Ken Arai

List of Publications by Year
in descending order

120 papers	5,910 citations	66315 42 h-index	79644 73 g-index
124 all docs	124 docs citations	124 times ranked	7425 citing authors

#	Article	IF	Citations
1	Lipoprotein receptorâ€“mediated induction of matrix metalloproteinase by tissue plasminogen activator. Nature Medicine, 2003, 9, 1313-1317.	15.2	434
2	Pathophysiologic Cascades in Ischemic Stroke. International Journal of Stroke, 2012, 7, 378-385.	2.9	319
3	Brain angiogenesis in developmental and pathological processes: neurovascular injury and angiogenic recovery after stroke. FEBS Journal, 2009, 276, 4644-4652.	2.2	238
4	Tissue Plasminogen Activator Promotes Matrix Metalloproteinase-9 Upregulation After Focal Cerebral Ischemia. Stroke, 2005, 36, 1954-1959.	1.0	215
5	An Oligovascular Niche: Cerebral Endothelial Cells Promote the Survival and Proliferation of Oligodendrocyte Precursor Cells. Journal of Neuroscience, 2009, 29, 4351-4355.	1.7	214
6	Astrocytes Promote Oligodendrogenesis after White Matter Damage via Brain-Derived Neurotrophic Factor. Journal of Neuroscience, 2015, 35, 14002-14008.	1.7	183
7	Astrocytic high-mobility group box 1 promotes endothelial progenitor cell-mediated neurovascular remodeling during stroke recovery. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 7505-7510.	3.3	170
8	Three-Dimensional Blood-Brain Barrier Model for in vitro Studies of Neurovascular Pathology. Scientific Reports, 2015, 5, 15222.	1.6	162
9	Oligodendrocyte precursors induce early blood-brain barrier opening after white matter injury. Journal of Clinical Investigation, 2013, 123, 782-6.	3.9	140
10	Oxidative Stress Interferes With White Matter Renewal After Prolonged Cerebral Hypoperfusion in Mice. Stroke, 2013, 44, 3516-3521.	1.0	130
11	Oligodendrocyte Precursor Cells Support Blood-Brain Barrier Integrity via TGF-Î² Signaling. PLoS ONE, 2014, 9, e103174.	1.1	127
12	Dual effects of carbon monoxide on pericytes and neurogenesis in traumatic brain injury. Nature Medicine, 2016, 22, 1335-1341.	15.2	123
13	Vascular Endothelial Growth Factor Regulates the Migration of Oligodendrocyte Precursor Cells. Journal of Neuroscience, 2011, 31, 10666-10670.	1.7	122
14	Essential role for ERK mitogen-activated protein kinase in matrix metalloproteinase-9 regulation in rat cortical astrocytes. Glia, 2003, 43, 254-264.	2.5	117
15	Cellular Mechanisms of Neurovascular Damage and Repair After Stroke. Journal of Child Neurology, 2011, 26, 1193-1198.	0.7	114
16	TRPM2 Channel Aggravates CNS Inflammation and Cognitive Impairment via Activation of Microglia in Chronic Cerebral Hypoperfusion. Journal of Neuroscience, 2018, 38, 3520-3533.	1.7	102
17	Crosstalk between oligodendrocytes and cerebral endothelium contributes to vascular remodeling after white matter injury. Glia, 2012, 60, 875-881.	2.5	100
18	Mechanisms and targets for angiogenic therapy after stroke. Cell Adhesion and Migration, 2009, 3, 216-223.	1.1	99

