Antonio Alcaraz

List of Publications by Year
in descending order

88 papers	2,251 citations	257357 24 h-index	223716 46 g-index
88 all docs	88 docs citations	88 times ranked	2671 citing authors

#	Article	IF	Citations
1	Severe Acute Respiratory Syndrome Coronavirus Envelope Protein Ion Channel Activity Promotes Virus Fitness and Pathogenesis. PLoS Pathogens, 2014, 10, e1004077.	2.1	440
2	Coronavirus E protein forms ion channels with functionally and structurally-involved membrane lipids. Virology, 2012, 432, 485-494.	1.1	189
3	Salting Out the Ionic Selectivity of a Wide Channel: The Asymmetry of OmpF. Biophysical Journal, 2004, 87, 943-957.	0.2	155
4	A pH-Tunable Nanofluidic Diode:Â Electrochemical Rectification in a Reconstituted Single Ion Channel. Journal of Physical Chemistry B, 2006, 110, 21205-21209.	1.2	117
5	Electric field-assisted proton transfer and water dissociation at the junction of a fixed-charge bipolar membrane. Chemical Physics Letters, 1998, 294, 406-412.	1.2	112
6	Analysis of SARS-CoV E protein ion channel activity by tuning the protein and lipid charge. Biochimica Et Biophysica Acta - Biomembranes, 2013, 1828, 2026-2031.	1.4	82
7	Diffusion, Exclusion, and Specific Binding in a Large Channel: A Study of OmpF Selectivity Inversion. Biophysical Journal, 2009, 96, 56-66.	0.2	77
8	Amphiphilic COSAN and I2-COSAN crossing synthetic lipid membranes: planar bilayers and liposomes. Chemical Communications, 2014, 50, 6700.	2.2	68
9	Modeling of pH-Switchable Ion Transport and Selectivity in Nanopore Membranes with Fixed Charges. Journal of Physical Chemistry B, 2003, 107, 13178-13187.	1.2	64
10	Dielectric saturation of water in a membrane protein channel. Physical Chemistry Chemical Physics, 2009, 11, 358-365.	1.3	58
11	Bioelectrical Signals and Ion Channels in the Modeling of Multicellular Patterns and Cancer Biophysics. Scientific Reports, 2016, 6, 20403.	1.6	55
12	Insights on the permeability of wide protein channels: measurement and interpretation of ion selectivity. Integrative Biology (United Kingdom), 2011, 3, 159-172.	0.6	49
13	Hydrophobic Pulmonary Surfactant Proteins SP-B and SP-C Induce Pore Formation in Planar Lipid Membranes: Evidence for Proteolipid Pores. Biophysical Journal, 2013, 104, 146-155.	0.2	45
14	Electrostatic properties and macroscopic electrodiffusion in OmpF porin and mutants. Bioelectrochemistry, 2007, 70, 320-327.	2.4	40
15	Overcharging below the nanoscale: Multivalent cations reverse the ion selectivity of a biological channel. Physical Review E, 2010, 81, 021912.	0.8	40
16	Directional ion selectivity in a biological nanopore with bipolar structure. Journal of Membrane Science, 2009, 331, 137-142.	4.1	38
17	Electrical pumping of potassium ions against an external concentration gradient in a biological ion channel. Applied Physics Letters, 2013, 103, .	1.5	36
18	Conductive and Capacitive Properties of the Bipolar Membrane Junction Studied by AC Impedance Spectroscopyâ€. Journal of Physical Chemistry B, 2001, 105, 11669-11677.	1.2	32

