John G R Jefferys

List of Publications by Citations

148 papers	13,428 citations	52 h-index	115 g-index
162 ext. papers	15,130 ext. citations	6.4 avg, IF	6.28 L-index

#	Paper	IF	Citations
148	Electrical stimulation of excitable tissue: design of efficacious and safe protocols. *Journal of Neuroscience Methods*, **2005**, 141, 171-98	3	1374
147	Synchronized oscillations in interneuron networks driven by metabotropic glutamate receptor activation. *Nature*, **1995**, 373, 612-5	50.4	1370
146	Prion protein is necessary for normal synaptic function. *Nature*, **1994**, 370, 295-7	50.4	654
145	A mechanism for generation of long-range synchronous fast oscillations in the cortex. *Nature*, **1996**, 383, 621-4	50.4	609
144	Electrical coupling underlies high-frequency oscillations in the hippocampus in vitro. *Nature*, **1998**, 394, 189-92	50.4	551
143	Effects of uniform extracellular DC electric fields on excitability in rat hippocampal slices in vitro. *Journal of Physiology*, **2004**, 557, 175-90	3.9	494
142	Analysis of gamma rhythms in the rat hippocampus in vitro and in vivo. *Journal of Physiology*, **1996**, 493 (Pt 2), 471-84	3.9	473
141	Neuronal networks for induced ‘40 Hz’ rhythms. *Trends in Neurosciences*, **1996**, 19, 202-8	13.3	392
140	Synchronization and desynchronization in epilepsy: controversies and hypotheses. *Journal of Physiology*, **2013**, 591, 787-97	3.9	312
139	High-frequency oscillations as a new biomarker in epilepsy. *Annals of Neurology*, **2012**, 71, 169-78	9.4	289
138	On the mechanism of the gamma --> beta frequency shift in neuronal oscillations induced in rat hippocampal slices by tetanic stimulation. *Journal of Neuroscience*, **1999**, 19, 1088-105	6.6	236
137	A branching dendritic model of a rodent CA3 pyramidal neurone. *Journal of Physiology*, **1994**, 481 (Pt 1), 79-95	3.9	232
136	High-frequency population oscillations are predicted to occur in hippocampal pyramidal neuronal networks interconnected by axoaxonal gap junctions. *Neuroscience*, **1999**, 92, 407-26	3.9	211
135	Targeting cellular prion protein reverses early cognitive deficits and neurophysiological dysfunction in prion-infected mice. *Neuron*, **2007**, 53, 325-35	13.9	204
134	Mechanisms of physiological and epileptic HFO generation. *Progress in Neurobiology*, **2012**, 98, 250-64	10.9	200
133	Sensitivity of coherent oscillations in rat hippocampus to AC electric fields. *Journal of Physiology*, **2007**, 583, 555-65	3.9	198
132	Spatiotemporal patterns of gamma frequency oscillations tetanically induced in the rat hippocampal slice. *Journal of Physiology*, **1997**, 502 (Pt 3), 591-607	3.9	179

