Vascular Compartmentalization of Functional Hyperem

Neuron

99, 362-375.e4

DOI: 10.1016/j.neuron.2018.06.012

Citation Report

#	Article	IF	Citations
1	The Relation Between Capillary Transit Times and Hemoglobin Saturation Heterogeneity. Part 2: Capillary Networks. Frontiers in Physiology, 2018, 9, 1296.	1.3	19
2	Optical imaging and modulation of neurovascular responses. Journal of Cerebral Blood Flow and Metabolism, 2018, 38, 2057-2072.	2.4	17
3	Keeping the Brain Well Fed: The Role of Capillaries and Arterioles in Orchestrating Functional Hyperemia. Neuron, 2018, 99, 248-250.	3.8	9
4	Targeting pericytes for therapeutic approaches to neurological disorders. Acta Neuropathologica, 2018, 136, 507-523.	3.9	165
5	Unbiased Analysis Method for Measurement of Red Blood Cell Size and Velocity With Laser Scanning Microscopy. Frontiers in Neuroscience, 2019, 13, 644.	1.4	17
6	Vascular and neural basis of the BOLD signal. Current Opinion in Neurobiology, 2019, 58, 61-69.	2.0	89
7	Purinergic Signaling in the Vertebrate Olfactory System. Frontiers in Cellular Neuroscience, 2019, 13, 112.	1.8	22
9	Retinal ischemia induces Î±-SMA-mediated capillary pericyte contraction coincident with perivascular glycogen depletion. Acta Neuropathologica Communications, 2019, 7, 134.	2.4	44
10	Red blood cells stabilize flow in brain microvascular networks. PLoS Computational Biology, 2019, 15, e1007231.	1.5	41
11	Pericytes. Stroke, 2019, 50, 2985-2991.	1.0	26
12	Cellular Control of Brain Capillary Blood Flow: In Vivo Imaging Veritas. Trends in Neurosciences, 2019, 42, 528-536.	4.2	48
13	Brain Capillary Networks Across Species: A few Simple Organizational Requirements Are Sufficient to Reproduce Both Structure and Function. Frontiers in Physiology, 2019, 10, 233.	1.3	70
14	Microvascular bioengineering: a focus on pericytes. Journal of Biological Engineering, 2019, 13, 26.	2.0	31
15	Resolving the Micro-Macro Disconnect to Address Core Features of Seizure Networks. Neuron, 2019, 101, 1016-1028.	3.8	43
16	Mesoscopic and microscopic imaging of sensory responses in the same animal. Nature Communications, 2019, 10, 1110.	5.8	66
17	Domainâ€specific distribution of gap junctions defines cellular coupling to establish a vascular relay in the retina. Journal of Comparative Neurology, 2019, 527, 2675-2693.	0.9	25
18	Cerebral oxygenation during locomotion is modulated by respiration. Nature Communications, 2019, 10, 5515.	5.8	54
19	What is the key mediator of the neurovascular coupling response?. Neuroscience and Biobehavioral Reviews, 2019, 96, 174-181.	2.9	117

