Laura Ballerini

List of Publications by Year
in descending order

104 papers	10,397 citations	71061 41 h-index	31818 101 g-index
108 all docs	108 docs citations	108 times ranked	15480 citing authors

#	Article	IF	Citations
1	Science and technology roadmap for graphene, related two-dimensional crystals, and hybrid systems. Nanoscale, 2015, 7, 4598-4810.	2.8	2,452
2	Diverse Applications of Nanomedicine. ACS Nano, 2017, 11, 2313-2381.	7.3	976
3	Carbon Nanotube Substrates Boost Neuronal Electrical Signaling. Nano Letters, 2005, 5, 1107-1110.	4.5	614
4	Carbon nanotubes might improve neuronal performance by favouring electrical shortcuts. Nature Nanotechnology, 2009, 4, 126-133.	15.6	473
5	Nanomaterials for Neural Interfaces. Advanced Materials, 2009, 21, 3970-4004.	11.1	460
6	Safety Assessment of Graphene-Based Materials: Focus on Human Health and the Environment. ACS Nano, 2018, 12, 10582-10620.	7.3	438
7	Classification Framework for Grapheneâ€Based Materials. Angewandte Chemie - International Edition, 2014, 53, 7714-7718.	7.2	369
8	Interfacing Neurons with Carbon Nanotubes: Electrical Signal Transfer and Synaptic Stimulation in Cultured Brain Circuits. Journal of Neuroscience, 2007, 27, 6931-6936.	1.7	329
9	Graphene-Based Interfaces Do Not Alter Target Nerve Cells. ACS Nano, 2016, 10, 615-623.	7.3	208
10	Carbon Nanotubes Promote Growth and Spontaneous Electrical Activity in Cultured Cardiac Myocytes. Nano Letters, 2012, 12, 1831-1838.	4.5	196
11	Glutamate uptake from the synaptic cleft does not shape the decay of the non-NMDA component of the synaptic current. Neuron, 1993, 11, 541-549.	3.8	167
12	Carbon Nanotube Scaffolds Tune Synaptic Strength in Cultured Neural Circuits: Novel Frontiers in Nanomaterialâ€"Tissue Interactions. Journal of Neuroscience, 2011, 31, 12945-12953.	1.7	142
13	Spontaneous rhythmic bursts induced by pharmacological block of inhibition in lumbar motoneurons of the neonatal rat spinal cord. Journal of Neurophysiology, 1996, 75, 640-647.	0.9	139
14	Carbon nanotubes in neuroregeneration and repair. Advanced Drug Delivery Reviews, 2013, 65, 2034-2044.	6.6	137
15	Properties and behavior of carbon nanomaterials when interfacing neuronal cells: How far have we come?. Carbon, 2019, 143, 430-446.	5.4	135
16	Localization of Rhythmogenic Networks Responsible for Spontaneous Bursts Induced by Strychnine and Bicuculline in the Rat Isolated Spinal Cord. Journal of Neuroscience, 1996, 16, 7063-7076.	1.7	133
17	Graphene Oxide Nanosheets Reshape Synaptic Function in Cultured Brain Networks. ACS Nano, 2016, 10, 4459-4471.	7.3	133
18	Serotonin blocks the long-term potentiation induced by primed burst stimulation in the CA1 region of rat hippocampal slices. Neuroscience, 1992, 46, 511-518.	1.1	131

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19	Spinal Cord Explants Use Carbon Nanotube Interfaces To Enhance Neurite Outgrowth and To Fortify Synaptic Inputs. ACS Nano, 2012, 6, 2041-2055.	7.3	127
20	From 2D to 3D: novel nanostructured scaffolds to investigate signalling in reconstructed neuronal networks. Scientific Reports, 2015, 5, 9562.	1.6	125
21	Single-layer graphene modulates neuronal communication and augments membrane ion currents. Nature Nanotechnology, 2018, 13, 755-764.	15.6	120
22	Carbon Nanotubes Instruct Physiological Growth and Functionally Mature Syncytia: Nongenetic Engineering of Cardiac Myocytes. ACS Nano, 2013, 7, 5746-5756.	7.3	105
