Santiago Schnell

List of Publications by Year
in descending order

150 papers	4,981 citations	101535 36 h-index	114455 63 g-index
186 all docs	186 docs citations	186 times ranked	5304 citing authors

#	Article	IF	Citations
1	An intrinsically disordered protein region encoded by the human disease gene <i>CLEC16A</i> regulates mitophagy. Autophagy, 2023, 19, 525-543.	9.1	4
2	On the Validity of the Stochastic Quasi-Steady-State Approximation in Open Enzyme Catalyzed Reactions: Timescale Separation or Singular Perturbation?. Bulletin of Mathematical Biology, 2022, 84, 7.	1.9	1
3	EnzymeMLâ€"a data exchange format for biocatalysis and enzymology. FEBS Journal, 2022, 289, 5864-5874.	4.7	14
4	On the anti-quasi-steady-state conditions of enzyme kinetics. Mathematical Biosciences, 2022, 350, 108870.	1.9	8
5	Stochastic enzyme kinetics and the quasi-steady-state reductions: Application of the slow scale linear noise approximation Ã la Fenichel. Journal of Mathematical Biology, 2022, 85, .	1.9	1
6	On the quasi-steady-state approximation in an open Michaelisâ€"Menten reaction mechanism. AIMS Mathematics, 2021, 6, 6781-6814.	1.6	11
7	Interpreting SARS-CoV-2 seroprevalence, deaths, and fatality rate â€" Making a case for standardized reporting to improve communication. Mathematical Biosciences, 2021, 333, 108545.	1.9	13
8	Concentration sensing in crowded environments. Biophysical Journal, 2021, 120, 1718-1731.	0.5	1
9	Mapping protein-protein interactions in homodimeric CYP102A1 by crosslinking and mass spectrometry. Biophysical Chemistry, 2021, 274, 106590.	2.8	9
10	The embryonic trunk neural crest microenvironment regulates the plasticity and invasion of human neuroblastoma via TrkB signaling. Developmental Biology, 2021, 480, 78-90.	2.0	2
11	Explaining inter-lab variance in C. elegans N2 lifespan: Making a case for standardized reporting to enhance reproducibility. Experimental Gerontology, 2021, 156, 111622.	2.8	5
12	Hunting $varepsilon$: The Origin and Validity of Quasi-Steady-State Reductions in Enzyme Kinetics. SIAM Journal on Applied Dynamical Systems, 2021, 20, 2450-2481.	1.6	2
13	Firing patterns of gonadotropin-releasing hormone neurons are sculpted by their biologic state. Royal Society Open Science, 2020, 7, 201040.	2.4	0
14	The quasi-steady-state approximations revisited: Timescales, small parameters, singularities, and normal forms in enzyme kinetics. Mathematical Biosciences, 2020, 325, 108339.	1.9	18
15	Are the biomedical sciences ready for synthetic biology?. Biomolecular Concepts, 2020, 11, 23-31.	2.2	4
16	Î²-arrestin mediates communication between plasma membrane and intracellular GPCRs to regulate signaling. Communications Biology, 2020, 3, 789.	4.4	4
17	Trends in NIH-supported career development funding: implications for institutions, trainees, and the future research workforce. JCI Insight, 2020, 5, .	5.0	8
18	Disorder Atlas: Web-based software for the proteome-based interpretation of intrinsic disorder predictions. Computational Biology and Chemistry, 2019, 83, 107090.	2.3	7

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19	Information processing by endoplasmic reticulum stress sensors. Journal of the Royal Society Interface, 2019, 16, 20190288.	3.4	4
20	Characteristic, completion or matching timescales? An analysis of temporary boundaries in enzyme kinetics. Journal of Theoretical Biology, 2019, 481, 28-43.	1.7	9