#	Article	IF	Citations
20	â€œAnatomical mechanism of ideation, association and attentionâ€•[1895] and â€œCertain points in neurological histophysiologyâ€•[1896]: Cajalâ€™s conjectures, then and now. Journal of Chemical Neuroanatomy, 2020, 104, 101702.	1.0	1
21	Optogenetic assessment of VIP, PV, SOM and NOS inhibitory neuron activity and cerebral blood flow regulation in mouse somato-sensory cortex. Journal of Cerebral Blood Flow and Metabolism, 2020, 40, 1427-1440.	2.4	56
22	Group 1 metabotropic glutamate receptors trigger glutamate-induced intracellular Ca2+ signals and nitric oxide release in human brain microvascular endothelial cells. Cellular and Molecular Life Sciences, 2020, 77, 2235-2253.	2.4	32
23	Sublaminaâ€specific organization of the blood brain barrier in the mouse olfactory nerve layer. Glia, 2020, 68, 631-645.	2.5	16
24	Postnatal development of cerebrovascular structure and the neurogliovascular unit. Wiley Interdisciplinary Reviews: Developmental Biology, 2020, 9, e363.	5.9	84
25	Intercellular Conduction Optimizes Arterial Network Function and Conserves Blood Flow Homeostasis During Cerebrovascular Challenges. Arteriosclerosis, Thrombosis, and Vascular Biology, 2020, 40, 733-750.	1.1	23
26	Contractile pericytes determine the direction of blood flow at capillary junctions. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 27022-27033.	3.3	127
27	Of neurons and pericytes: The neuro-vascular approach to diabetic retinopathy. Visual Neuroscience, 2020, 37, E005.	0.5	11
28	Vasculo-Neuronal Coupling and Neurovascular Coupling at the Neurovascular Unit: Impact of Hypertension. Frontiers in Physiology, 2020, 11, 584135.	1.3	46
29	Denser brain capillary network with preserved pericytes in Alzheimer's disease. Brain Pathology, 2020, 30, 1071-1086.	2.1	19
30	Functional hyperemia drives fluid exchange in the paravascular space. Fluids and Barriers of the CNS, 2020, 17, 52.	2.4	42
31	Cerebral blood flow decrease as an early pathological mechanism in Alzheimer's disease. Acta Neuropathologica, 2020, 140, 793-810.	3.9	154
32	Spatial and temporal patterns of nitric oxide diffusion and degradation drive emergent cerebrovascular dynamics. PLoS Computational Biology, 2020, 16, e1008069.	1.5	24
33	The Ion Channel and GPCR Toolkit of Brain Capillary Pericytes. Frontiers in Cellular Neuroscience, 2020, 14, 601324.	1.8	33
34	Predicting Vessel Diameter Changes to Up-Regulate Biphasic Blood Flow During Activation in Realistic Microvascular Networks. Frontiers in Physiology, 2020, 11, 566303.	1.3	8
35	Transfer functions linking neural calcium to single voxel functional ultrasound signal. Nature Communications, 2020, 11, 2954.	5.8	55
36	The pericyte connectome: spatial precision of neurovascular coupling is driven by selective connectivity maps of pericytes and endothelial cells and is disrupted in diabetes. Cell Discovery, 2020, 6, 39.	3.1	58
37	Functional ultrasound imaging of deep visual cortex in awake nonhuman primates. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 14453-14463.	3.3	44

#	Article	IF	Citations
38	Neuron-oligodendroglia interactions: Activity-dependent regulation of cellular signaling. Neuroscience Letters, 2020, 727, 134916.	1.0	28
39	Acute Ablation of Cortical Pericytes Leads to Rapid Neurovascular Uncoupling. Frontiers in Cellular Neuroscience, 2020, 14, 27.	1.8	50
40	F-actin polymerization contributes to pericyte contractility in retinal capillaries. Experimental Neurology, 2020, 332, 113392.	2.0	26
41	Small Vessel Disease-Related Dementia: An Invalid Neurovascular Coupling?. International Journal of Molecular Sciences, 2020, 21, 1095.	1.8	42
42	Precapillary sphincters maintain perfusion in the cerebral cortex. Nature Communications, 2020, 11, 395.	5.8	104
43	Mild pericyte deficiency is associated with aberrant brain microvascular flow in aged PDGFRÎ²^{+/â^’} mice. Journal of Cerebral Blood Flow and Metabolism, 2020, 40, 2387-2400.	2.4	28
44	Brain Microvascular Pericytes in Vascular Cognitive Impairment and Dementia. Frontiers in Aging Neuroscience, 2020, 12, 80.	1.7	139
45	A quantitative analysis of cell-specific contributions and the role of anesthetics to the neurovascular coupling. NeuroImage, 2020, 215, 116827.	2.1	7
46	Ultraâ€high spatial resolution BOLD fMRI in humans using combined segmentedâ€accelerated VFAâ€FLEET with a recursive RF pulse design. Magnetic Resonance in Medicine, 2021, 85, 120-139.	1.9	15
47	Postsynaptic activity of inhibitory neurons evokes hemodynamic fMRI responses. NeuroImage, 2021, 225, 117457.	2.1	9
48	Astrocytes in the regulation of cerebrovascular functions. Glia, 2021, 69, 817-841.	2.5	51
49	More than just summed neuronal activity: how multiple cell types shape the BOLD response. Philosophical Transactions of the Royal Society B: Biological Sciences, 2021, 376, 20190630.	1.8	34
50	Obesity in Midlife Hampers Resting and Sensoryâ€Evoked Cerebral Blood Flow in Mice. Obesity, 2021, 29, 150-158.	1.5	10
51	ATP induces contraction of cultured brain capillary pericytes via activation of P2Y-type purinergic receptors. American Journal of Physiology - Heart and Circulatory Physiology, 2021, 320, H699-H712.	1.5	14
52	Imaging and optogenetic modulation of vascular mural cells in the live brain. Nature Protocols, 2021, 16, 472-496.	5.5	32
53	Single Cortical Microinfarcts Lead to Widespread Microglia/Macrophage Migration Along the White Matter. Cerebral Cortex, 2021, 31, 248-266.	1.6	16
54	Retinaâ€specific targeting of pericytes reveals structural diversity and enables control of capillary blood flow. Journal of Comparative Neurology, 2021, 529, 1121-1134.	0.9	20
56	In Vivo Optical Imaging and Manipulation of Brain Pericytes. Pancreatic Islet Biology, 2021, , 1-37.	0.1	1