23	Carbon Nanotubes: Artificial Nanomaterials to Engineer Single Neurons and Neuronal Networks. ACS Chemical Neuroscience, 2012, 3, 611-618.	1.7	103
24	Graphene Improves the Biocompatibility of Polyacrylamide Hydrogels: 3D Polymeric Scaffolds for Neuronal Growth. Scientific Reports, 2017, 7, 10942.	1.6	87
25	3D meshes of carbon nanotubes guide functional reconnection of segregated spinal explants. Science Advances, 2016, 2, e1600087.	4.7	84
26	Early signs of motoneuron vulnerability in a disease model system: Characterization of transverse slice cultures of spinal cord isolated from embryonic ALS mice. Neuroscience, 2006, 138, 1179-1194.	1.1	71
27	Carbon Nanotubes Carrying Cellâ€Adhesion Peptides do not Interfere with Neuronal Functionality. Advanced Materials, 2009, 21, 2903-2908.	11.1	67
28	Pharmacological Block of the Electrogenic Sodium Pump Disrupts Rhythmic Bursting Induced by Strychnine and Bicuculline in the Neonatal Rat Spinal Cord. Journal of Neurophysiology, 1997, 77, 17-23.	0.9	64
29	Spinal circuits formation: a study of developmentally regulated markers in organotypic cultures of embryonic mouse spinal cord. Neuroscience, 2003, 122, 391-405.	1.1	63
30	Nanomaterials for stimulating nerve growth. Science, 2017, 356, 1010-1011.	6.0	62
31	Generation of rhythmic patterns of activity by ventral interneurones in rat organotypic spinal slice culture. Journal of Physiology, 1999, 517, 459-475.	1.3	60
32	Opposite changes in synaptic activity of organotypic rat spinal cord cultures after chronic block of AMPA/kainate or glycine and GABA A receptors. Journal of Physiology, 2000, 523, 639-651.	1.3	58
33	ERG Conductance Expression Modulates the Excitability of Ventral Horn GABAergic Interneurons That Control Rhythmic Oscillations in the Developing Mouse Spinal Cord. Journal of Neuroscience, 2007, 27, 919-928.	1.7	57
34	Carbon Nanotube Scaffolds Instruct Human Dendritic Cells: Modulating Immune Responses by Contacts at the Nanoscale. Nano Letters, 2013, 13, 6098-6105.	4.5	54
35	Adhesion to Carbon Nanotube Conductive Scaffolds Forces Action-Potential Appearance in Immature Rat Spinal Neurons. PLoS ONE, 2013, 8, e73621.	1.1	53
36	Improving cardiac myocytes performance by carbon nanotubes platformsâ€. Frontiers in Physiology, 2013, 4, 239.	1.3	51

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37	Nanomaterials at the neural interface. Current Opinion in Neurobiology, 2018, 50, 50-55.	2.0	49
38	Advances in Nano Neuroscience: From Nanomaterials to Nanotools. Frontiers in Neuroscience, 2018, 12, 953.	1.4	46
39	PEDOT:PSS Interfaces Support the Development of Neuronal Synaptic Networks with Reduced Neuroglia Response In vitro. Frontiers in Neuroscience, 2015, 9, 521.	1.4	45
40	Interactions Between Cultured Neurons and Carbon Nanotubes: A Nanoneuroscience Vignette. Journal of Nanoneuroscience, 2009, 1, 10-16.	0.5	45
41	Network bursting by organotypic spinal slice cultures in the presence of bicuculline and/or strychnine is developmentally regulated. European Journal of Neuroscience, 1998, 10, 2871-2879.	1.2	43
42	Graphene Oxide Flakes Tune Excitatory Neurotransmission in Vivo by Targeting Hippocampal Synapses. Nano Letters, 2019, 19, 2858-2870.	4.5	43
43	BDNF impact on synaptic dynamics: extra or intracellular long-term release differently regulates cultured hippocampal synapses. Molecular Brain, 2020, 13, 43.	1.3	42