#	Article	IF	Citations
19	Membrane Potential Bistability in Nonexcitable Cells as Described by Inward and Outward Voltage-Gated Ion Channels. Journal of Physical Chemistry B, 2014, 118, 12444-12450.	1.2	32
20	Ion Transport in Confined Geometries below the Nanoscale: Access Resistance Dominates Protein Channel Conductance in Diluted Solutions. ACS Nano, 2017, 11, 10392-10400.	7.3	30
21	Protein Ion Channels as Molecular Ratchets. Switchable Current Modulation in Outer Membrane Protein F Porin Induced by Millimolar La³⁺ Ions. Journal of Physical Chemistry C, 2012, 116, 6537-6542.	1.5	28
22	AC impedance spectra of bipolar membranes: an experimental study. Journal of Membrane Science, 1998, 150, 43-56.	4.1	27
23	Ion Selectivity of a Biological Channel at High Concentration Ratio: Insights on Small Ion Diffusion and Binding. Journal of Physical Chemistry B, 2009, 113, 8745-8751.	1.2	27
24	Donnan Equilibrium of Ionic Drugs in pH-Dependent Fixed Charge Membranes: Theoretical Modeling. Journal of Colloid and Interface Science, 2002, 253, 171-179.	5.0	25
25	Effects of pH on ion transport in weak amphoteric membranes. Journal of Electroanalytical Chemistry, 1997, 436, 119-125.	1.9	24
26	Effects of water dielectric saturation on the spaceâ€“charge junction of a fixed-charge bipolar membrane. Chemical Physics Letters, 2000, 326, 87-92.	1.2	24
27	pH and supporting electrolyte concentration effects on the passive transport of cationic and anionic drugs through fixed charge membranes. Journal of Membrane Science, 1999, 161, 143-155.	4.1	22
28	Lipid charge regulation of non-specific biological ion channels. Physical Chemistry Chemical Physics, 2014, 16, 3881-3893.	1.3	21
29	Model calculations of ion transport against its concentration gradient when the driving force is a pH difference across a charged membrane. Journal of Membrane Science, 1997, 135, 135-144.	4.1	20
30	Scaling Behavior of Ionic Transport in Membrane Nanochannels. Nano Letters, 2018, 18, 6604-6610.	4.5	20
31	Divalent cations reduce the pH sensitivity of OmpF channel inducing the pK_ashift of key acidic residues. Physical Chemistry Chemical Physics, 2011, 13, 563-569.	1.3	18
32	A fluid approach to simple circuits. Nature Nanotechnology, 2009, 4, 403-404.	15.6	16
33	Increased salt concentration promotes competitive block of OmpF channel by protons. Biochimica Et Biophysica Acta - Biomembranes, 2012, 1818, 2777-2782.	1.4	16
34	Linearity, saturation and blocking in a large multiionic channel: Divalent cation modulation of the OmpF porin conductance. Biochemical and Biophysical Research Communications, 2011, 404, 330-334.	1.0	15
35	Ion channel activity of the CSFV p7 viroporin in surrogates of the ER lipid bilayer. Biochimica Et Biophysica Acta - Biomembranes, 2016, 1858, 30-37.	1.4	14
36	Transport mechanisms of SARS-CoV-E viroporin in calcium solutions: Lipid-dependent Anomalous Mole Fraction Effect and regulation of pore conductance. Biochimica Et Biophysica Acta - Biomembranes, 2021, 1863, 183590.	1.4	13

