# Sergei Sukharev

List of Publications by Year
in descending order



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|---|---|---|---|
| 58 papers | 3,821 citations | 159585<br>30 h-index | 155660<br>55 g-index |
| 62 all docs | 62 docs citations | 62 times ranked | 2825 citing authors |

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | The gating mechanism of the large mechanosensitive channel MscL. Nature, 2001, 409, 720-724. | 27.8 | 346 |
| 2 | Mechanosensitive Channels in Microbes. Annual Review of Microbiology, 2010, 64, 313-329. | 7.3 | 287 |
| 3 | Water Dynamics and Dewetting Transitions in the Small Mechanosensitive Channel MscS. Biophysical Journal, 2004, 86, 2883-2895. | 0.5 | 259 |
| 4 | Purification of the Small Mechanosensitive Channel of Escherichia coli (MscS): the Subunit Structure, Conduction, and Gating Characteristicsin Liposomes. Biophysical Journal, 2002, 83, 290-298. | 0.5 | 252 |
| 5 | Structural Models of the MscL Gating Mechanism. Biophysical Journal, 2001, 81, 917-936. | 0.5 | 202 |
| 6 | Mechanosensitive Channels: Multiplicity of Families and Gating Paradigms. Science Signaling, 2004, 2004, re4-re4. | 3.6 | 181 |
| 7 | Molecular force transduction by ion channels â€“ diversity and unifying principles. Journal of Cell Science, 2012, 125, 3075-83. | 2.0 | 168 |
| 8 | A large iris-like expansion of a mechanosensitive channel protein induced by membrane tension. Nature Structural Biology, 2002, 9, 704-710. | 9.7 | 152 |
| 9 | The glutaminase activity of l-asparaginase is not required for anticancer activity against ASNS-negative cells. Blood, 2014, 123, 3596-3606. | 1.4 | 150 |
| 10 | The â€œDashpotâ€•Mechanism of Stretch-dependent Gating in MscS. Journal of General Physiology, 2005, 125, 143-154. | 1.9 | 124 |
| 11 | Gating of the Large Mechanosensitive Channel In Situ: Estimation of the Spatial Scale of the Transition from Channel Population Responses. Biophysical Journal, 2004, 86, 2846-2861. | 0.5 | 116 |
| 12 | Gadolinium Ions Block Mechanosensitive Channels by Altering the Packing and Lateral Pressure of Anionic Lipids. Biophysical Journal, 2010, 98, 1018-1027. | 0.5 | 105 |
| 13 | Straightening and sequential buckling of the pore-lining helices define the gating cycle of MscS. Nature Structural and Molecular Biology, 2007, 14, 1141-1149. | 8.2 | 102 |
| 14 | Dipole Potentials Indicate Restructuring of the Membrane Interface Induced by Gadolinium and Beryllium Ions. Biophysical Journal, 2001, 80, 1851-1862. | 0.5 | 90 |
| 15 | Mechanosensitive channels: what can we learn from ?simple? model systems?. Trends in Neurosciences, 2004, 27, 345-351. | 8.6 | 88 |
| 16 | Gain-of-function Mutations Reveal Expanded Intermediate States and a Sequential Action of Two Gates in MscL. Journal of General Physiology, 2005, 125, 155-170. | 1.9 | 84 |
| 17 | The tension-transmitting 'clutch' in the mechanosensitive channel MscS. Nature Structural and Molecular Biology, 2010, 17, 451-458. | 8.2 | 77 |
| 18 | On the Conformation of the COOH-terminal Domain of the Large Mechanosensitive Channel MscL. Journal of General Physiology, 2003, 121, 227-244. | 1.9 | 73 |