44	GABAergic and glycinergic interneuron expression during spinal cord development: Dynamic interplay between inhibition and excitation in the control of ventral network outputs. Progress in Neurobiology, 2009, 89, 46-60.	2.8	40
45	3D Organotypic Spinal Cultures: Exploring Neuron and Neuroglia Responses Upon Prolonged Exposure to Graphene Oxide. Frontiers in Systems Neuroscience, 2019, 13, 1.	1.2	40
46	Interneurons transiently express the ERG K+ channels during development of mouse spinal networks in vitro. Neuroscience, 2005, 135, 1179-1192.	1.1	39
47	Activity-dependent modulation of GABAergic synapses in developing rat spinal networksin vitro. European Journal of Neuroscience, 2002, 16, 2123-2135.	1.2	36
48	Carbon nanotubes: a promise for nerve tissue engineering?. Nanotechnology Reviews, 2013, 2, 47-57.	2.6	36
49	Desensitization of AMPA Receptors Limits the Amplitude of EPSPs and the Excitability of Motoneurons of the Rat Isolated Spinal Cord. European Journal of Neuroscience, 1995, 7, 1229-1234.	1.2	34
50	Interneurone bursts are spontaneously associated with muscle contractions only during early phases of mouse spinal network development: a study in organotypic cultures. European Journal of Neuroscience, 2004, 20, 2697-2710.	1.2	31
51	Activity-independent intracellular Ca2+ oscillations are spontaneously generated by ventral spinal neurons during development in vitro. Cell Calcium, 2007, 41, 317-329.	1.1	30
52	Neurons Are Able to Internalize Soluble Carbon Nanotubes: New Opportunities or Old Risks?. Small, 2010, 6, 2630-2633.	5.2	30
53	Carbon based substrates for interfacing neurons: Comparing pristine with functionalized carbon nanotubes effects on cultured neuronal networks. Carbon, 2016, 97, 87-91.	5.4	29
54	Attenuated Glial Reactivity on Topographically Functionalized Poly(3,4â€Ethylenedioxythiophene):Pâ€Toluene Sulfonate (PEDOT:PTS) Neuroelectrodes Fabricated by Microimprint Lithography. Small, 2018, 14, e1800863.	5.2	29

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55	Experimental and Modeling Studies of Novel Bursts Induced by Blocking Na+ Pump and Synaptic Inhibition in the Rat Spinal Cord. Journal of Neurophysiology, 2002, 88, 676-691.	0.9	28
56	Carbon Nanotubes in Tissue Engineering. Topics in Current Chemistry, 2013, 348, 181-204.	4.0	28
57	Exploiting natural polysaccharides to enhance in vitro bio-constructs of primary neurons and progenitor cells. Acta Biomaterialia, 2018, 73, 285-301.	4.1	28
58	Sculpting neurotransmission during synaptic development by 2D nanostructured interfaces. Nanomedicine: Nanotechnology, Biology, and Medicine, 2018, 14, 2521-2532.	1.7	28
59	Chemically Cross-Linked Carbon Nanotube Films Engineered to Control Neuronal Signaling. ACS Nano, 2019, 13, 8879-8889.	7.3	28
60	Interfacing neurons with carbon nanotubes:. Progress in Brain Research, 2011, 194, 241-252.	0.9	26
61	Nanostructures to Engineer 3D Neuralâ€Interfaces: Directing Axonal Navigation toward Successful Bridging of Spinal Segments. Advanced Functional Materials, 2018, 28, 1700550.	7.8	26
62	Antagonism by (1,2,5,6-tetrahydropyridine-4-yl)methylphosphinic acid of synaptic transmission in the neonatal rat spinal cord in vitro: an electrophysiological study. Neuroscience, 1999, 90, 1085-1092.	1.1	25
63	Carbon Nanotube Facilitation of Myocardial Ablation with Radiofrequency Energy. Journal of Cardiovascular Electrophysiology, 2014, 25, 1385-1390.	0.8	25