21	Changes in Both Neuron Intrinsic Properties and Neurotransmission Are Needed to Drive the Increase in GnRH Neuron Firing Rate during Estradiol-Positive Feedback. Journal of Neuroscience, 2019, 39, 2091-2101.	3.6	12
22	Autoantibodies Directed Toward a Novel IA-2 Variant Protein Enhance Prediction of Type 1 Diabetes. Diabetes, 2019, 68, 1819-1829.	0.6	12
23	Clathrin Heavy Chain Knockdown Impacts CXCR4 Signaling and Post-translational Modification. Frontiers in Cell and Developmental Biology, 2019, 7, 77.	3.7	6
24	Enhancing career development of postdoctoral trainees: act locally and beyond. Journal of Physiology, 2019, 597, 2317-2322.	2.9	10
25	Dynamic Recruitment of Single RNAs to Processing Bodies Depends on RNA Functionality. Molecular Cell, 2019, 74, 521-533.e6.	9.7	100
26	On the Need to Develop Guidelines for Characterizing and Reporting Intrinsic Disorder in Proteins. Proteomics, 2019, 19, 1800415.	2.2	7
27	STRENDA DB: enabling the validation and sharing of enzyme kinetics data. FEBS Journal, 2018, 285, 2193-2204.	4.7	38
28	Gonadotropin-Releasing Hormone (GnRH) Neuron Excitability Is Regulated by Estradiol Feedback and Kisspeptin. Journal of Neuroscience, 2018, 38, 1249-1263.	3.6	34
29	Inferring Intracellular Signal Transduction Circuitry from Molecular Perturbation Experiments. Bulletin of Mathematical Biology, 2018, 80, 1310-1344.	1.9	3
30	How to design an optimal sensor network for the unfolded protein response. Molecular Biology of the Cell, 2018, 29, 3052-3062.	2.1	3
31	Phase-plane geometries in coupled enzyme assays. Mathematical Biosciences, 2018, 306, 126-135.	1.9	4
32	A Kinetic Analysis of Coupled (or Auxiliary) Enzyme Reactions. Bulletin of Mathematical Biology, 2018, 80, 3154-3183.	1.9	8
33	A theory of reactant-stationary kinetics for a mechanism of zymogen activation. Biophysical Chemistry, 2018, 242, 34-44.	2.8	7
34	â€œReproducibleâ€•Research in Mathematical Sciences Requires Changes in our Peer Review Culture and Modernization of our Current Publication Approach. Bulletin of Mathematical Biology, 2018, 80, 3095-3105.	1.9	17
35	An empirical analysis of enzyme function reporting for experimental reproducibility: Missing/incomplete information in published papers. Biophysical Chemistry, 2018, 242, 22-27.	2.8	19
36	Do Cellular Condensates Accelerate Biochemical Reactions? Lessons from Microdroplet Chemistry. Biophysical Journal, 2018, 115, 3-8.	0.5	70

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37	Radial WNT5A-Guided Post-mitotic Filopodial Pathfinding Is Critical for Midgut Tube Elongation. Developmental Cell, 2018, 46, 173-188.e3.	7.0	19
38	Predicting neuroblastoma using developmental signals and a logic-based model. Biophysical Chemistry, 2018, 238, 30-38.	2.8	11
39	The importance of accurately correcting for the natural abundance of stable isotopes. Analytical Biochemistry, 2017, 520, 27-43.	2.4	42
40	On the origin of non-membrane-bound organelles, and their physiological function. Journal of Theoretical Biology, 2017, 434, 42-49.	1.7	26
41	Novel Hybrid Phenotype Revealed in Small Cell Lung Cancer by a Transcription Factor Network Model That Can Explain Tumor Heterogeneity. Cancer Research, 2017, 77, 1063-1074.	0.9	81
42	On the validity and errors of the pseudo-first-order kinetics in ligandâ€“receptor binding. Mathematical Biosciences, 2017, 287, 3-11.	1.9	13
43	Approaches for the estimation of timescales in nonlinear dynamical systems: Timescale separation in enzyme kinetics as a case study. Mathematical Biosciences, 2017, 287, 122-129.	1.9	14