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|---|---|---|---|
| 19 | Adaptive behavior of bacterial mechanosensitive channels is coupled to membrane mechanics. Journal of General Physiology, 2010, 135, 641-652. | 1.9 | 70 |
| 20 | Adaptive MscS Gating in the Osmotic Permeability Response in <i>E. coli</i>: The Question of Time. Biochemistry, 2011, 50, 4087-4096. | 2.5 | 70 |
| 21 | Characterization of the Resting MscS: Modeling and Analysis of the Closed Bacterial Mechanosensitive Channel of Small Conductance. Biophysical Journal, 2008, 94, 1252-1266. | 0.5 | 63 |
| 22 | Mechanosensitive Channel MscS in the Open State: Modeling of the Transition, Explicit Simulations, and Experimental Measurements of Conductance. Journal of General Physiology, 2008, 132, 67-83. | 1.9 | 58 |
| 23 | Glutaminase Activity of <scp>L</scp>-Asparaginase Contributes to Durable Preclinical Activity against Acute Lymphoblastic Leukemia. Molecular Cancer Therapeutics, 2019, 18, 1587-1592. | 4.1 | 46 |
| 24 | The cytoplasmic cage domain of the mechanosensitive channel MscS is a sensor of macromolecular crowding. Journal of General Physiology, 2014, 143, 543-557. | 1.9 | 43 |
| 25 | Activation of bacterial channel MscL in mechanically stimulated droplet interface bilayers. Scientific Reports, 2015, 5, 13726. | 3.3 | 43 |
| 26 | Mechanosensitive channels in bacteria as membrane tension reporters. FASEB Journal, 1999, 13, S55-61. | 0.5 | 42 |
| 27 | Effects on Membrane Lateral Pressure Suggest Permeation Mechanisms for Bacterial Quorum Signaling Molecules. Biochemistry, 2011, 50, 6983-6993. | 2.5 | 41 |
| 28 | The pathway and spatial scale for MscS inactivation. Journal of General Physiology, 2011, 138, 49-57. | 1.9 | 41 |
| 29 | Effects of GsMTx4 on Bacterial Mechanosensitive Channels in Inside-Out Patches from Giant Spheroplasts. Biophysical Journal, 2010, 99, 2870-2878. | 0.5 | 39 |
| 30 | Tension-activated channels in the mechanism of osmotic fitness in <i>Pseudomonas aeruginosa</i>. Journal of General Physiology, 2017, 149, 595-609. | 1.9 | 37 |
| 31 | Mechanism of Catalysis by <scp>l</scp>-Asparaginase. Biochemistry, 2020, 59, 1927-1945. | 2.5 | 36 |
| 32 | The mechanoelectrical response of the cytoplasmic membrane of <i>Vibrio cholerae</i>. Journal of General Physiology, 2013, 142, 75-85. | 1.9 | 31 |
| 33 | Capping Transmembrane Helices of MscL with Aromatic Residues Changes Channel Response to Membrane Stretchâ€. Biochemistry, 2005, 44, 12589-12597. | 2.5 | 30 |
| 34 | The Membrane Lateral Pressure-Perturbing Capacity of Parabens and Their Effects on the Mechanosensitive Channel Directly Correlate with Hydrophobicity. Biochemistry, 2008, 47, 10540-10550. | 2.5 | 30 |
| 35 | 2,2,2-Trifluoroethanol Changes the Transition Kinetics and Subunit Interactions in the Small Bacterial Mechanosensitive Channel MscS. Biophysical Journal, 2007, 92, 2771-2784. | 0.5 | 27 |
| 36 | Catalytic Role of the Substrate Defines Specificity of Therapeutic l-Asparaginase. Journal of Molecular Biology, 2015, 427, 2867-2885. | 4.2 | 25 |