131	Synaptic and intrinsic conductances shape picrotoxin-induced synchronized after-discharges in the guinea-pig hippocampal slice. *Journal of Physiology*, **1993**, 461, 525-47	3.9	169
130	Parvalbumin-deficiency facilitates repetitive IPSCs and gamma oscillations in the hippocampus. *Journal of Neurophysiology*, **2003**, 89, 1414-22	3.2	162
129	Fast Oscillations in Cortical Circuits **1999**,		162
128	Ictal epileptiform activity is facilitated by hippocampal GABAA receptor-mediated oscillations. *Journal of Neuroscience*, **2000**, 20, 6820-9	6.6	151
127	Hippocampal slices from prion protein null mice: disrupted Ca(2+)-activated K+ currents. *Neuroscience Letters*, **1996**, 209, 49-52	3.3	149
126	Simulation of gamma rhythms in networks of interneurons and pyramidal cells. *Journal of Computational Neuroscience*, **1997**, 4, 141-50	1.4	144
125	Enhanced NMDA conductance can account for epileptiform activity induced by low Mg2+ in the rat hippocampal slice. *Journal of Physiology*, **1994**, 478 Pt 3, 379-93	3.9	140
124	Recurrent excitatory postsynaptic potentials induced by synchronized fast cortical oscillations. *Proceedings of the National Academy of Sciences of the United States of America*, **1997**, 94, 12198-203	11.5	139
123	Gamma-frequency oscillations: a neuronal population phenomenon, regulated by synaptic and intrinsic cellular processes, and inducing synaptic plasticity. *Progress in Neurobiology*, **1998**, 55, 563-75	10.9	135
122	On the structure of ictal events in vitro. *Epilepsia*, **1996**, 37, 879-91	6.4	131
121	Rescue of neurophysiological phenotype seen in PrP null mice by transgene encoding human prion protein. *Nature Genetics*, **1995**, 9, 197-201	36.3	122
120	Prolonged epileptiform bursting induced by 0-Mg(2+) in rat hippocampal slices depends on gap junctional coupling. *Neuroscience*, **2001**, 105, 579-87	3.9	121
119	High-frequency network activity, global increase in neuronal activity, and synchrony expansion precede epileptic seizures in vitro. *Journal of Neuroscience*, **2010**, 30, 5690-701	6.6	115
118	ERK activation causes epilepsy by stimulating NMDA receptor activity. *EMBO Journal*, **2007**, 26, 4891-901	13	100
117	Depolarization block of neurons during maintenance of electrographic seizures. *Journal of Neurophysiology*, **2003**, 90, 2402-8	3.2	90
116	Interaction dynamics of neuronal oscillations analysed using wavelet transforms. *Journal of Neuroscience Methods*, **2007**, 160, 178-85	3	87
115	Seizure-like events in disinhibited ventral slices of adult rat hippocampus. *Journal of Neurophysiology*, **1999**, 82, 2130-42	3.2	86
114	Models and mechanisms of experimental epilepsies. *Epilepsia*, **2003**, 44 Suppl 12, 44-50	6.4	83

113	Analysis of the propagation of disinhibition-induced after-discharges along the guinea-pig hippocampal slice in vitro. *Journal of Physiology*, **1993**, 472, 267-87	3.9	80
112	Erosion of inhibition contributes to the progression of low magnesium bursts in rat hippocampal slices. *Journal of Physiology*, **1995**, 486 (Pt 3), 723-34	3.9	79
111	On the synchronizing mechanisms of tetanically induced hippocampal oscillations. *Journal of Neuroscience*, **1999**, 19, 8104-13	6.6	76
110	Mossy fibre reorganization in the hippocampus of prion protein null mice. *Brain Research*, **1997**, 755, 28-35	3.7	73
109	Inhibition of RhoA pathway rescues the endocytosis defects in Oligophrenin1 mouse model of mental retardation. *Human Molecular Genetics*, **2009**, 18, 2575-83	5.6	72
108	Effects of intravenous anaesthetic agents on fast inhibitory oscillations in the rat hippocampus in vitro. *British Journal of Pharmacology*, **1996**, 118, 1977-86	8.6	72
107	Blood and cerebrospinal fluid pharmacokinetics of the novel anticonvulsant levetiracetam (ucb L059) in the rat. *Epilepsy Research*, **1999**, 34, 161-8	3	69
106	Opportunities for improving animal welfare in rodent models of epilepsy and seizures. *Journal of Neuroscience Methods*, **2016**, 260, 2-25	3	67
105	Morphine disrupts long-range synchrony of gamma oscillations in hippocampal slices. *Proceedings of the National Academy of Sciences of the United States of America*, **1998**, 95, 5807-11	11.5	66
104	Functional phenotype in transgenic mice expressing mutant human presenilin-1. *Neurobiology of Disease*, **2000**, 7, 119-26	7.5	65
103	Epileptic high-frequency network activity in a model of non-lesional temporal lobe epilepsy. *Brain*, **2010**, 133, 1380-90	11.2	64
102	High-frequency gamma oscillations coexist with low-frequency gamma oscillations in the rat visual cortex in vitro. *European Journal of Neuroscience*, **2010**, 31, 1435-45	3.5	63
101	Synchronization measurement of multiple neuronal populations. *Journal of Neurophysiology*, **2007**, 98, 3341-8	3.2	63
100	Neuronal aggregate formation underlies spatiotemporal dynamics of nonsynaptic seizure initiation. *Journal of Neurophysiology*, **2003**, 89, 2330-3	3.2	63
99	Are there unifying principles underlying the generation of epileptic afterdischarges in vitro?. *Progress in Brain Research*, **1994**, 102, 383-94	2.9	62
98	Basic mechanisms of focal epilepsies. *Experimental Physiology*, **1990**, 75, 127-62	2.4	61
97	Controversies in epilepsy: debates held during the Fourth International Workshop on Seizure Prediction. *Epilepsy and Behavior*, **2010**, 19, 4-16	3.2	52
96	Detection of interictal epileptiform discharges using signal envelope distribution modelling: application to epileptic and non-epileptic intracranial recordings. *Brain Topography*, **2015**, 28, 172-83	4.3	50

