Gerald A Dienel

List of Publications by Year
in descending order

91 papers	6,749 citations	81900 39 h-index	64796 79 g-index
96 all docs	96 docs citations	96 times ranked	6237 citing authors

#	Article	IF	Citations
1	Glucose sparing by glycogenolysis (GSG) determines the relationship between brain metabolism and neurotransmission. Journal of Cerebral Blood Flow and Metabolism, 2022, 42, 844-860.	4.3	24
2	Brain glycogen content is increased in the acute and interictal chronic stages of the mouse pilocarpine model of epilepsy. Epilepsia Open, 2022, 7, 361-367.	2.4	6
3	Stop the rot. Enzyme inactivation at brain harvest prevents artifacts. Journal of Neurochemistry, 2021, 158, 1007-1031.	3.9	14
4	Metabolomic and Imaging Mass Spectrometric Assays of Labile Brain Metabolites: Critical Importance of Brain Harvest Procedures. Neurochemical Research, 2020, 45, 2586-2606.	3.3	11
5	Reevaluation of Astrocyte-Neuron Energy Metabolism with Astrocyte Volume Fraction Correction: Impact on Cellular Glucose Oxidation Rates, Glutamateâ€“Glutamine Cycle Energetics, Glycogen Levels and Utilization Rates vs. Exercising Muscle, and Na+/K+ Pumping Rates. Neurochemical Research, 2020, 45, 2607-2630.	3.3	28
6	Hypothesis: A Novel Neuroprotective Role for Glucose-6-phosphatase (G6PC3) in Brainâ€"To Maintain Energy-Dependent Functions Including Cognitive Processes. Neurochemical Research, 2020, 45, 2529-2552.	3.3	6
7	Metabolomic Assays of Postmortem Brain Extracts: Pitfalls in Extrapolation of Concentrations of Glucose and Amino Acids to Metabolic Dysregulation In Vivo in Neurological Diseases. Neurochemical Research, 2019, 44, 2239-2260.	3.3	12
8	Development of a Model to Test Whether Glycogenolysis Can Support Astrocytic Energy Demands of Na+, K+-ATPase and Glutamate-Glutamine Cycling, Sparing an Equivalent Amount of Glucose for Neurons. Advances in Neurobiology, 2019, 23, 385-433.	1.8	9
9	Does shuttling of glycogenâ€derived lactate from astrocytes to neurons take place during neurotransmission and memory consolidation?. Journal of Neuroscience Research, 2019, 97, 863-882.	2.9	42
10	The â€œprotectedâ€•glucose transport through the astrocytic endoplasmic reticulum is too slow to serve as a quantitativelyâ€important highway for nutrient delivery. Journal of Neuroscience Research, 2019, 97, 854-862.	2.9	10
11	Brain Glucose Metabolism: Integration of Energetics with Function. Physiological Reviews, 2019, 99, 949-1045.	28.8	442
12	Major Advances in Brain Glycogen Research: Understanding of the Roles of Glycogen Have Evolved from Emergency Fuel Reserve to Dynamic, Regulated Participant in Diverse Brain Functions. Advances in Neurobiology, 2019, 23, 1-16.	1.8	20
13	Glycogenolysis in Cerebral Cortex During Sensory Stimulation, Acute Hypoglycemia, and Exercise: Impact on Astrocytic Energetics, Aerobic Glycolysis, and Astrocyte-Neuron Interactions. Advances in Neurobiology, 2019, 23, 209-267.	1.8	22
14	Introduction to the Thematic Minireview Series: Brain glycogen metabolism. Journal of Biological Chemistry, 2018, 293, 7087-7088.	3.4	3
15	Cellular Origin of [¹⁸F]FDG-PET Imaging Signals During Ceftriaxone-Stimulated Glutamate Uptake: Astrocytes and Neurons. Neuroscientist, 2018, 24, 316-328.	3.5	13
16	Trajectories of Brain Lactate and Re-visited Oxygen-Glucose Index Calculations Do Not Support Elevated Non-oxidative Metabolism of Glucose Across Childhood. Frontiers in Neuroscience, 2018, 12, 631.	2.8	12
