beta-Cells under Nutrient-Rich Metabolic Stress. International Journal of Molecular Sciences, 2020, 21, 3982.	1.8	18
68	Development of Mice with Brain-Specific Deletion of Floxed Glud1 (Glutamate Dehydrogenase 1) Using Cre Recombinase Driven by the Nestin Promoter. Neurochemical Research, 2014, 39, 456-459.	1.6	17
69	Palmitate and oleate modify membrane fluidity and kinase activities of INS-1E Î²-cells alongside altered metabolism-secretion coupling. Biochimica Et Biophysica Acta - Molecular Cell Research, 2020, 1867, 118619.	1.9	17
70	Mitochondrial Hormesis in Pancreatic<i>Î²</i>Cells: Does Uncoupling Protein 2 Play a Role?. Oxidative Medicine and Cellular Longevity, 2012, 2012, 1-9.	1.9	16
71	The Amplifying Pathway of the Î²-Cell Contributes to Diet-induced Obesity. Journal of Biological Chemistry, 2016, 291, 13063-13075.	1.6	16
72	A role for pancreatic beta-cell secretory hyperresponsiveness in catch-up growth hyperinsulinemia: Relevance to thrifty catch-up fat phenotype and risks for type 2 diabetes. Nutrition and Metabolism, 2011, 8, 2.	1.3	14

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73	Glutamate Dehydrogenase Is Important for Ammonia Fixation and Amino Acid Homeostasis in Brain During Hyperammonemia. Frontiers in Neuroscience, 2021, 15, 646291.	1.4	13
74	Glucolipotoxicity promotes the capacity of the glycerolipid/NEFA cycle supporting the secretory response of pancreatic beta cells. Diabetologia, 2022, 65, 705-720.	2.9	13
75	Hyperinsulinism associated with GLUD1 mutation: allosteric regulation and functional characterization of p.G446V glutamate dehydrogenase. Human Genomics, 2020, 14, 9.	1.4	12
76	Mitochondrial signal transduction in pancreatic Î²-cells. Best Practice and Research in Clinical Endocrinology and Metabolism, 2012, 26, 739-752.	2.2	11
77	Mitochondrial Carriers Regulating Insulin Secretion Profiled in Human Islets upon Metabolic Stress. Biomolecules, 2020, 10, 1543.	1.8	9
78	Lipid-Induced Adaptations of the Pancreatic Beta-Cell to Glucotoxic Conditions Sustain Insulin Secretion. International Journal of Molecular Sciences, 2022, 23, 324.	1.8	9
79	Activation of Nicotinic Acetylcholine Receptors Decreases Apoptosis in Human and Female Murine Pancreatic Islets. Endocrinology, 2016, 157, 3800-3808.	1.4	8
80	Brain endothelial cells metabolize glutamate via glutamate dehydrogenase to replenish TCAâ€intermediates and produce ATP under hypoglycemic conditions. Journal of Neurochemistry, 2020, 157, 1861-1875.	2.1	8
81	Resveratrol long-term treatment differentiates INS-1E beta-cell towards improved glucose response and insulin secretion. Pflugers Archiv European Journal of Physiology, 2019, 471, 337-345.	1.3	7
82	Reply to Mishra: Prohibitin heterodimersâ€”a complex time dependence for carcinogenesis. Journal of Biological Chemistry, 2019, 294, 14837.	1.6	1
83	Mitochondria in endocrinology. Best Practice and Research in Clinical Endocrinology and Metabolism, 2012, 26, 709-710.	2.2	0