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19	Injury and repair in the neurovascular unit. Neurological Research, 2012, 34, 325-330.	0.6	93
20	Age-Related Decline in Oligodendrogenesis Retards White Matter Repair in Mice. Stroke, 2013, 44, 2573-2578.	1.0	90
21	Potential interactions between pericytes and oligodendrocyte precursor cells in perivascular regions of cerebral white matter. Neuroscience Letters, 2015, 597, 164-169.	1.0	87
22	Astrocyte-Derived Pentraxin 3 Supports Bloodâ€“Brain Barrier Integrity Under Acute Phase of Stroke. Stroke, 2016, 47, 1094-1100.	1.0	86
23	Crosstalk between cerebral endothelium and oligodendrocyte. Cellular and Molecular Life Sciences, 2014, 71, 1055-1066.	2.4	85
24	Biphasic Mechanisms of Neurovascular Unit Injury and Protection in CNS Diseases. CNS and Neurological Disorders - Drug Targets, 2013, 12, 302-315.	0.8	85
25	Astrocytes protect oligodendrocyte precursor cells via MEK/ERK and PI3K/Akt signaling. Journal of Neuroscience Research, 2010, 88, 758-763.	1.3	81
26	Mechanisms of oligodendrocyte regeneration from ventricular-subventricular zone-derived progenitor cells in white matter diseases. Frontiers in Cellular Neuroscience, 2013, 7, 275.	1.8	81
27	Heterogeneity of microglia and their differential roles in white matter pathology. CNS Neuroscience and Therapeutics, 2019, 25, 1290-1298.	1.9	74
28	Novel lipoxygenase inhibitors as neuroprotective reagents. Journal of Neuroscience Research, 2008, 86, 904-909.	1.3	73
29	Oligovascular Signaling in White Matter Stroke. Biological and Pharmaceutical Bulletin, 2009, 32, 1639-1644.	0.6	72
30	Edaravone, a free radical scavenger, protects components of the neurovascular unit against oxidative stress in vitro. Brain Research, 2010, 1307, 22-27.	1.1	69
31	Interleukin-1Î² Augments Angiogenic Responses of Murine Endothelial Progenitor Cells<i>in Vitro</i>. Journal of Cerebral Blood Flow and Metabolism, 2009, 29, 933-943.	2.4	66
32	Endothelial Progenitor Cell Secretome and Oligovascular Repair in a Mouse Model of Prolonged Cerebral Hypoperfusion. Stroke, 2018, 49, 1003-1010.	1.0	66
33	Involvement of ERK MAP kinase in endoplasmic reticulum stress in SH-SY5Y human neuroblastoma cells. Journal of Neurochemistry, 2004, 89, 232-239.	2.1	61
34	Experimental models for analysis of oligodendrocyte pathophysiology in stroke. Experimental & Translational Stroke Medicine, 2009, 1, 6.	3.2	60
35	Mechanisms of cellâ€“cell interaction in oligodendrogenesis and remyelination after stroke. Brain Research, 2015, 1623, 135-149.	1.1	58
36	Reactive astrocytes promote adhesive interactions between brain endothelium and endothelial progenitor cells via HMGB1 and beta-2 integrin signaling. Stem Cell Research, 2014, 12, 531-538.	0.3	55

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37	Cerebral endothelial derived vascular endothelial growth factor promotes the migration but not the proliferation of oligodendrocyte precursor cells in vitro. Neuroscience Letters, 2012, 513, 42-46.	1.0	52
38	Mechanisms of Axonal Damage and Repair after Central Nervous System Injury. Translational Stroke Research, 2017, 8, 14-21.	2.3	52
39	Highâ€mobility group box 1 from reactive astrocytes enhances the accumulation of endothelial progenitor cells in damaged white matter. Journal of Neurochemistry, 2013, 125, 273-280.	2.1	51
40	Diffuse microvascular dysfunction and loss of white matter integrity predict poor outcomes in patients with acute ischemic stroke. Journal of Cerebral Blood Flow and Metabolism, 2018, 38, 75-86.	2.4	51
41	Subcortical ischemic vascular disease: Roles of oligodendrocyte function in experimental models of subcortical white-matter injury. Journal of Cerebral Blood Flow and Metabolism, 2016, 36, 187-198.	2.4	47
42	Transcriptomic characterization of microglia activation in a rat model of ischemic stroke. Journal of Cerebral Blood Flow and Metabolism, 2020, 40, S34-S48.	2.4	47
43	A free radical scavenger edaravone suppresses systemic inflammatory responses in a rat transient focal ischemia model. Neuroscience Letters, 2016, 633, 7-13.	1.0	46
44	Role of Perivascular Oligodendrocyte Precursor Cells in Angiogenesis After Brain Ischemia. Journal of the American Heart Association, 2019, 8, e011824.	1.6	44
45	Targeting the Neurovascular Unit in Brain Trauma. CNS Neuroscience and Therapeutics, 2015, 21, 304-308.	1.9	43
46	Effects of ischemic postâ€conditioning on neuronal <scp>VEGF</scp> regulation and microglial polarization in a rat model of focal cerebral ischemia. Journal of Neurochemistry, 2018, 146, 160-172.	2.1	43
47	Effects of Postconditioning on Neurogenesis and Angiogenesis During the Recovery Phase After Focal Cerebral Ischemia. Stroke, 2015, 46, 2691-2694.	1.0	42
48	White-matter repair: Interaction between oligodendrocytes and the neurovascular unit. Brain Circulation, 2018, 4, 118.	0.7	41
49	Two-photon microscopic imaging of capillary red blood cell flux in mouse brain reveals vulnerability of cerebral white matter to hypoperfusion. Journal of Cerebral Blood Flow and Metabolism, 2020, 40, 501-512.	2.4	38
50	Oxidative Stress Biomarkers of Brain Damage. Stroke, 2018, 49, 630-637.	1.0	36
51	Early molecular oxidative stress biomarkers of ischemic penumbra in acute stroke. Neurology, 2019, 93, e1288-e1298.	1.5	36
52	CD200 restrains macrophage attack on oligodendrocyte precursors via toll-like receptor 4 downregulation. Journal of Cerebral Blood Flow and Metabolism, 2016, 36, 781-793.	2.4	35
53	Cis P-tau underlies vascular contribution to cognitive impairment and dementia and can be effectively targeted by immunotherapy in mice. Science Translational Medicine, 2021, 13, .	5.8	34
54	Combination therapy with normobaric oxygen (NBO) plus thrombolysis in experimental ischemic stroke. BMC Neuroscience, 2009, 10, 79.	0.8	32

