Elena G Tolkacheva

List of Publications by Year
in descending order

64	1,248	430874 18	414414 32
papers	citations	h-index	g-index

67	67	67	1125
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	In Situ Expansion, Differentiation, and Electromechanical Coupling of Human Cardiac Muscle in a 3D Bioprinted, Chambered Organoid. Circulation Research, 2020, 127, 207-224.	4.5	174
2	Role of Conduction Velocity Restitution and Short-Term Memory in the Development of Action Potential Duration Alternans in Isolated Rabbit Hearts. Circulation, 2008, 118, 17-25.	1.6	118
3	The Restitution Portrait:. A New Method for Investigating Rate-Dependent Restitution. Journal of Cardiovascular Electrophysiology, 2004, 15, 698-709.	1.7	101
4	Condition for alternans and stability of the 1:1 response pattern in a â€œmemoryâ€•model of paced cardiac dynamics. Physical Review E, 2003, 67, 031904.	2.1	95
5	Action Potential Duration Restitution Portraits of Mammalian Ventricular Myocytes: Role of Calcium Current. Biophysical Journal, 2006, 91, 2735-2745.	0.5	47
6	Condition for alternans and its control in a two-dimensional mapping model of paced cardiac dynamics. Physical Review E, 2004, 69, 031904.	2.1	45
7	Intermittent electrical stimulation of the right cervical vagus nerve in salt-sensitive hypertensive rats: effects on blood pressure, arrhythmias, and ventricular electrophysiology. Physiological Reports, 2015, 3, e12476.	1.7	41
8	Analysis of the Fentonâ€“Karma model through an approximation by a one-dimensional map. Chaos, 2002, 12, 1034-1042.	2.5	38
9	Novel Quantitative Analytical Approaches for Rotor Identification and Associated Implications for Mapping. IEEE Transactions on Biomedical Engineering, 2018, 65, 273-281.	4.2	26
10	Heart rate variability and alternans formation in the heart: The role of feedback in cardiac dynamics. Journal of Theoretical Biology, 2014, 350, 90-97.	1.7	25
11	Atrial GIRK Channels Mediate the Effects of Vagus Nerve Stimulation on Heart Rate Dynamics and Arrhythmogenesis. Frontiers in Physiology, 2018, 9, 943.	2.8	25
12	Vitrification and Rewarming of Magnetic Nanoparticleâ€Loaded Rat Hearts. Advanced Materials Technologies, 2022, 7, 2100873.	5.8	25
13	The effect of cardiac sympathetic denervation through bilateral stellate ganglionectomy on electrical properties of the heart. American Journal of Physiology - Heart and Circulatory Physiology, 2011, 301, H192-H199.	3.2	24
14	Interventricular heterogeneity as a substrate for arrhythmogenesis of decoupled mitochondria during ischemia in the whole heart. American Journal of Physiology - Heart and Circulatory Physiology, 2012, 303, H224-H233.	3.2	23
15	The dual effect of ephaptic coupling on cardiac conduction with heterogeneous expression of connexin 43. Journal of Theoretical Biology, 2016, 397, 103-114.	1.7	22
16	Chronic Low-Level Vagus Nerve Stimulation Improves Long-Term Survival in Salt-Sensitive Hypertensive Rats. Frontiers in Physiology, 2019, 10, 25.	2.8	22
17	Restitution in mapping models with an arbitrary amount of memory. Chaos, 2005, 15, 023701.	2.5	21
18	An Ionically Based Mapping Model with Memory for Cardiac Restitution. Bulletin of Mathematical Biology, 2007, 69, 459-482.	1.9	21

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19	Inhibition of the unfolded protein response reduces arrhythmia risk after myocardial infarction. Journal of Clinical Investigation, 2021, 131, .	8.2	20
20	Spatiotemporal Evolution and Prediction of [Ca²⁺]_i and APD Alternans in Isolated Rabbit Hearts. Journal of Cardiovascular Electrophysiology, 2013, 24, 1287-1295.	1.7	19
21	Expression and relevance of the G protein-gated K+ channel in the mouse ventricle. Scientific Reports, 2018, 8, 1192.	3.3	19
22	Chronic cyclic vagus nerve stimulation has beneficial electrophysiological effects on healthy hearts in the absence of autonomic imbalance. Physiological Reports, 2016, 4, e12786.	1.7	18
23	Intelligent fractional-order PID (FOPID) heart rate controller for cardiac pacemaker. , 2016, , .		17
24	Constant DI pacing suppresses cardiac alternans formation in numerical cable models. Chaos, 2017, 27, 093903.	2.5	17
25	Stochastic vagus nerve stimulation affects acute heart rate dynamics in rats. PLoS ONE, 2018, 13, e0194910.	2.5	15
26	Novel Multiscale Frequency Approach to Identify the Pivot Point of the Rotor1. Journal of Medical Devices, Transactions of the ASME, 2016, 10, .	0.7	13
27	Real-Time Closed Loop Diastolic Interval Control Prevents Cardiac Alternans in Isolated Whole Rabbit Hearts. Annals of Biomedical Engineering, 2018, 46, 555-566.	2.5	13
28	Toward Prediction of the Local Onset of Alternans in the Heart. Biophysical Journal, 2011, 100, 868-874.	0.5	12
29	Nonlinear dynamics of periodically paced cardiac tissue. Nonlinear Dynamics, 2012, 68, 347-363.	5.2	12
30	Feasibility of visualizing higher regions of Shannon entropy in atrial fibrillation patients. , 2015, 2015, 4499-502.		12
31	The role of short term memory and conduction velocity restitution in alternans formation. Journal of Theoretical Biology, 2015, 367, 21-28.	1.7	12
32	The Rate- and Species-Dependence of Short-Term Memory in Cardiac Myocytes. Journal of Biological Physics, 2007, 33, 35-47.	1.5	11
33	Optical mapping of electrical heterogeneities in the heart during global ischemia. , 2009, 2009, 6321-4.		10
34	Intermittent vagal nerve stimulation alters the electrophysiological properties of atrium in the myocardial infarction rat model. , 2014, 2014, 1575-8.		9
35	Characterizing Spatial Dynamics of Bifurcation to Alternans in Isolated Whole Rabbit Hearts Based on Alternate Pacing. BioMed Research International, 2015, 2015, 1-8.	1.9	9
36	Acute cardiovascular and hemodynamic effects of vagus nerve stimulation in conscious hypertensive rats. , 2018, 2018, 3685-3688.		9