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|---|---|---|---|
| 37 | Analyses of gating thermodynamics and effects of deletions in the mechanosensitive channel TREK-1. Channels, 2011, 5, 34-42. | 2.8 | 20 |
| 38 | Partitioning of Seven Different Classes of Antibiotics into LPS Monolayers Supports Three Different Permeation Mechanisms through the Outer Bacterial Membrane. Langmuir, 2021, 37, 1372-1385. | 3.5 | 19 |
| 39 | Mechanics of Droplet Interface Bilayer â€œUnzippingâ€•Defines the Bandwidth for the Mechanotransduction Response of Reconstituted MscL. Advanced Materials Interfaces, 2017, 4, 1600805. | 3.7 | 16 |
| 40 | High-Affinity Interactions of Beryllium(2+) with Phosphatidylserine Result in a Cross-Linking Effect Reducing Surface Recognition of the Lipid. Biochemistry, 2017, 56, 5457-5470. | 2.5 | 16 |
| 41 | Structural models of TREK channels and their gating mechanism. Channels, 2011, 5, 23-33. | 2.8 | 15 |
| 42 | The host-defense peptide piscidin P1 reorganizes lipid domains in membranes and decreases activation energies in mechanosensitive ion channels. Journal of Biological Chemistry, 2019, 294, 18557-18570. | 3.4 | 14 |
| 43 | Mechanical Activation of MscL Revealed by a Locally Distributed Tension Molecular Dynamics Approach. Biophysical Journal, 2021, 120, 232-242. | 0.5 | 13 |
| 44 | A novel mechanosensitive channel controls osmoregulation, differentiation, and infectivity in Trypanosoma cruzi. ELife, 2021, 10, . | 6.0 | 12 |
| 45 | Spatiotemporal relationships defining the adaptive gating of the bacterial mechanosensitive channel MscS. European Biophysics Journal, 2018, 47, 663-677. | 2.2 | 10 |
| 46 | Differential Interactions of Piscidins with Phospholipids and Lipopolysaccharides at Membrane Interfaces. Langmuir, 2020, 36, 5065-5077. | 3.5 | 10 |
| 47 | Mechanosensitive Channels Activity in a Droplet Interface Bilayer System. Materials Research Society Symposia Proceedings, 2014, 1621, 171-176. | 0.1 | 7 |
| 48 | Membrane Affinity of Platensimycin and Its Dialkylamine Analogs. International Journal of Molecular Sciences, 2015, 16, 17909-17932. | 4.1 | 6 |
| 49 | Channel disassembled: Pick, tweak, and soak parts to soften. Channels, 2017, 11, 173-175. | 2.8 | 6 |
| 50 | The voltage-dependence of MscL has dipolar and dielectric contributions and is governed by local intramembrane electric field. Scientific Reports, 2018, 8, 13607. | 3.3 | 6 |
| 51 | Recovery of Equilibrium Free Energy from Nonequilibrium Thermodynamics with Mechanosensitive Ion Channels in <i>E.Âcoli</i>. Physical Review Letters, 2020, 124, 228101. | 7.8 | 6 |
| 52 | Multifunctional, Micropipette-based Method for Incorporation And Stimulation of Bacterial Mechanosensitive Ion Channels in Droplet Interface Bilayers. Journal of Visualized Experiments, 2015, , . | 0.3 | 5 |
| 53 | A skin-inspired soft material with directional mechanosensation. Bioinspiration and Biomimetics, 2021, 16, 046014. | 2.9 | 5 |
| 54 | MscL, a Bacterial Mechanosensitive Channel. , 0, , 259-290. | | 2 |

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|---|---|---|---|
| 55 | Isothermal Titration Calorimetry of Be<sup>2+</sup> with Phosphatidylserine Models Guides All-Atom Force-Field Development for Lipidâ€“Ion Interactions. Journal of Physical Chemistry B, 2019, 123, 1554-1565. | 2.6 | 1 |
| 56 | The Glutaminase Activity Of L-Asparaginase Is Not Required For Anticancer Activity Against Asns-Negative Cell Lines. Blood, 2013, 122, 4912-4912. | 1.4 | 1 |
| 57 | The Gating Mechanism of Mechanosensitive Channels in Droplet Interface Bilayers. Materials Research Society Symposia Proceedings, 2015, 1722, 32. | 0.1 | 0 |
| 58 | Active Role of the Substrate During Catalysis by the Therapeutic Enzyme Lâ€Asparaginase II. FASEB Journal, 2015, 29, 573.51. | 0.5 | 0 |