#	Article	IF	Citations
37	Stochastic pumping of ions based on colored noise in bacterial channels under acidic stress. Nanoscale, 2016, 8, 13422-13428.	2.8	12
38	Lipid Headgroup Charge and Acyl Chain Composition Modulate Closure of Bacterial Î²-Barrel Channels. International Journal of Molecular Sciences, 2019, 20, 674.	1.8	11
39	Simple molecular model for the binding of antibiotic molecules to bacterial ion channels. Journal of Chemical Physics, 2003, 119, 8097-8102.	1.2	10
40	Electrostatic Interactions Drive the Nonsteric Directional Block of OmpF Channel by La³⁺. Langmuir, 2013, 29, 15320-15327.	1.6	10
41	Effects of extreme pH on ionic transport through protein nanopores: the role of ion diffusion and charge exclusion. Physical Chemistry Chemical Physics, 2016, 18, 21668-21675.	1.3	10
42	Modeling of Amino Acid Electrodiffusion through Fixed Charge Membranes. Journal of Colloid and Interface Science, 2001, 242, 164-173.	5.0	9
43	The role of the salt electrolyte on the electrical conductive properties of a polymeric bipolar membrane. Journal of Electroanalytical Chemistry, 2001, 513, 36-44.	1.9	9
44	Single-molecule conformational dynamics of viroporin ion channels regulated by lipid-protein interactions. Bioelectrochemistry, 2021, 137, 107641.	2.4	9
45	Experimental demonstration of charge inversion in a protein channel in the presence of monovalent cations. Electrochemistry Communications, 2014, 48, 32-34.	2.3	8
46	Selectivity of Protein Ion Channels and the Role of Buried Charges. Analytical Solutions, Numerical Calculations, and MD Simulations. Journal of Physical Chemistry B, 2015, 119, 8475-8479.	1.2	8
47	Structural biology workflow for the expression and characterization of functional human sodium glucose transporter type 1 in Pichia pastoris. Scientific Reports, 2019, 9, 1203.	1.6	8
48	Heat loss and hypothermia in free diving: Estimation of survival time under water. American Journal of Physics, 2003, 71, 333-337.	0.3	7
49	Entropyâ€“enthalpy compensation at the single protein level: pH sensing in the bacterial channel OmpF. Nanoscale, 2014, 6, 15210-15215.	2.8	7
50	Fluctuation-Driven Transport in Biological Nanopores. A 3D Poissonâ€“Nernstâ€“Planck Study. Entropy, 2017, 19, 116.	1.1	7
51	Mutation-induced changes of transmembrane pore size revealed by combined ion-channel conductance and single vesicle permeabilization analyses. Biochimica Et Biophysica Acta - Biomembranes, 2018, 1860, 1015-1021.	1.4	7
52	Divalent Metal Ion Transport across Large Biological Ion Channels and Their Effect on Conductance and Selectivity. Biochemistry Research International, 2012, 2012, 1-12.	1.5	6
53	Effect of endosomal acidification on small ion transport through the anthrax toxin <scp>PA</scp>₆₃ channel. FEBS Letters, 2017, 591, 3481-3492.	1.3	5
54	Excess white noise to probe transport mechanisms in a membrane channel. Physical Review E, 2015, 91, 062704.	0.8	4

#	Article	IF	Citations
55	Specific adsorption of trivalent cations in biological nanopores determines conductance dynamics and reverses ionic selectivity. Physical Chemistry Chemical Physics, 2021, 23, 1352-1362.	1.3	4
56	Dynorphin A induces membrane permeabilization by formation of proteolipidic pores. Insights from electrophysiology and computational simulations. Computational and Structural Biotechnology Journal, 2022, 20, 230-240.	1.9	4
57	On Channel Activity of Synthetic Peptides Derived from Severe and Acute Respiratory Syndrome Coronavirus (SARS-CoV) E Protein. Biophysical Journal, 2012, 102, 656a-657a.	0.2	2
58	On the different sources of cooperativity in pH titrating sites of a membrane protein channel. European Physical Journal E, 2016, 39, 29.	0.7	2
59	Entropic Modulation of Ion Transport through OmpF Channel. Molecular Basis of pH Sensing Derived from Cooperative Interactions. Biophysical Journal, 2012, 102, 269a-270a.	0.2	1
60	Ion Channels Formed by SARS Coronavirus Envelope Protein: Lipid Regulation of Conductance and Selectivity. Biophysical Journal, 2013, 104, 632a.	0.2	1
61	CSFV p7 Viroporin ION Channel Activity in Lipid Bilayers Mimicking theÂER Membrane. Biophysical Journal, 2016, 110, 115a.	0.2	1
62	Comment on â€œRole of the centrifugal force in vehicle roll,â€•by Rod Cross [Am. J. Phys. 67 (5), 447â€“448 (1998)]. American Journal of Physics, 2002, 70, 556-557.	0.3	0
63	Dielectric Saturation of Water in a Protein Channel. Biophysical Journal, 2009, 96, 603a.	0.2	0
64	Negative Cooperativity in a Protein Ion Channel Revealed by Current Noise, Conductance and Selectivity Experiments. Biophysical Journal, 2009, 96, 603a.	0.2	0
65	Directional Ion Selectivity In An Ion Channel With Bipolar Charge Distribution. Biophysical Journal, 2009, 96, 662a.	0.2	0
66	Overcharging Below the Nanoscale: Multivalent Cations Reverse the Ion Selectivity of a Biological Channel. Biophysical Journal, 2010, 98, 17a.	0.2	0
67	Increased Salt Concentration Promotes Negative Cooperativity in OmpF Channel. Biophysical Journal, 2010, 98, 333a.	0.2	0
68	Divalent Cations Reduce the pH Sensitivity of OmpF Channel Inducing the PKA Shift of Key Acidic Residues. Biophysical Journal, 2011, 100, 331a.	0.2	0
69	Measurement and Interpretation of Ion Selectivity in Wide Channels: Merging Information from Different Approaches. Biophysical Journal, 2011, 100, 577a.	0.2	0
70	Effect of Hydrophobic Surfactant Proteins SP-B and SP-C on the Permeability of Phospholipid Membranes. Biophysical Journal, 2011, 100, 337a.	0.2	0
71	Effects of Divalent Cations on the Single-Channel Conductance of the OmpF Channel: Linearity, Saturation and Blocking. Biophysical Journal, 2011, 100, 577a.	0.2	0
72	Modulation of Conductance and Ion Selectivity of OmpF Porin by La3+ÂIons. Biophysical Journal, 2012, 102, 335a.	0.2	0