17	The metabolic trinity, glucoseâ€“glycogenâ€“lactate, links astrocytes and neurons in brain energetics, signaling, memory, and gene expression. Neuroscience Letters, 2017, 637, 18-25.	2.1	74
18	Determination of Glucose Utilization Rates in Cultured Astrocytes and Neurons with [14C]deoxyglucose: Progress, Pitfalls, and Discovery of Intracellular Glucose Compartmentation. Neurochemical Research, 2017, 42, 50-63.	3.3	9

#	ARTICLE	IF	CITATIONS
19	Lack of appropriate stoichiometry: Strong evidence against an energetically important astrocyteâ€"neuron lactate shuttle in brain. Journal of Neuroscience Research, 2017, 95, 2103-2125.	2.9	131
20	Organ Distribution of 13N Following Intravenous Injection of [13N]Ammonia into Portacaval-Shunted Rats. Neurochemical Research, 2017, 42, 1683-1696.	3.3	4
21	Fluxes of Lactate Into, From, and Among Gap Junction-Coupled Astroglia and Their Interaction With Noradrenaline. , 2017, , 145-166.		3
22	In memoriam Louis Sokoloff, M.D. 1921â€"2015. Journal of Cerebral Blood Flow and Metabolism, 2016, 36, 278-280.	4.3	1
23	Aerobic glycolysis during brain activation: adrenergic regulation and influence of norepinephrine on astrocytic metabolism. Journal of Neurochemistry, 2016, 138, 14-52.	3.9	118
24	Microdialysate concentration changes do not provide sufficient information to evaluate metabolic effects of lactate supplementation in brain-injured patients. Journal of Cerebral Blood Flow and Metabolism, 2016, 36, 1844-1864.	4.3	18
25	Biochemical, Metabolic, and Behavioral Characteristics of Immature Chronic Hyperphenylalanemic Rats. Neurochemical Research, 2016, 41, 16-32.	3.3	4
26	Contributions of glycogen to astrocytic energetics during brain activation. Metabolic Brain Disease, 2015, 30, 281-298.	2.9	90
27	Fluxes of lactate into, from, and among gap junction-coupled astrocytes and their interaction with noradrenaline. Frontiers in Neuroscience, 2014, 8, 261.	2.8	49
28	A dogmaâ€breaking concept: glutamate oxidation in astrocytes is the source of lactate during aerobic glycolysis in resting subjects. Journal of Neurochemistry, 2014, 131, 395-398.	3.9	45
29	Energy Metabolism in the Brain. , 2014, , 53-117.		8
30	Reduced clearance of proteins labeled with diisopropylfluorophosphate in portacaval-shunted rats. Metabolic Brain Disease, 2014, 29, 1041-1052.	2.9	2
31	Rapid manifestation of reactive astrogliosis in acute hippocampal brain slices. Glia, 2014, 62, 78-95.	4.9	71
32	Lactate Shuttling and Lactate use as Fuel after Traumatic Brain Injury: Metabolic Considerations. Journal of Cerebral Blood Flow and Metabolism, 2014, 34, 1736-1748.	4.3	66
33	Astrocytic energetics during excitatory neurotransmission: What are contributions of glutamate oxidation and glycolysis?. Neurochemistry International, 2013, 63, 244-258.	3.8	96
34	Sugar for the brain: the role of glucose in physiological and pathological brain function. Trends in Neurosciences, 2013, 36, 587-597.	8.6	1,082
35	The unfolded protein response to endoplasmic reticulum stress in cultured astrocytes and rat brain during experimental diabetes. Neurochemistry International, 2013, 62, 784-795.	3.8	33
36	Regional registration of [6â€¹⁴C]glucose metabolism during brain activation of Î±â€syntrophin knockout mice. Journal of Neurochemistry, 2013, 125, 247-259.	3.9	9