#	Article	IF	Citations
57	Imaging the response to deep brain stimulation in rodent using functional ultrasound. Physics in Medicine and Biology, 2021, 66, 05LT01.	1.6	8
58	Brain capillary pericytes exert a substantial but slow influence on blood flow. Nature Neuroscience, 2021, 24, 633-645.	7.1	195
59	Pericyte mechanics and mechanobiology. Journal of Cell Science, 2021, 134, .	1.2	28
60	Differential pial and penetrating arterial responses examined by optogenetic activation of astrocytes and neurons. Journal of Cerebral Blood Flow and Metabolism, 2021, 41, 2676-2689.	2.4	13
61	Role of endothelium-pericyte signaling in capillary blood flow response to neuronal activity. Journal of Cerebral Blood Flow and Metabolism, 2021, 41, 1873-1885.	2.4	19
62	Brain capillary pericytes and neurovascular coupling. Comparative Biochemistry and Physiology Part A, Molecular & Integrative Physiology, 2021, 254, 110893.	0.8	28
63	Neurovascular coupling and oxygenation are decreased in hippocampus compared to neocortex because of microvascular differences. Nature Communications, 2021, 12, 3190.	5.8	87
64	Integrative analysis of the human brain mural cell transcriptome. Journal of Cerebral Blood Flow and Metabolism, 2021, 41, 3052-3068.	2.4	15
65	Fluid transport in the brain. Physiological Reviews, 2022, 102, 1025-1151.	13.1	192
67	Single-trial decoding of movement intentions using functional ultrasound neuroimaging. Neuron, 2021, 109, 1554-1566.e4.	3.8	51
68	Iliski, a software for robust calculation of transfer functions. PLoS Computational Biology, 2021, 17, e1008614.	1.5	2
69	A suite of neurophotonic tools to underpin the contribution of internal brain states in fMRI. Current Opinion in Biomedical Engineering, 2021, 18, 100273.	1.8	6
70	Pericytes for Therapeutic Approaches to Ischemic Stroke. Frontiers in Neuroscience, 2021, 15, 629297.	1.4	15
71	Endothelial signaling at the core of neurovascular coupling: The emerging role of endothelial inward-rectifier K+ (Kir2.1) channels and N-methyl-d-aspartate receptors in the regulation of cerebral blood flow. International Journal of Biochemistry and Cell Biology, 2021, 135, 105983.	1.2	16
72	Precapillary sphincters and pericytes at first-order capillaries as key regulators for brain capillary perfusion. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	52
73	Distinct signatures of calcium activity in brain mural cells. ELife, 2021, 10, .	2.8	31
74	Diversity of neurovascular coupling dynamics along vascular arbors in layer II/III somatosensory cortex. Communications Biology, 2021, 4, 855.	2.0	23
75	Neurovascular Coupling in Development and Disease: Focus on Astrocytes. Frontiers in Cell and Developmental Biology, 2021, 9, 702832.	1.8	48