64	Altered development in GABA coâ€release shapes glycinergic synaptic currents in cultured spinal slices of the SOD1^{G93A} mouse model of amyotrophic lateral sclerosis. Journal of Physiology, 2016, 594, 3827-3840.	1.3	25
65	Homeostatic plasticity induced by chronic block of AMPA/kainate receptors modulates the generation of rhythmic bursting in rat spinal cord organotypic cultures. European Journal of Neuroscience, 2001, 14, 903-917.	1.2	24
66	Functional rewiring across spinal injuries via biomimetic nanofiber scaffolds. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 25212-25218.	3.3	23
67	Epsp-spike potentiation during primed burst-induced long-term potentiation in the ca1 region of rat hippocampal slices. Neuroscience, 1994, 62, 1021-1032.	1.1	22
68	Nanomedicine and graphene-based materials: advanced technologies for potential treatments of diseases in the developing nervous system. Pediatric Research, 2022, 92, 71-79.	1.1	22
69	Grapheneâ€Based Nanomaterials for Neuroengineering: Recent Advances and Future Prospective. Advanced Functional Materials, 2021, 31, 2104887.	7.8	21
70	Bridging pro-inflammatory signals, synaptic transmission and protection in spinal explants in vitro. Molecular Brain, 2018, 11, 3.	1.3	18
71	Bilirubin disrupts calcium homeostasis in neonatal hippocampal neurons: a new pathway of neurotoxicity. Archives of Toxicology, 2020, 94, 845-855.	1.9	18
72	Interfacing Neurons with Nanostructured Electrodes Modulates Synaptic Circuit Features. Advanced Biology, 2020, 4, e2000117.	3.0	17

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73	Preparation of Cytocompatible ITO Neuroelectrodes with Enhanced Electrochemical Characteristics Using a Facile Anodic Oxidation Process. Advanced Functional Materials, 2018, 28, 1605035.	7.8	16
74	Transparent carbon nanotubes promote the outgrowth of enthorinoâ€dentate projections in lesioned organ slice cultures. Developmental Neurobiology, 2020, 80, 316-331.	1.5	15
75	Graphene oxide prevents lateral amygdala dysfunctional synaptic plasticity and reverts long lasting anxiety behavior in rats. Biomaterials, 2021, 271, 120749.	5.7	15
76	The patterns of spontaneous Ca²⁺ signals generated by ventral spinal neurons <i>in vitro</i> show timeâ€dependent refinement. European Journal of Neuroscience, 2009, 29, 1543-1559.	1.2	14
77	Nanomaterial/neuronal hybrid system for functional recovery of the CNS. Drug Discovery Today: Disease Models, 2008, 5, 37-43.	1.2	13
78	Polystyrene Nanopillars with Inbuilt Carbon Nanotubes Enable Synaptic Modulation and Stimulation in Interfaced Neuronal Networks. Advanced Materials Interfaces, 2021, 8, 2002121.	1.9	13
79	Diverse inflammatory threats modulate astrocytes Ca2+ signaling via connexin43 hemichannels in organotypic spinal slices. Molecular Brain, 2021, 14, 159.	1.3	13
80	Tuning Neuronal Circuit Formation in 3D Polymeric Scaffolds by Introducing Graphene at the Bio/Material Interface. Advanced Biology, 2020, 4, 1900233.	3.0	12
81	Successful Regrowth of Retinal Neurons When Cultured Interfaced to Carbon Nanotube Platforms. Journal of Biomedical Nanotechnology, 2017, 13, 559-565.	0.5	11
82	Cytokine inflammatory threat, but not LPS one, shortens GABAergic synaptic currents in the mouse spinal cord organotypic cultures. Journal of Neuroinflammation, 2019, 16, 127.	3.1	11