44	Globalization and changing trends of biomedical research output. JCI Insight, 2017, 2, .	5.0	22
45	A collection of intrinsic disorder characterizations from eukaryotic proteomes. Scientific Data, 2016, 3, 160045.	5.3	17
46	Quantitative proteome-based guidelines for intrinsic disorder characterization. Biophysical Chemistry, 2016, 213, 6-16.	2.8	11
47	RhoC GTPase Is a Potent Regulator of Glutamine Metabolism and N-Acetylaspartate Production in Inflammatory Breast Cancer Cells. Journal of Biological Chemistry, 2016, 291, 13715-13729.	3.4	29
48	Coordination of signaling and tissue mechanics during morphogenesis of murine intestinal villi: a role for mitotic cell rounding. Integrative Biology (United Kingdom), 2016, 8, 918-928.	1.3	37
49	On the estimation errors of KM and V from time-course experiments using the Michaelisâ€“Menten equation. Biophysical Chemistry, 2016, 219, 17-27.	2.8	54
50	Estimation of the lag time in a subsequent monomer addition model for fibril elongation. Physical Chemistry Chemical Physics, 2016, 18, 21259-21268.	2.8	34
51	Loss of the Ubiquitin-conjugating Enzyme UBE2W Results in Susceptibility to Early Postnatal Lethality and Defects in Skin, Immune, and Male Reproductive Systems. Journal of Biological Chemistry, 2016, 291, 3030-3042.	3.4	20
52	A computational approach to studying ageing at the individual level. Proceedings of the Royal Society B: Biological Sciences, 2016, 283, 20152346.	2.6	3
53	Ten Simple Rules for a Computational Biologistâ€™s Laboratory Notebook. PLoS Computational Biology, 2015, 11, e1004385.	3.2	31
54	Effects of Crowding Agents and Volume Exclusion on Amyloid Beta Fibrillation. Biophysical Journal, 2015, 108, 51a.	0.5	0

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55	Villification in the mouse: Bmp signals control intestinal villus patterning. Development (Cambridge), 2015, 143, 427-36.	2.5	97
56	Molecular aspects of pancreatic beta cell failure and diabetes. Molecular Aspects of Medicine, 2015, 42, 1-2.	6.4	4
57	Development, growth and maintenance of Î²-cell mass: Models are also part of the story. Molecular Aspects of Medicine, 2015, 42, 78-90.	6.4	19
58	Evidence for Residual and Partly Reparable Insulin Secretory Function and Maintained Î²-Cell Gene Expression in Islets From Patients With Type 1 Diabetes. Diabetes, 2015, 64, 2335-2337.	0.6	1
59	Rethinking Models of Pattern Formation in Somitogenesis. Cell Systems, 2015, 1, 248-249.	6.2	4
60	Unraveling the contribution of pancreatic beta-cell suicide in autoimmune type 1 diabetes. Journal of Theoretical Biology, 2015, 375, 77-87.	1.7	22
61	Optimal Experimental Design to Estimate Statistically Significant Periods of Oscillations in Time Course Data. PLoS ONE, 2014, 9, e93826.	2.5	4
62	Surveying the floodgates: estimating protein flux into the endoplasmic reticulum lumen in Saccharomyces cerevisiae. Frontiers in Physiology, 2014, 5, 444.	2.8	4
63	Inferring the Effects of Honokiol on the Notch Signaling Pathway in SW480 Colon Cancer Cells. Cancer Informatics, 2014, 13s5, CIN.S14060.	1.9	11
64	Metabolic network motifs can provide novel insights into evolution: The evolutionary origin of Eukaryotic organelles as a case study. Computational Biology and Chemistry, 2014, 53, 242-250.	2.3	4
65	Connecting the Dots: The Effects of Macromolecular Crowding on Cell Physiology. Biophysical Journal, 2014, 107, 2761-2766.	0.5	136