95	Loss of neuronal network resilience precedes seizures and determines the ictogenic nature of interictal synaptic perturbations. *Nature Neuroscience*, **2018**, 21, 1742-1752	25.5	49
94	Advances in understanding basic mechanisms of epilepsy and seizures. *Seizure: the Journal of the British Epilepsy Association*, **2010**, 19, 638-46	3.2	47
93	Chronic epileptic foci in neocortex: in vivo and in vitro effects of tetanus toxin. *European Journal of Neuroscience*, **1991**, 3, 47-54	3.5	47
92	A neurobiological basis for ELF guidelines. *Health Physics*, **2007**, 92, 596-603	2.3	46
91	Physiological and behavioural consequences of seizures induced in the rat by intrahippocampal tetanus toxin. *Brain*, **1987**, 110 (Pt 2), 517-32	11.2	45
90	Effects of carbamazepine and baclofen on 4-aminopyridine-induced epileptic activity in rat hippocampal slices. *British Journal of Pharmacology*, **1993**, 108, 819-23	8.6	44
89	Synaptic inhibition in primary and secondary chronic epileptic foci induced by intrahippocampal tetanus toxin in the rat. *Journal of Physiology*, **1993**, 465, 595-614	3.9	42
88	Halothane as a neuroprotectant during constant stimulation of the perforant path. *Epilepsia*, **1999**, 40, 359-64	6.4	41
87	Epileptic activity outlasts disinhibition after intrahippocampal tetanus toxin in the rat. *Journal of Physiology*, **1994**, 481 (Pt 3), 593-604	3.9	41
86	Experimental neurobiology of epilepsies. *Current Opinion in Neurology*, **1994**, 7, 113-22	7.1	39
85	Cavity Resonator Wireless Power Transfer System for Freely Moving Animal Experiments. *IEEE Transactions on Biomedical Engineering*, **2017**, 64, 775-785	5	38
84	Synaptic mechanisms of adenosine A2A receptor-mediated hyperexcitability in the hippocampus. *Hippocampus*, **2015**, 25, 566-80	3.5	37
83	Hippocampal sclerosis and temporal lobe epilepsy: cause or consequence?. *Brain*, **1999**, 122 (Pt 6), 1007-8	11.2	37
82	Neuropathology of the chronic epileptic syndrome induced by intrahippocampal tetanus toxin in rat: preservation of pyramidal cells and incidence of dark cells. *Neuropathology and Applied Neurobiology*, **1992**, 18, 53-70	5.2	37
81	Models of drug-induced epileptiform synchronization in vitro. *Journal of Neuroscience Methods*, **2016**, 260, 26-32	3	36
80	Functional connectivity from CA3 to the ipsilateral and contralateral CA1 in the rat dorsal hippocampus. *Neuroscience*, **1993**, 56, 101-8	3.9	35
79	Injection of tetanus toxin into the neocortex elicits persistent epileptiform activity but only transient impairment of GABA release. *Neuroscience*, **1993**, 57, 235-9	3.9	34
78	Second messenger modulation of electrotonic coupling between region CA3 pyramidal cell axons in the rat hippocampus. *Neuroscience Letters*, **2001**, 300, 1-4	3.3	33