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55	AKAP12 Mediates Barrier Functions of Fibrotic Scars during CNS Repair. PLoS ONE, 2014, 9, e94695.	1.1	31
56	Adrenomedullin promotes differentiation of oligodendrocyte precursor cells into myelin-basic-protein expressing oligodendrocytes under pathological conditions in vitro. Stem Cell Research, 2015, 15, 68-74.	0.3	31
57	Prompt meningeal reconstruction mediated by oxygen-sensitive AKAP12 scaffolding protein after central nervous system injury. Nature Communications, 2014, 5, 4952.	5.8	30
58	A-Kinase Anchor Protein 12 Is Required for Oligodendrocyte Differentiation in Adult White Matter. Stem Cells, 2018, 36, 751-760.	1.4	27
59	p38 MAP kinase mediates transforming-growth factor-Î²1-induced upregulation of matrix metalloproteinase-9 but not -2 in human brain pericytes. Brain Research, 2014, 1593, 1-8.	1.1	26
60	Molecular Mechanisms of Oligodendrocyte Regeneration in White Matter-Related Diseases. International Journal of Molecular Sciences, 2018, 19, 1743.	1.8	26
61	Differential roles of epigenetic regulators in the survival and differentiation of oligodendrocyte precursor cells. Glia, 2019, 67, 718-728.	2.5	26
62	Induction of Vascular Endothelial Growth Factor and Matrix Metalloproteinase-9 via CD47 Signaling in Neurovascular Cells. Neurochemical Research, 2010, 35, 1092-1097.	1.6	25
63	A radical scavenger edaravone inhibits matrix metalloproteinase-9 upregulation and bloodâ€"brain barrier breakdown in a mouse model of prolonged cerebral hypoperfusion. Neuroscience Letters, 2014, 573, 40-45.	1.0	25
64	Oligodendrogenesis after traumatic brain injury. Behavioural Brain Research, 2018, 340, 205-211.	1.2	25
65	White Matter Hyperintensity Volume Correlates with Matrix Metalloproteinase-2 in Acute Ischemic Stroke. Journal of Stroke and Cerebrovascular Diseases, 2014, 23, 1300-1306.	0.7	24
66	Role of oligodendrocyte-neurovascular unit in white matter repair. Neuroscience Letters, 2018, 684, 175-180.	1.0	24
67	Promoting Neuro-Supportive Properties of Astrocytes with Epidermal Growth Factor Hydrogels. Stem Cells Translational Medicine, 2019, 8, 1242-1248.	1.6	24
68	Protective effects of a radical scavenger edaravone on oligodendrocyte precursor cells against oxidative stress. Neuroscience Letters, 2018, 668, 120-125.	1.0	23
69	Treadmill Exercise Suppresses Cognitive Decline and Increases White Matter Oligodendrocyte Precursor Cells in a Mouse Model of Prolonged Cerebral Hypoperfusion. Translational Stroke Research, 2020, 11, 496-502.	2.3	22
70	Magnesium sulfate protects oligodendrocyte lineage cells in a rat cell-culture model of hypoxicâ€"ischemic injury. Neuroscience Research, 2016, 106, 66-69.	1.0	19
71	High-Mobility Group Box 1: An Amplifier of Stem and Progenitor Cell Activity After Stroke. , 2013, 118, 31-38.		19
72	Sphingosine kinase inhibition ameliorates chronic hypoperfusion-induced white matter lesions. Neurochemistry International, 2016, 94, 90-97.	1.9	18