66	Singleâ€molecule enzymology Ã la Michaelisâ€"Menten. FEBS Journal, 2014, 281, 518-530.	4.7	56
67	Validity of the Michaelisâ€"Menten equation â€" steadyâ€state or reactant stationary assumption: that is the question. FEBS Journal, 2014, 281, 464-472.	4.7	122
68	The Circadian Clock in Oral Health and Diseases. Journal of Dental Research, 2014, 93, 27-35.	5.2	63
69	Unraveling intestinal stem cell behavior with models of crypt dynamics. Integrative Biology (United) Tj ETQq1 1 0.784314 rgBT /Overl	1.3	68
70	Competitive inhibition reaction mechanisms for the two-step model of protein aggregation. Biophysical Chemistry, 2014, 193-194, 9-19.	2.8	4
71	Protein Interactions and Transition Times that Influence the Pathogenesis of Protein Folding Diseases. Biophysical Journal, 2014, 106, 33a.	0.5	0
72	Unravelling the impact of obstacles in diffusion and kinetics of an enzyme catalysed reaction. Physical Chemistry Chemical Physics, 2014, 16, 4492-4503.	2.8	18

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73	A TWO-STEP KINETIC MODEL OF INSULIN AGGREGATION WITH A COMPETITIVE INHIBITOR. , 2014, , .		0
74	Abstract 357: A systems biology approach for rational molecular network inference. , 2014, , .		0
75	Abstract 20311: MYBPC3 Mutations Causative for Hypertrophic Cardiomyopathy Result in Locus-Dependent Alterations in Cellular Localization and Contractility. Circulation, 2014, 130, .	1.6	0
76	Network representations and methods for the analysis of chemical and biochemical pathways. Molecular BioSystems, 2013, 9, 2189.	2.9	20
77	IN20 FROM SINGLE CELL MOTILITY TO SIGNALLING AND METABOLIC INTEGRATION: HOW MATHEMATICAL AND PHYSICAL MODELS CAN HELP CONTROL METASTASES IN PERSONALIZED MEDICINE. Breast, 2013, 22, S24-S25.	2.2	0
78	Network motifs provide signatures that characterize metabolism. Molecular BioSystems, 2013, 9, 352.	2.9	28
79	Circadian rhythms regulate amelogenesis. Bone, 2013, 55, 158-165.	2.9	82
80	Designing nanoparticle treatment of autoimmunity with quantitative biology. Immunology and Cell Biology, 2013, 91, 333-334.	2.3	0
81	Follow-the-leader cell migration requires biased cellâ€“cell contact and local microenvironmental signals. Physical Biology, 2013, 10, 035003.	1.8	34
82	Integration of Steady-State and Temporal Gene Expression Data for the Inference of Gene Regulatory Networks. PLoS ONE, 2013, 8, e72103.	2.5	15
83	More than Skew: Asymmetric Wave Propagation in a Reaction-Diffusion-Convection System. Biomath, 2013, 2, .	0.7	0
84	Hedgehog-responsive mesenchymal clusters direct patterning and emergence of intestinal villi. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 15817-15822.	7.1	140
85	Computational modelling of cell chain migration reveals mechanisms that sustain follow-the-leader behaviour. Journal of the Royal Society Interface, 2012, 9, 1576-1588.	3.4	28
86	Unraveling the Complex Regulatory Relationships Between Metabolism and Signal Transduction in Cancer. Advances in Experimental Medicine and Biology, 2012, 736, 179-189.	1.6	8
87	Logic-based models in systems biology: a predictive and parameter-free network analysis method. Integrative Biology (United Kingdom), 2012, 4, 1323.	1.3	103
88	A Model of Threshold Behavior Reveals Rescue Mechanisms of Bystander Proteins in Conformational Diseases. Biophysical Journal, 2011, 100, 1864-1873.	0.5	9
89	A Graphical User Interface for a Method to Infer Kinetics and Network Architecture (MIKANA). PLoS ONE, 2011, 6, e27534.	2.5	6