77	Rapid reversal of impaired inhibitory and excitatory transmission but not spine dysgenesis in a mouse model of mental retardation. *Journal of Physiology*, **2012**, 590, 763-76	3.9	32
76	Intrinsic physiological and morphological properties of principal cells of the hippocampus and neocortex in hamsters infected with scrapie. *Neurobiology of Disease*, **1999**, 6, 406-23	7.5	32
75	Sustained and selective block of IPSPs in brain slices from rats made epileptic by intrahippocampal tetanus toxin. *Epilepsy Research*, **1992**, 11, 119-29	3	32
74	Chemically-induced TLE models: Topical application. *Journal of Neuroscience Methods*, **2016**, 260, 53-61	3	31
73	Synchronization of epileptiform bursts induced by 4-aminopyridine in the in vitro hippocampal slice preparation. *Neuroscience Letters*, **1990**, 112, 239-45	3.3	31
72	Layer-specific pyramidal cell oscillations evoked by tetanic stimulation in the rat hippocampal area CA1 in vitro and in vivo. *Journal of Physiology*, **2005**, 562, 149-64	3.9	30
71	Chronic focal epilepsy induced by intracerebral tetanus toxin. *Italian Journal of Neurological Sciences*, **1995**, 16, 27-32		30
70	Down-regulation of alpha 2- and beta-adrenoceptor binding sites in rat cortex caused by amygdalar kindling. *Experimental Neurology*, **1985**, 90, 108-17	5.7	29
69	Chemogenetic Recruitment of Specific Interneurons Suppresses Seizure Activity. *Frontiers in Cellular Neuroscience*, **2018**, 12, 293	6.1	29
68	In vitro hippocampal gamma oscillation power as an index of in vivo CA3 gamma oscillation strength and spatial reference memory. *Neurobiology of Learning and Memory*, **2011**, 95, 221-30	3.1	28
67	Limbic gamma rhythms. I. Phase-locked oscillations in hippocampal CA1 and subiculum. *Journal of Neurophysiology*, **1998**, 80, 155-61	3.2	28
66	Dendritic shrinkage and dye-coupling between rat hippocampal CA1 pyramidal cells in the tetanus toxin model of epilepsy. *Brain Research*, **1996**, 741, 38-43	3.7	28
65	Simulations of epileptiform activity in the hippocampal CA3 region in vitro. *Hippocampus*, **1994**, 4, 281-5	3.5	28
64	Alterations in Ca2+-buffering in prion-null mice: association with reduced afterhyperpolarizations in CA1 hippocampal neurons. *Journal of Neuroscience*, **2008**, 28, 3877-86	6.6	27
63	Limbic gamma rhythms. II. Synaptic and intrinsic mechanisms underlying spike doublets in oscillating subicular neurons. *Journal of Neurophysiology*, **1998**, 80, 162-71	3.2	26
62	Review of the role of inhibitory neurons in chronic epileptic foci induced by intracerebral tetanus toxin. *Epilepsy Research*, **1996**, 26, 59-66	3	25
61	Structural and functional substrates of tetanus toxin in an animal model of temporal lobe epilepsy. *Brain Structure and Function*, **2015**, 220, 1013-29	4	24
60	Dynamic modulation of excitation and inhibition during stimulation at gamma and beta frequencies in the CA1 hippocampal region. *Journal of Neurophysiology*, **2001**, 85, 2412-22	3.2	24