#	Article	IF	Citations
76	Local IP ₃ receptorâ€“mediated Ca ²⁺ signals compound to direct blood flow in brain capillaries. Science Advances, 2021, 7, .	4.7	46
77	Revisiting the neurovascular unit. Nature Neuroscience, 2021, 24, 1198-1209.	7.1	242
78	Neurovascular crosstalk coordinates the central nervous system development. Current Opinion in Neurobiology, 2021, 69, 202-213.	2.0	40
79	Diverse mechanisms regulating brain energy supply at the capillary level. Current Opinion in Neurobiology, 2021, 69, 41-50.	2.0	13
80	Assessment of single-vessel cerebral blood velocity by phase contrast fMRI. PLoS Biology, 2021, 19, e3000923.	2.6	9
81	Imaging faster neural dynamics with fast fMRI: A need for updated models of the hemodynamic response. Progress in Neurobiology, 2021, 207, 102174.	2.8	49
82	Regulation of cerebral blood flow in humans: physiology and clinical implications of autoregulation. Physiological Reviews, 2021, 101, 1487-1559.	13.1	303
83	NMDA receptors elicit flux-independent intracellular Ca2+ signals via metabotropic glutamate receptors and flux-dependent nitric oxide release in human brain microvascular endothelial cells. Cell Calcium, 2021, 99, 102454.	1.1	18
84	Pericytes in Retinal. Pancreatic Islet Biology, 2021, , 125-144.	0.1	0
85	Time-dependent spatial specificity of high-resolution fMRI: insights into mesoscopic neurovascular coupling. Philosophical Transactions of the Royal Society B: Biological Sciences, 2021, 376, 20190623.	1.8	11
94	Pericyte morphology and function. Histology and Histopathology, 2021, 36, 633-643.	0.5	18
95	VasoMetrics: unbiased spatiotemporal analysis of microvascular diameter in multi-photon imaging applications. Quantitative Imaging in Medicine and Surgery, 2020, 11, 969-982.	1.1	34
96	nNOS-expressing interneurons control basal and behaviorally evoked arterial dilation in somatosensory cortex of mice. ELife, 2020, 9, .	2.8	45
97	Neurovascular coupling and bilateral connectivity during NREM and REM sleep. ELife, 2020, 9, .	2.8	66
98	Iptakalim improves cerebral microcirculation in mice after ischemic stroke by inhibiting pericyte contraction. Acta Pharmacologica Sinica, 2022, 43, 1349-1359.	2.8	12
99	Pericyte Control of Blood Flow Across Microvascular Zones in the Central Nervous System. Annual Review of Physiology, 2022, 84, 331-354.	5.6	86
100	Contribution of animal models toward understanding resting state functional connectivity. NeuroImage, 2021, 245, 118630.	2.1	27
105	New Insights in the Complexity and Functionality of the Neurovascular Unit. Handbook of Experimental Pharmacology, 2020, , 33-57.	0.9	5

#	Article	IF	Citations
110	Dilation of cortical capillaries is not related to astrocyte calcium signaling. Glia, 2022, 70, 508-521.	2.5	19
111	In Mice and Humans, Brain Vascular Barrier Homeostasis and Contractility Are Acquired Postnatally. SSRN Electronic Journal, 0, , .	0.4	0
112	High-speed optical coherence tomography angiography for the measurement of stimulus-induced retrograde vasodilation of cerebral pial arteries in awake mice. Neurophotonics, 2020, 7, 030502.	1.7	3
113	Contractile apparatus in CNS capillary pericytes. Neurophotonics, 2022, 9, 021904.	1.7	6
114	Behavioral and physiological monitoring for awake neurovascular coupling experiments: a how-to guide. Neurophotonics, 2022, 9, .	1.7	7
115	Bloodâ€“brain barrier link to human cognitive impairment and Alzheimerâ€™s disease. , 2022, 1, 108-115.		45
117	Temporal alterations in pericytes at the acute phase of ischemia/reperfusion in the mouse brain. Neural Regeneration Research, 2022, 17, 2247.	1.6	10
118	Hierarchical regularization of solution ambiguity in underdetermined inverse and optimization problems. Journal of Computational Physics: X, 2022, 13, 100105.	1.1	0
119	Gradual Not Sudden Change: Multiple Sites of Functional Transition Across the Microvascular Bed. Frontiers in Aging Neuroscience, 2021, 13, 779823.	1.7	7
120	Deep Learning and Simulation for the Estimation of Red Blood Cell Flux With Optical Coherence Tomography. Frontiers in Neuroscience, 2022, 16, 835773.	1.4	0
123	The oxygen initial dip in the brain of anesthetized and awake mice. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, e2200205119.	3.3	4
124	The Ca2+-gated channel TMEM16A amplifies capillary pericyte contraction and reduces cerebral blood flow after ischemia. Journal of Clinical Investigation, 2022, 132, .	3.9	46
125	Measurement of Blood Velocity With Laser Scanning Microscopy: Modeling and Comparison of Line-Scan Image-Processing Algorithms. Frontiers in Physiology, 2022, 13, 848002.	1.3	0
126	Toward an integrative neurovascular framework for studying brain networks. Neurophotonics, 2022, 9, 032211.	1.7	3
132	Targeting endothelial ion signalling to rescue cerebral blood flow in cerebral disorders. Vascular Pharmacology, 2022, 145, 106997.	1.0	8
133	Immuneâ€“vascular mural cell interactions: consequences for immune cell trafficking, cerebral blood flow, and the bloodâ€“brain barrier. Neurophotonics, 2022, 9, 031914.	1.7	12
134	Neurovascular coupling mechanisms in health and neurovascular uncoupling in Alzheimerâ€™s disease. Brain, 2022, 145, 2276-2292.	3.7	30
135	The (ultra)sound of neurons firing. Neuron, 2022, 110, 1599-1600.	3.8	0