90	Molecular and circadian controls of ameloblasts. European Journal of Oral Sciences, 2011, 119, 35-40.	1.5	42

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91	Macroscopic simulations of microtubule dynamics predict two steady-state processes governing array morphology. Computational Biology and Chemistry, 2011, 35, 269-281.	2.3	6
92	Expression of clock proteins in developing tooth. Gene Expression Patterns, 2011, 11, 202-206.	0.8	57
93	Effects of Protein Quality Control Machinery on Protein Homeostasis. , 2011, , 1-17.		0
94	Enzyme catalyzed reactions: From experiment to computational mechanism reconstruction. Computational Biology and Chemistry, 2010, 34, 11-18.	2.3	7
95	Stability of open pathways. Mathematical Biosciences, 2010, 228, 147-152.	1.9	13
96	Waves and patterning in developmental biology: vertebrate segmentation and feather bud formation as case studies. International Journal of Developmental Biology, 2009, 53, 783-794.	0.6	34
97	How can mathematics help us explore vertebrate segmentation?. HFSP Journal, 2009, 3, 1-5.	2.5	15
98	A Model of the Unfolded Protein Response: Pancreatic β-Cell as a Case Study. Cellular Physiology and Biochemistry, 2009, 23, 233-244.	1.6	22
99	Should digestion assays be used to estimate persistence of potential allergens in tests for safety of novel food proteins?. Clinical and Molecular Allergy, 2009, 7, 1.	1.8	35
100	Limit cycles in the presence of convection: a first-order analysis. Journal of Mathematical Chemistry, 2008, 43, 101-110.	1.5	0
101	Formation of monocarboxylic acids and polyols on a graphite surface. Surface Science, 2008, 602, 1053-1060.	1.9	4
102	The Intranuclear Environment. Methods in Molecular Biology, 2008, 463, 3-19.	0.9	12
103	Reactant Stationary Approximation in Enzyme Kinetics. Journal of Physical Chemistry A, 2008, 112, 8654-8658.	2.5	64
104	Introduction. Current Topics in Developmental Biology, 2008, 81, xvii-xxv.	2.2	3
105	Mathematical Models for Somite Formation. Current Topics in Developmental Biology, 2008, 81, 183-203.	2.2	38
106	Coordinated Action of N-CAM, N-cadherin, EphA4, and ephrinB2 Translates Genetic Prepatterns into Structure during Somitogenesis in Chick. Current Topics in Developmental Biology, 2008, 81, 205-247.	2.2	31
107	Modelling reaction kinetics inside cells. Essays in Biochemistry, 2008, 45, 41-56.	4.7	70
108	Limit cycles in the presence of convection: A traveling wave analysis. Physical Review E, 2007, 76, 036216.	2.1	8

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109	Can tissue surface tension drive somite formation?. Developmental Biology, 2007, 307, 248-257.	2.0	30
110	From segment to somite: Segmentation to epithelialization analyzed within quantitative frameworks. Developmental Dynamics, 2007, 236, 1392-1402.	1.8	31
111	A test for measuring the effects of enzyme inactivation. Biophysical Chemistry, 2007, 125, 269-274.	2.8	21
112	The effects of time delays in a phosphorylationâ€"dephosphorylation pathway. Biophysical Chemistry, 2007, 125, 286-297.	2.8	18
113	Reconstructing biochemical pathways from time course data. Proteomics, 2007, 7, 828-838.	2.2	40
114	Is the intrinsic disorder of proteins the cause of the scale-free architecture of proteinâ€"protein interaction networks?. Proteomics, 2007, 7, 961-964.	2.2	21
115	A Mesoscopic Simulation Approach for Modeling Intracellular Reactions. Journal of Statistical Physics, 2007, 128, 139-164.	1.2	13
116	Turing pattern outside of the Turing domain. Applied Mathematics Letters, 2007, 20, 959-963.	2.7	7