#	Article	IF	Citations
73	Current Fluctuation Analysis to Study Mg2+-Binding in the Bacterial Porin OmpF. Biophysical Journal, 2013, 104, 630a.	0.2	0
74	La3+-Induced Asymmetric Current Inhibition in OmpF Channel. Biophysical Journal, 2013, 104, 630a.	0.2	0
75	Experimental Observation of Surface Charge Inversion in a Biological Nanopore in Presence of Monovalent and Multivalent Cations. Biophysical Journal, 2014, 106, 210a.	0.2	0
76	Electrical Pumping of Potassium Ions Against an External Concentration Gradient in a Biological Ion Channel. Biophysical Journal, 2014, 106, 416a.	0.2	0
77	Cobaltabisdicarbollide Macroanion is able to Diffuse across the Lipid Membrane; Study of Kinetics and Transport. Biophysical Journal, 2014, 106, 210a.	0.2	0
78	Relevance of SARS-CoV E Protein Ion Channel Activity in Virus Pathogenesis. Biophysical Journal, 2015, 108, 582a.	0.2	0
79	Current Fluctuation Analysis in a Protein Nanopore. Biophysical Journal, 2015, 108, 634a.	0.2	0
80	Buried Charges and their Effect on Ion Channel Selectivity. Analytical Solutions, Numerical Calculations and MD Simulations. Biophysical Journal, 2016, 110, 245a.	0.2	0
81	Fluctuation-Driven Transport in Bacterial Channels under Acidic Stress. Biophysical Journal, 2017, 112, 545a.	0.2	0
82	Effect of the Endosomal Acidification on Small Ion Transport Through the Anthrax Toxin PA63 Channel. Biophysical Journal, 2018, 114, 559a.	0.2	0
83	Interfacial Effects Dominate Ion Permeation through Membrane Channels in Low Ionic Strength Solutions. Biophysical Journal, 2018, 114, 260a.	0.2	0
84	Scaling Laws for Ionic Transport in Nanochannels: Bulk, Surface and Interfacial Effects. Biophysical Journal, 2018, 114, 609a.	0.2	0
85	Gating of Bacterial Beta-Barrel Channels is Regulated by Salt Concentration and Lipid Composition. Biophysical Journal, 2020, 118, 416a.	0.2	0
86	Assessing the Role of Electrostatic Interactions in the Mechanism of Beta-Barrel Channel Gating. Biophysical Journal, 2021, 120, 156a.	0.2	0
87	Dynorphin a Induces Membrane Permeabilization by Formation of Proteolipidic Pores. Biophysical Journal, 2021, 120, 142a.	0.2	0
88	Bacterial Porins. Springer Series in Biophysics, 2015, , 101-121.	0.4	0