#	Article	IF	Citations
137	Cells of the Bloodâ€“Brain Barrier: An Overview of the Neurovascular Unit in Health and Disease. Methods in Molecular Biology, 2022, , 3-24.	0.4	26
138	Ex vivo capillary-parenchymal arteriole approach to study brain pericyte physiology. Neurophotonics, 2022, 9, .	1.7	2
139	Quantitative relationship between cerebrovascular network and neuronal cell types in mice. Cell Reports, 2022, 39, 110978.	2.9	18
140	Cranial and Spinal Window Preparation for in vivo Optical Neuroimaging in Rodents and Related Experimental Techniques. Experimental Neurobiology, 2022, 31, 131-146.	0.7	3
141	Functional Ultrasound Neuroimaging. Annual Review of Neuroscience, 2022, 45, 491-513.	5.0	12
142	Hyperoxia evokes pericyte-mediated capillary constriction. Journal of Cerebral Blood Flow and Metabolism, 2022, 42, 2032-2047.	2.4	10
145	Functional ultrasound localization microscopy reveals brain-wide neurovascular activity on a microscopic scale. Nature Methods, 2022, 19, 1004-1012.	9.0	41
147	Cranial window for longitudinal and multimodal imaging of the whole mouse cortex. Neurophotonics, 2022, 9, .	1.7	9
148	The glymphatic system: Current understanding and modeling. IScience, 2022, 25, 104987.	1.9	85
149	3D optogenetic control of arteriole diameter in vivo. ELife, 0, 11, .	2.8	6
150	Pericyte remodeling is deficient in the aged brain and contributes to impaired capillary flow and structure. Nature Communications, 2022, 13, .	5.8	30
153	In mice and humans, brain microvascular contractility matures postnatally. Brain Structure and Function, 2023, 228, 475-492.	1.2	4
154	In vivo methods for imaging bloodâ€“brain barrier function and dysfunction. European Journal of Nuclear Medicine and Molecular Imaging, 2023, 50, 1051-1083.	3.3	14
155	Astrocytes amplify neurovascular coupling to sustained activation of neocortex in awake mice. Nature Communications, 2022, 13, .	5.8	14
156	Measuring capillary flow dynamics using interlaced two-photon volumetric scanning. Journal of Cerebral Blood Flow and Metabolism, 2023, 43, 595-609.	2.4	5
157	Altered hemodynamics and vascular reactivity in a mouse model with severe pericyte deficiency. Journal of Cerebral Blood Flow and Metabolism, 2023, 43, 763-777.	2.4	1
158	Cytochrome P450-derived eicosanoids in brain: From basic discovery to clinical translation. Advances in Pharmacology, 2023, , 283-326.	1.2	0
159	Brain capillary pericytes are metabolic sentinels that control blood flow through a KATP channel-dependent energy switch. Cell Reports, 2022, 41, 111872.	2.9	11

#	Article	IF	Citations
160	Noradrenaline released from locus coeruleus axons contracts cerebral capillary pericytes via Î±₂ adrenergic receptors. Journal of Cerebral Blood Flow and Metabolism, 2023, 43, 1142-1152.	2.4	8
161	Spontaneous vasomotion propagates along pial arterioles in the awake mouse brain like stimulus-evoked vascular reactivity. Journal of Cerebral Blood Flow and Metabolism, 2023, 43, 1752-1763.	2.4	3
162	Capillary responses to functional and pathological activations rely on the capillary states at rest. Journal of Cerebral Blood Flow and Metabolism, 0, , 0271678X2311563.	2.4	0
163	Targeting Astrocyte Signaling Alleviates Cerebrovascular and Synaptic Function Deficits in a Diet-Based Mouse Model of Small Cerebral Vessel Disease. Journal of Neuroscience, 2023, 43, 1797-1813.	1.7	5
164	An optimized bioluminescent substrate for non-invasive imaging in the brain. Nature Chemical Biology, 2023, 19, 731-739.	3.9	20
165	Pericytes and the Control of Blood Flow in Brain and Heart. Annual Review of Physiology, 2023, 85, 137-164.	5.6	9
166	Intraluminal pressure elevates intracellular calcium and contracts CNS pericytes: Role of voltage-dependent calcium channels. Proceedings of the National Academy of Sciences of the United States of America, 2023, 120, .	3.3	8
167	Emerging Links between Cerebral Blood Flow Regulation and Cognitive Decline: A Role for Brain Microvascular Pericytes. , 2022, .		2
168	A tight squeeze: how do we make sense of small changes in microvascular diameter?. Journal of Physiology, 2023, 601, 2263-2272.	1.3	3
177	Myelination-independent functions of oligodendrocyte precursor cells in health and disease. Nature Neuroscience, 2023, 26, 1663-1669.	7.1	5