#	Article	IF	Citations
37	Energy Metabolism of the Brain. , 2012, , 200-231.		79
38	Fueling and Imaging Brain Activation. ASN Neuro, 2012, 4, AN20120021.	2.7	134
39	Brain Lactate Metabolism: The Discoveries and the Controversies. Journal of Cerebral Blood Flow and Metabolism, 2012, 32, 1107-1138.	4.3	396
40	Exploring and Mapping the World of Astrocytes. Neurochemical Research, 2012, 37, 2295-2298.	3.3	2
41	Reduced gap junctional communication among astrocytes in experimental diabetes: Contributions of altered connexin protein levels and oxidativeâ€"nitrosative modifications. Journal of Neuroscience Research, 2011, 89, 2052-2067.	2.9	34
42	Astrocytic Gap Junctional Communication is Reduced in Amyloid-Î²-Treated Cultured Astrocytes, but not in Alzheimer's Disease Transgenic Mice. ASN Neuro, 2010, 2, AN20100017.	2.7	25
43	Trafficking of Glucose, Lactate, and Amyloid-Î² from the Inferior Colliculus through Perivascular Routes. Journal of Cerebral Blood Flow and Metabolism, 2010, 30, 162-176.	4.3	78
44	Astrocytes are â€˜Good Scoutsâ€™: Being Prepared Also Helps Neighboring Neurons. Journal of Cerebral Blood Flow and Metabolism, 2010, 30, 1893-1894.	4.3	15
45	Hyperglycaemia and Diabetes Impair Gap Junctional Communication among Astrocytes. ASN Neuro, 2010, 2, AN20090048.	2.7	88
46	Exchangeâ€mediated dilution of brain lactate specific activity: implications for the origin of glutamate dilution and the contributions of glutamine dilution and other pathways. Journal of Neurochemistry, 2009, 109, 30-37.	3.9	35
47	Selective astrocytic gap junctional trafficking of molecules involved in the glycolytic pathway: impact on cellular brain imaging. Journal of Neurochemistry, 2009, 110, 857-869.	3.9	44
48	Astrocytes are poised for lactate trafficking and release from activated brain and for supply of glucose to neurons. Journal of Neurochemistry, 2009, 111, 522-536.	3.9	138
49	Imaging Brain Activation. Annals of the New York Academy of Sciences, 2008, 1147, 139-170.	3.8	40
50	Functional imaging of focal brain activation in conscious rats: Impact of [14C]glucose metabolite spreading and release. Journal of Neuroscience Research, 2007, 85, 3254-3266.	2.9	64
51	Astrocytic connexin distributions and rapid, extensive dye transfer via gap junctions in the inferior colliculus: Implications for [14C]glucose metabolite trafficking. Journal of Neuroscience Research, 2007, 85, 3267-3283.	2.9	45
52	Energy Metabolism in Astrocytes: High Rate of Oxidative Metabolism and Spatiotemporal Dependence on Glycolysis/Glycogenolysis. Journal of Cerebral Blood Flow and Metabolism, 2007, 27, 219-249.	4.3	516
53	A glycogen phosphorylase inhibitor selectively enhances local rates of glucose utilization in brain during sensory stimulation of conscious rats: implications for glycogen turnover. Journal of Neurochemistry, 2007, 102, 466-478.	3.9	111
54	Astrocyte activation <i>in vivo</i> during graded photic stimulation. Journal of Neurochemistry, 2007, 103, 1506-1522.	3.9	28

#	Article	IF	Citations
55	Astrocyte activation in working brain: Energy supplied by minor substrates. Neurochemistry International, 2006, 48, 586-595.	3.8	77
56	Activation of astrocytes in brain of conscious rats during acoustic stimulation: acetate utilization in working brain. Journal of Neurochemistry, 2005, 92, 934-947.	3.9	84