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73	Differential Effects of Isoxazole-9 on Neural Stem/Progenitor Cells, Oligodendrocyte Precursor Cells, and Endothelial Progenitor Cells. PLoS ONE, 2015, 10, e0138724.	1.1	14
74	Can oligodendrocyte precursor cells be a therapeutic target for mitigating cognitive decline in cerebrovascular disease?. Journal of Cerebral Blood Flow and Metabolism, 2020, 40, 1735-1736.	2.4	14
75	Soluble vascular endothelial-cadherin in CSF after subarachnoid hemorrhage. Neurology, 2020, 94, e1281-e1293.	1.5	14
76	Comparative transcriptome of neurons after oxygenâ€“glucose deprivation: Potential differences in neuroprotection versus reperfusion. Journal of Cerebral Blood Flow and Metabolism, 2018, 38, 2236-2250.	2.4	13
77	A Novel Three-Dimensional Culture System for Oligodendrocyte Precursor Cells. Stem Cells and Development, 2017, 26, 1078-1085.	1.1	12
78	Different responses after intracerebral hemorrhage between young and early middle-aged mice. Neuroscience Letters, 2020, 735, 135249.	1.0	12
79	Discovery of a novel 2,3,11,11a-tetrahydro-1H-pyrazino[1,2-b]isoquinoline-1,4(6H)-dione series promoting neurogenesis of human neural progenitor cells. Bioorganic and Medicinal Chemistry Letters, 2015, 25, 3748-3753.	1.0	11
80	Neuregulin1â€Î² decreases interleukinâ€1Î²â€induced RhoA activation, myosin light chain phosphorylation, and endothelial hyperpermeability. Journal of Neurochemistry, 2016, 136, 250-257.	2.1	11
81	AKAP12 Supports Blood-Brain Barrier Integrity against Ischemic Stroke. International Journal of Molecular Sciences, 2020, 21, 9078.	1.8	11
82	Mature Adult Mice With Exercise-Preconditioning Show Better Recovery After Intracerebral Hemorrhage. Stroke, 2021, 52, 1861-1865.	1.0	11
83	Wiring and plumbing: Oligodendrocyte precursors and angiogenesis in the oligovascular niche. Journal of Cerebral Blood Flow and Metabolism, 2021, 41, 2132-2133.	2.4	11
84	Diffusion tensor-MRI detects exercise-induced neuroplasticity in the hippocampal microstructure in mice. Brain Plasticity, 2020, 5, 147-159.	1.9	10
85	Brief overview: Protective roles of astrocyte-derived pentraxin-3 in blood-brain barrier integrity. Brain Circulation, 2019, 5, 145.	0.7	10
86	Microglial responses after phagocytosis: <i>Escherichia <scp>coli</scp></i> bioparticles, but not cell debris or amyloid beta, induce matrix metalloproteinaseâ€9 secretion in cultured rat primary microglial cells. Glia, 2020, 68, 1435-1444.	2.5	9
87	Biphasic roles of pentraxin 3 in cerebrovascular function after white matter stroke. CNS Neuroscience and Therapeutics, 2021, 27, 60-70.	1.9	8
88	Clinical application of oligodendrocyte precursor cells for cell-based therapy. Brain Circulation, 2016, 2, 121.	0.7	8
89	Bloodâ€“Brain Barrier Mechanisms in Stroke and Trauma. Handbook of Experimental Pharmacology, 2020, , 267-293.	0.9	7
90	From in vitro to in vivo reprogramming for neural transdifferentiation: An approach for CNS tissue remodeling using stem cell technology. Journal of Cerebral Blood Flow and Metabolism, 2020, 40, 1739-1751.	2.4	6