59	Comparison between spontaneous and kainate-induced gamma oscillations in the mouse hippocampus in vitro. *European Journal of Neuroscience*, **2009**, 29, 2145-56	3.5	23
58	Effects of direct brain stimulation depend on seizure dynamics. *Epilepsia*, **2010**, 51 Suppl 3, 93-7	6.4	23
57	Tissue resistance changes and the profile of synchronized neuronal activity during ictal events in the low-calcium model of epilepsy. *Journal of Neurophysiology*, **2004**, 92, 181-8	3.2	23
56	DREAM controls the on/off switch of specific activity-dependent transcription pathways. *Molecular and Cellular Biology*, **2014**, 34, 877-87	4.8	22
55	Transition between fast and slow gamma modes in rat hippocampus area CA1 in vitro is modulated by slow CA3 gamma oscillations. *Journal of Physiology*, **2014**, 592, 605-20	3.9	22
54	Weak electric field interactions in the central nervous system. *Health Physics*, **2002**, 83, 366-75	2.3	21
53	Expression of mRNAs encoding flip isoforms of GluR1 and GluR2 glutamate receptors is increased in rat hippocampus in epilepsy induced by tetanus toxin. *Epilepsy Research*, **1999**, 36, 243-51	3	21
52	Ex vivo release of GABA from tetanus toxin-induced chronic epileptic foci decreased during the active seizure phase. *Neurochemistry International*, **1991**, 18, 373-9	4.4	21
51	Mechanisms and experimental models of seizure generation. *Current Opinion in Neurology*, **1998**, 11, 123-7	7.1	21
50	Epileptic focus induced by intrahippocampal cholera toxin in rat: time course and properties in vivo and in vitro. *Epilepsy Research*, **1993**, 16, 137-46	3	20
49	Altered expression of the voltage-gated calcium channel subunit Đ1: a comparison between two experimental models of epilepsy and a sensory nerve ligation model of neuropathic pain. *Neuroscience*, **2014**, 283, 124-37	3.9	19
48	Electrographic high-frequency activity and epilepsy. *Epilepsy Research*, **2010**, 89, 60-5	3	19
47	QormantQnhibitory neurons: do they exist and what is their functional impact?. *Epilepsy Research*, **1998**, 32, 104-13	3	19
46	Development of chronic secondary epileptic foci following intrahippocampal injection of tetanus toxin in the rat. *Experimental Physiology*, **1990**, 75, 733-6	2.4	18
45	Interictal Epileptiform Discharges in Partial Epilepsy **2012**, 213-227		18
44	The effect of neuronal population size on the development of epileptiform discharges in the low calcium model of epilepsy. *Neuroscience Letters*, **2007**, 411, 158-61	3.3	17
43	Dentate gyrus progenitor cell proliferation after the onset of spontaneous seizures in the tetanus toxin model of temporal lobe epilepsy. *Neurobiology of Disease*, **2013**, 54, 492-8	7.5	16
42	The role of extracellular potassium in the epileptogenic transformation of recurrent GABAergic inhibition. *Epilepsia*, **2005**, 46 Suppl 5, 64-71	6.4	16

41	Electrophysiological substrates for focal epilepsies. *Progress in Brain Research*, **1998**, 116, 351-8	2.9	16
40	Limbic Network Synchronization and Temporal Lobe Epilepsy **2012**, 176-189		16
39	Acid reflux induced laryngospasm as a potential mechanism of sudden death in epilepsy. *Epilepsy Research*, **2018**, 148, 23-31	3	16
38	Neuronal population oscillations of rat hippocampus during epileptic seizures. *Neural Networks*, **2008**, 21, 1105-11	9.1	15
37	Neuronal firing in human epileptic cortex: the ins and outs of synchrony during seizures. *Epilepsy Currents*, **2013**, 13, 100-2	1.3	14
36	Pathogenic human prion protein rescues PrP null phenotype in transgenic mice. *Neuroscience Letters*, **2004**, 360, 33-6	3.3	13
35	Brainstem activity, apnea, and death during seizures induced by intrahippocampal kainic acid in anaesthetized rats. *Epilepsia*, **2019**, 60, 2346-2358	6.4	12
34	Tetanus Toxin Model of Focal Epilepsy **2006**, 407-414		11
33	Altered dentate filtering during the transition to seizure in the rat tetanus toxin model of epilepsy. *Journal of Neurophysiology*, **2001**, 86, 2748-53	3.2	11
32	Specific cytoarchitectureal changes in hippocampal subareas in daDREAM mice. *Molecular Brain*, **2016**, 9, 22	4.5	10
31	Clinical impact of a high-frequency seizure onset zone in a case of bitemporal epilepsy. *Epileptic Disorders*, **2008**, 10, 231-8	1.9	10
30	The Bionode. *Transactions on Embedded Computing Systems*, **2019**, 18, 1-20	1.8	9
29	Gamma Oscillation Model Predicts Intensity Coding by Phase Rather than Frequency. *Neural Computation*, **1997**, 9, 1251-1264	2.9	9
28	A New Approach of Modified Submerged Patch Clamp Recording Reveals Interneuronal Dynamics during Epileptiform Oscillations. *Frontiers in Neuroscience*, **2016**, 10, 519	5.1	9
27	Mechanisms and prevention of acid reflux induced laryngospasm in seizing rats. *Epilepsy and Behavior*, **2020**, 111, 107188	3.2	8
26	Reduced gamma oscillations in a mouse model of intellectual disability: a role for impaired repetitive neurotransmission?. *PLoS ONE*, **2014**, 9, e95871	3.7	8
25	Epileptic focus induced in rat by intrahippocampal cholera toxin: neuronal properties in vitro. *Neuroscience*, **1993**, 55, 45-56	3.9	7
24	Ictal activation of oxygen-conserving reflexes as a mechanism for sudden death in epilepsy. *Epilepsia*, **2021**, 62, 752-764	6.4	7