57	Astrocytic contributions to bioenergetics of cerebral ischemia. Glia, 2005, 50, 362-388.	4.9	134
58	Lactate transport and transporters: General principles and functional roles in brain cells. Journal of Neuroscience Research, 2005, 79, 11-18.	2.9	138
59	Lactate muscles its way into consciousness: fueling brain activation. American Journal of Physiology - Regulatory Integrative and Comparative Physiology, 2004, 287, R519-R521.	1.8	10
60	Nutrition during brain activation: does cell-to-cell lactate shuttling contribute significantly to sweet and sour food for thought?. Neurochemistry International, 2004, 45, 321-351.	3.8	153
61	Glial biology: functional interactions among glia and neurons. Neurochemistry International, 2004, 45, 189-190.	3.8	1
62	Behavioral training increases local astrocytic metabolic activity but does not alter outcome of mild transient ischemia. Brain Research, 2003, 961, 201-212.	2.2	12
63	Effect of reactive cell density on net [2-14C]acetate uptake into rat brain: labeling of clusters containing GFAP+- and lectin+-immunoreactive cells. Neurochemistry International, 2003, 42, 359-374.	3.8	8
64	Neighborly interactions of metabolically-activated astrocytes in vivo. Neurochemistry International, 2003, 43, 339-354.	3.8	84
65	Energy metabolism in the brain. International Review of Neurobiology, 2002, 51, 1-IN4.	2.0	122
66	Regional Reductions of Transketolase in Thiamine-Deficient Rat Brain. Journal of Neurochemistry, 2002, 67, 684-691.	3.9	19
67	High Glycogen Levels in Brains of Rats with Minimal Environmental Stimuli: Implications for Metabolic Contributions of Working Astrocytes. Journal of Cerebral Blood Flow and Metabolism, 2002, 22, 1476-1489.	4.3	158
68	Generalized Sensory Stimulation of Conscious Rats Increases Labeling of Oxidative Pathways of Glucose Metabolism When the Brain Glucoseâ€"Oxygen Uptake Ratio Rises. Journal of Cerebral Blood Flow and Metabolism, 2002, 22, 1490-1502.	4.3	106
69	Î²-Adrenergics enhance brain extraction of levodopa. Movement Disorders, 2002, 17, 54.	3.9	2
70	High Glycogen Levels in Brains of Rats With Minimal Environmental Stimuli: Implications for Metabolic Contributions of Working Astrocytes. Journal of Cerebral Blood Flow and Metabolism, 2002, , 1476-1489.	4.3	60
71	Generalized Sensory Stimulation of Conscious Rats Increases Labeling of Oxidative Pathways of Glucose Metabolism When the Brain Glucose???Oxygen Uptake Ratio Rises. Journal of Cerebral Blood Flow and Metabolism, 2002, , 1490-1502.	4.3	35
72	Local uptake of14C-labeled acetate and butyrate in rat brain in vivo during spreading cortical depression. Journal of Neuroscience Research, 2001, 66, 812-820.	2.9	47

#	Article	IF	Citations
73	Glucose and lactate metabolism during brain activation. Journal of Neuroscience Research, 2001, 66, 824-838.	2.9	282
74	Enhanced Acetate and Glucose Utilization during Graded Photic Stimulation: Neuronal-Glial Interactions in Vivo. Annals of the New York Academy of Sciences, 1999, 893, 279-281.	3.8	11
75	Rapid Efflux of Lactate from Cerebral Cortex during K+-Induced Spreading Cortical Depression. Journal of Cerebral Blood Flow and Metabolism, 1999, 19, 380-392.	4.3	83
76	Cerebral Oxygen/Glucose Ratio is Low during Sensory Stimulation and Rises above Normal during Recovery: Excess Glucose Consumption during Stimulation is Not Accounted for by Lactate Efflux from or Accumulation in Brain Tissue. Journal of Cerebral Blood Flow and Metabolism, 1999, 19, 393-400.	4.3	163