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91	ErbB3 is a critical regulator of cytoskeletal dynamics in brain microvascular endothelial cells: Implications for vascular remodeling and blood brain barrier modulation. Journal of Cerebral Blood Flow and Metabolism, 2021, 41, 2242-2255.	2.4	6
92	Recent updates on mechanisms of cell-cell interaction in oligodendrocyte regeneration after white matter injury. Neuroscience Letters, 2020, 715, 134650.	1.0	5
93	Transcriptome Profiling of Mouse Corpus Callosum After Cerebral Hypoperfusion. Frontiers in Cell and Developmental Biology, 2021, 9, 685261.	1.8	5
94	Brief review: Can modulating DNA methylation state help the clinical application of oligodendrocyte precursor cells as a source of stem cell therapy?. Brain Research, 2019, 1723, 146386.	1.1	4
95	Brain Angiogenesis After Stroke. , 2017, , 473-494.		3
96	Roles of A-kinase Anchor Protein 12 in Astrocyte and Oligodendrocyte Precursor Cell in Postnatal Corpus Callosum. Stem Cell Reviews and Reports, 2021, 17, 1446-1455.	1.7	3
97	A radical scavenger edaravone and oligodendrocyte protection/regeneration. Neural Regeneration Research, 2018, 13, 1550.	1.6	3
98	From cell to cell: The breakdown of intercellular connectivity after stroke and how to regain contact. Brain Research, 2015, 1623, 1-2.	1.1	2
99	High Mobility Group A1 Regulates Transcription Levels of Oligodendrocyte Marker Genes in Cultured Oligodendrocyte Precursor Cells. International Journal of Molecular Sciences, 2022, 23, 2236.	1.8	2
100	Crosstalk Between Cerebral Endothelium and Oligodendrocyte After Stroke. Springer Series in Translational Stroke Research, 2016, , 151-170.	0.1	1
101	Brain Angiogenesis After Stroke. , 2013, , 239-260.		1
102	Treadmill Exercise During Cerebral Hypoperfusion Has Only Limited Effects on Cognitive Function in Middle-Aged Subcortical Ischemic Vascular Dementia Mice. Frontiers in Aging Neuroscience, 2021, 13, 756537.	1.7	1
103	Rho-Kinase Inhibition Improves the Outcome of Focal Subcortical White Matter Lesions. Stroke, 2022, 53, 2369-2376.	1.0	1
104	The brain vasculome. , 2022, , 427-438.		1
105	<i>Stroke</i> Literature Synopses: Basic Science. Stroke, 2014, 45, e247-8.	1.0	0
106	<i>Stroke</i> Literature Synopses: Basic Science. Stroke, 2015, 46, e133.	1.0	0
107	<i>Stroke</i> Literature Synopses: Basic Science. Stroke, 2015, 46, e250.	1.0	0
108	<i>Stroke</i> Literature Synopses: Basic Science. Stroke, 2015, 46, e78.	1.0	0

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109	Stroke Literature Synopses: Basic Science. Stroke, 2015, 46, e180.	1.0	0
110	Stroke Literature Synopses: Basic Science. Stroke, 2016, 47, e187.	1.0	0
111	<i>Stroke</i> Literature Synopses: Basic Science. Stroke, 2017, 48, .	1.0	0
112	White Matter Pathophysiology. , 2022, , 103-116.e4.		0
113	Gliovascular Mechanisms and White Matter Injury in Vascular Cognitive Impairment and Dementia. , 2022, , 153-160.e4.		0
114	Experimental Platforms for Assessing White Matter Pathophysiology in Stroke. , 2012, , 57-78.		0
115	Matrix Metalloproteinases as an Inflammatory Mediator in the Neurovascular Unit. , 2014, , 87-96.		0
116	Experimental Global Ischemia and White Matter Injury. , 2014, , 197-217.		0
117	Non-cell autonomous mechanisms of proliferation and differentiation of oligodendrocyte precursor cells. Proceedings for Annual Meeting of the Japanese Pharmacological Society, 2018, WCP2018, SY8-1.	0.0	0
118	Emerging Mechanism of Cell Death Caused by Stroke: A Role of Neurovascular Unit. Stroke Revisited, 2020, , 243-256.	0.2	0
119	Differential glial responses to intracerebral hemorrhage between young and middle-aged mice. Proceedings for Annual Meeting of the Japanese Pharmacological Society, 2020, 93, 1-P-040.	0.0	0
120	Abstract TP432: Glyco-proteomic Study of Therapeutic Hypothermia in Global Ischemic Brain Injury Post Cardiac Arrest. Stroke, 2013, 44, .	1.0	0