23	A Method of Flexible Micro-Wire Electrode Insertion in Rodent for Chronic Neural Recording and a Device for Electrode Insertion. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, **2019**, 27, 1724-1731	4.8	6
22	Modern concepts of focal epileptic networks. *International Review of Neurobiology*, **2014**, 114, 1-7	4.4	6
21	Hippocampal bursts caused by changes in NMDA receptor-dependent excitation in a mouse model of variant CJD. *Neurobiology of Disease*, **2008**, 32, 96-104	7.5	6
20	Gap junctions and diseases of the nervous system. *Trends in Neurosciences*, **1995**, 18, 520-1	13.3	6
19	Lack of change in neurochemical markers during the postepileptic phase of intrahippocampal tetanus toxin syndrome in rats. *Epilepsia*, **1990**, 31, 697-701	6.4	6
18	The role of interictal discharges in ictogenesis - A dynamical perspective. *Epilepsy and Behavior*, **2021**, 121, 106591	3.2	6
17	Controversies on the network theory of epilepsy: Debates held during the ICTALS 2019 conference. *Seizure: the Journal of the British Epilepsy Association*, **2020**, 78, 78-85	3.2	5
16	Cardiac effects of repeated focal seizures in rats induced by intrahippocampal tetanus toxin: Bradyarrhythmias, tachycardias, and prolonged interictal QT interval. *Epilepsia*, **2020**, 61, 798-809	6.4	5
15	Mechanism of tetanus toxin in neuronal cell death. *Trends in Pharmacological Sciences*, **1992**, 13, 13-4	13.2	5
14	Are changes in synaptic function that underlie hyperexcitability responsible for seizure activity?. *Advances in Experimental Medicine and Biology*, **2014**, 813, 185-94	3.6	5
13	Sturge-Weber syndrome: a favourable surgical outcome in a case with contralateral seizure onset and myoclonic-astatic seizures. *Epileptic Disorders*, **2011**, 13, 76-81	1.9	4
12	Reference noise method of removing powerline noise from recorded signals. *Journal of Neuroscience Methods*, **2009**, 184, 110-4	3	3
11	Frequency and synchrony of tetanically-induced, gamma-frequency population discharges in the rat hippocampal slice: the effect of diazepam and propofol. *Neuroscience Letters*, **1998**, 257, 101-4	3.3	3
10	Tetanus Toxin **2017**, 589-598		2
9	Do seizures in the pilocarpine model start in the hippocampal formation?. *Epilepsy Currents*, **2014**, 14, 206-7	1.3	2
8	. *Trends in Neurosciences*, **1980**, 3, XVII	13.3	2
7	The transition to status epilepticus: how the brain meets the demands of perpetual seizure activity. *Seizure: the Journal of the British Epilepsy Association*, **2020**, 75, 137-144	3.2	2
6	Long-term seizure dynamics are determined by the nature of seizures and the mutual interactions between them. *Neurobiology of Disease*, **2021**, 154, 105347	7.5	2

5	How does epileptic activity spread?. *Epilepsy Currents*, **2014**, 14, 289-90	1.3	1
4	Neuronal network synchronization and limbic seizures. *Epilepsia*, **2010**, 51, 19-19	6.4	1
3	Acute and chronic cardiorespiratory consequences of focal intrahippocampal administration of seizure-inducing agents. Implications for SUDEP. *Autonomic Neuroscience: Basic and Clinical*, **2021**, 235, 102864	2.4	1
2	Good Welfare Practice in Modeling Seizures and Epilepsy **2017**, 39-46		
1	High-Frequency Pre-Seizure Activity and Seizure Prediction169-173		