77	Determination of local brain glucose level with [14C]methylglucose: effects of glucose supply and demand. American Journal of Physiology - Endocrinology and Metabolism, 1997, 273, E839-E849.	3.5	19
78	Influence of Glucose Supply and Demand on Determination of Brain Glucose Content with Labeled Methylglucose. Journal of Cerebral Blood Flow and Metabolism, 1996, 16, 439-449.	4.3	22
79	Labeling of Metabolic Pools by [6-¹⁴C]Glucose during K⁺-Induced Stimulation of Glucose Utilization in Rat Brain. Journal of Cerebral Blood Flow and Metabolism, 1995, 15, 97-110.	4.3	57
80	Analysis of Time Courses of Metabolic Precursors and Products in Heterogeneous Rat Brain Tissue: Limitations of Kinetic Modeling for Predictions of Intracompartmental Concentrations from Total Tissue Activity. Journal of Cerebral Blood Flow and Metabolism, 1995, 15, 474-484.	4.3	9
81	Brain Glucose Levels in Portacaval-Shunted Rats with Chronic, Moderate Hyperammonemia: Implications for Determination of Local Cerebral Glucose Utilization. Journal of Cerebral Blood Flow and Metabolism, 1994, 14, 113-124.	4.3	13
82	Metabolites of 2-Deoxy-[14C]Glucose in Plasma and Brain: Influence on Rate of Glucose Utilization Determined with Deoxyglucose Method in Rat Brain. Journal of Cerebral Blood Flow and Metabolism, 1993, 13, 315-327.	4.3	29
83	Synthesis of Deoxyglucose-1-Phosphate, Deoxyglucose-1,6-Bisphosphate, and Other Metabolites of 2-Deoxy-D-[14C]Glucose in Rat Brain In Vivo: Influence of Time and Tissue Glucose Level. Journal of Neurochemistry, 1993, 60, 2217-2231.	3.9	31
84	Direct Measurement of the Î» of the Lumped Constant of the Deoxyglucose Method in Rat Brain: Determination of Î» and Lumped Constant from Tissue Glucose Concentration or Equilibrium Brain/Plasma Distribution Ratio for Methylglucose. Journal of Cerebral Blood Flow and Metabolism, 1991, 11, 25-34.	4.3	72
85	Modeling the Dependence of Hexose Distribution Volumes in Brain on Plasma Glucose Concentration: Implications for Estimation of the Local 2-Deoxyglucose Lumped Constant. Journal of Cerebral Blood Flow and Metabolism, 1991, 11, 171-182.	4.3	49
86	Acid Lability of Metabolites of 2-Deoxyglucose in Rat Brain: Implications for Estimates of Kinetic Parameters of Deoxyglucose Phosphorylation and Transport Between Blood and Brain. Journal of Neurochemistry, 1990, 54, 1440-1448.	3.9	33
87	Metabolic Stability of 3-O-Methyl-d-Glucose in Brain and Other Tissues. Journal of Neurochemistry, 1990, 55, 989-1000.	3.9	34
88	Direct Chemical Measurement of the Î» of the Lumped Constant of the [14C]Deoxyglucose Method in Rat Brain: Effects of Arterial Plasma Glucose Level on the Distribution Spaces of [14C]Deoxyglucose and Glucose and on Î». Journal of Cerebral Blood Flow and Metabolism, 1989, 9, 304-314.	4.3	36
89	Deoxyglucose-6-Phosphate Stability In Vivo and the Deoxyglucose Method: Response to Comments of Hawkins and Miller. Journal of Neurochemistry, 1987, 49, 1949-1960.	3.9	35
90	Chronic Hyperphenylalaninemia Produces Cerebral Hyperglycinemia in Immature Rats. Journal of Neurochemistry, 1981, 36, 34-43.	3.9	15

#	Article	IF	Citations
91	Distribution of mitochondrial enzymes between the perikaryal and synaptic fractions of immature and adult rat brain. Biochimica Et Biophysica Acta - General Subjects, 1977, 496, 484-494.	2.4	46