83	Foxg1 Upregulation Enhances Neocortical Activity. Cerebral Cortex, 2020, 30, 5147-5165.	1.6	10
84	Thin graphene oxide nanoflakes modulate glutamatergic synapses in the amygdala cultured circuits: Exploiting synaptic approaches to anxiety disorders. Nanomedicine: Nanotechnology, Biology, and Medicine, 2020, 26, 102174.	1.7	10
85	Electrophysiological Interactions Between 5-Hydroxytryptamine and Thyrotropin Releasing Hormone on Rat Hippocampal CA1 Neurons. European Journal of Neuroscience, 1994, 6, 953-960.	1.2	9
86	Optimization of Organotypic Cultures of Mouse Spleen for Staining and Functional Assays. Frontiers in Immunology, 2020, 11, 471.	2.2	9
87	Tuning the Reduction of Graphene Oxide Nanoflakes Differently Affects Neuronal Networks in the Zebrafish. Nanomaterials, 2021, 11, 2161.	1.9	9
88	Editorial: Application of Neural Technology to Neuro-Management and Neuro-Marketing. Frontiers in Neuroscience, 2020, 14, 53.	1.4	8
89	Shedding plasma membrane vesicles induced by graphene oxide nanoflakes in brain cultured astrocytes. Carbon, 2021, 176, 458-469.	5.4	8
90	Infrared Nanospectroscopy of Individual Extracellular Microvesicles. Molecules, 2021, 26, 887.	1.7	7

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91	Hybrid Interfaces Made of Nanotubes and Backbone-Altered Dipeptides Tune Neuronal Network Architecture. ACS Chemical Neuroscience, 2020, 11, 162-172.	1.7	5
92	Electrical Stimulation Able to Trigger Locomotor Spinal Circuits Also Induces Dorsal Horn Activity. Neuromodulation, 2016, 19, 38-46.	0.4	4
93	7.32 Engineering the Neural Interface. , 2017, , 642-660.		4
94	Carbon Nanotubes as Electrical Interfaces to Neurons. Fundamental Biomedical Technologies, 2012, , 187-207.	0.2	3
95	Bridging multiple levels of exploration: towards a neuroengineering-based approach to physiological and pathological problems in neuroscience. Frontiers in Neuroscience, 2008, 2, 24-25.	1.4	2
96	Graphene Oxide Nanosheets Target Excitatory Synapses in the Hippocampus: Reversible Down Regulation of Glutamate Neurotransmission In-Vivo. Biophysical Journal, 2018, 114, 672a.	0.2	2
97	5-hydroxytryptamine blocks the long-term potentiation induced by primed bursts in the CA1 region of rat hippocampal slices. Pharmacological Research, 1990, 22, 416.	3.1	1
98	Graphene Oxide Nanosheets and Neural System: From Synaptic Modulation to Neuroinflammation. Biophysical Journal, 2018, 114, 672a.	0.2	1
99	Single Layer Graphene Promotes Neuronal Activity by Regulating Potassium Ion Channels in Cultured Neuronal Networks. Biophysical Journal, 2018, 114, 393a.	0.2	1
100	Network bursting by organotypic spinal slice cultures in the presence of bicuculline and/or strychnine is developmentally regulated. European Journal of Neuroscience, 1998, 10, 2871-2879.	1.2	1
101	Long-term potentiation as an electrophysiological model to study basic mechanisms of learning. Pharmacological Research, 1990, 22, 127.	3.1	0
102	Insights into medioâ€lateral signalling in the developing mouse hindbrain: properties of midline drivers of network activity. Journal of Physiology, 2009, 587, 5007-5007.	1.3	0
103	Injectable Reverse Thermal Gel Biopolymers may Act as an Extracellular Matrix and Cell Vehicle for Cardiac Tissue Engineering. Biophysical Journal, 2015, 108, 486a.	0.2	0
104	Foetal neural progenitors contribute to postnatal circuits formation ex vivo: an electrophysiological investigation. Molecular Brain, 2020, 13, 78.	1.3	0