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37	Interplay between ephaptic coupling and complex geometry of border zone during acute myocardial ischemia: Effect on arrhythmogeneity. Chaos, 2020, 30, 033111.	2.5	9
38	Visualizing the complex 3D geometry of the perfusion border zone in isolated rabbit heart. Applied Optics, 2012, 51, 2713.	1.8	8
39	Improved Multiscale Entropy Technique with Nearest-Neighbor Moving-Average Kernel for Nonlinear and Nonstationary Short-Time Biomedical Signal Analysis. Journal of Healthcare Engineering, 2018, 2018, 1-13.	1.9	8
40	Novel mapping techniques for rotor core detection using simulated intracardiac electrograms. Journal of Cardiovascular Electrophysiology, 2021, 32, 1268-1280.	1.7	8
41	Clinical Potential of Beatâ€toâ€Beat Diastolic Interval Control in Preventing Cardiac Arrhythmias. Journal of the American Heart Association, 2021, 10, e020750.	3.7	8
42	Kurtosis as a statistical approach to identify the pivot point of the rotor. , 2016, 2016, 497-500.		7
43	Real-time feedback based control of cardiac restitution using optical mapping. , 2015, 2015, 5920-3.		5
44	Pro-arrhythmic effect of heart rate variability during periodic pacing. , 2016, 2016, 149-152.		5
45	The influences of the M2R-GIRK4-RGS6 dependent parasympathetic pathway on electrophysiological properties of the mouse heart. PLoS ONE, 2018, 13, e0193798.	2.5	5
46	A Phase Defect Framework for the Analysis of Cardiac Arrhythmia Patterns. Frontiers in Physiology, 2021, 12, 690453.	2.8	5
47	Novel approaches for quantitative electrogram analysis for intraprocedural guidance for catheter ablation: A case of a patient with persistent atrial fibrillation. Nuclear Medicine and Biomedical Imaging, 2017, 2, .	0.2	5
48	Mechanisms of arrhythmia termination during acute myocardial ischemia: Role of ephaptic coupling and complex geometry of border zone. PLoS ONE, 2022, 17, e0264570.	2.5	5
49	Global vs local control of cardiac alternans in a 1D numerical model of human ventricular tissue. Chaos, 2020, 30, 083123.	2.5	4
50	Regional and Temporal Variation of Ventricular and Conduction Tissue Activity During Ventricular Fibrillation in Canines. Circulation: Arrhythmia and Electrophysiology, 2021, 14, e010281.	4.8	4
51	Computational and Mathematical Methods in Cardiovascular Diseases. Computational and Mathematical Methods in Medicine, 2017, 2017, 1-2.	1.3	3
52	Evaluation of Multiscale Frequency Approach for Visualizing Rotors in Patients with Atrial Fibrillation. , 2018, 2018, 5986-5989.		3
53	Towards the Development of Nonlinear Approaches to Discriminate AF from NSR Using a Single-Lead ECG. Entropy, 2020, 22, 531.	2.2	3
54	Using dominant eigenvalue analysis to predict formation of alternans in the heart. Physical Review E, 2013, 88, 052716.	2.1	2

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55	Rotor pivot point identification with intrinsic mode function complexity index using empirical mode decomposition. , 2016, , .		2
56	Effect of constant-DI pacing on single cell pacing dynamics. Chaos, 2020, 30, 103122.	2.5	2
57	VIEgram â€“ Analysis and Visualization of Intracardiac Electrograms on Patient-Specific 3D Atria Model. , 2020, 2020, 2606-2609.		2
58	Intermittent Vagus Nerve Stimulation Reflexively Modulates Heart Rate Variability in Rats With Chronic Ischemic Heart Failure. Journal of Medical Devices, Transactions of the ASME, 2013, 7, .	0.7	1
59	Stochastic and periodic vagus nerve stimulation: how do they affect the heart?. Bioelectronics in Medicine, 2018, 1, 223-225.	2.0	1
60	Optimizing Multiscale Entropy Approach for Rotor Core Identification using Simulated Intracardiac Electrograms. , 2020, 2020, 414-417.		1
61	Similarity Score for the Identification of Active Sites in Patients With Atrial Fibrillation. Frontiers in Physiology, 2021, 12, 767190.	2.8	1
62	Modified Sequence Method to Assess Baroreflex Sensitivity in Rats. , 2018, 2018, 2764-2767.		0
63	Benchtop Optical Mapping Approaches to Study Arrhythmias. , 2019, , 35-54.		0
64	Expression of SARSâ€CoVâ€2 Viroporins Triggers Cardiac Arrhythmia. FASEB Journal, 2021, 35, .	0.5	0