117	Multiscale Modeling in Biology. American Scientist, 2007, 95, 134.	0.1	70
118	Editorial: Unravelling the function and kinetics of biochemical networks. IET Systems Biology, 2006, 153, 139.	2.0	0
119	The mechanism distinguishability problem in biochemical kinetics: The single-enzyme, single-substrate reaction as a case study. Comptes Rendus - Biologies, 2006, 329, 51-61.	0.2	40
120	A clock and wavefront mechanism for somite formation. Developmental Biology, 2006, 293, 116-126.	2.0	114
121	A multiscale mathematical model of cancer, and its use in analyzing irradiation therapies. Theoretical Biology and Medical Modelling, 2006, 3, 7.	2.1	162
122	A systematic investigation of the rate laws valid in intracellular environments. Biophysical Chemistry, 2006, 124, 1-10.	2.8	102
123	Why substrate depletion has apparent first-order kinetics in enzymatic digestion. Computational Biology and Chemistry, 2006, 30, 209-214.	2.3	23
124	Unraveling the nature of the segmentation clock: Intrinsic disorder of clock proteins and their interaction map. Computational Biology and Chemistry, 2006, 30, 241-248.	2.3	12
125	A mathematical investigation of a Clock and Wavefront model for somitogenesis. Journal of Mathematical Biology, 2006, 52, 458-482.	1.9	40
126	How Reaction Kinetics with Time-Dependent Rate Coefficients Differs from Generalized Mass Action. ChemPhysChem, 2006, 7, 1422-1424.	2.1	19

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127	Use and abuse of the quasi-steady-state approximation. IET Systems Biology, 2006, 153, 187.	2.0	59
128	A mathematical formulation for the cell-cycle model in somitogenesis: analysis, parameter constraints and numerical solutions. Mathematical Medicine and Biology, 2004, 21, 85-113.	1.2	13
129	Reaction kinetics in intracellular environments with macromolecular crowding: simulations and rate laws. Progress in Biophysics and Molecular Biology, 2004, 85, 235-260.	2.9	323
130	New approaches to modelling and analysis of biochemical reactions, pathways and networks. Progress in Biophysics and Molecular Biology, 2004, 86, 1-4.	2.9	12
131	Mathematical and computational techniques to deduce complex biochemical reaction mechanisms. Progress in Biophysics and Molecular Biology, 2004, 86, 77-112.	2.9	137
132	Mechanism Equivalence in Enzymeâ€"Substrate Reactions: Distributed Differential Delay in Enzyme Kinetics. Journal of Mathematical Chemistry, 2004, 35, 253-264.	1.5	30
133	Parametric sensitivity in chemical systems by Arvind Varma, Massimo Morbidelli and Hua Wu, 1999. Cambridge series in chemical engineering, Cambridge University Press. Â£60.00/$90.00, ISBN:Â0-521-62171-2. Bulletin of Mathematical Biology, 2004, 66, 393-395.	1.9	0
134	Bulletin of mathematical biology?facts, figures and comparisons*1. Bulletin of Mathematical Biology, 2004, 66, 595-603.	1.9	0
135	Stochastic approaches for modelling in vivo reactions. Computational Biology and Chemistry, 2004, 28, 165-178.	2.3	273
136	The condition for pseudo-first-order kinetics in enzymatic reactions is independent of the initial enzyme concentration. Biophysical Chemistry, 2004, 107, 165-174.	2.8	41
137	Extracting Biochemical Reaction Kinetics from Time Series Data. Lecture Notes in Computer Science, 2004, , 329-336.	1.3	3
138	Formation of Vertebral Precursors: Past Models and Future Predictions. Journal of Theoretical Medicine, 2003, 5, 23-35.	0.5	14
139	Models for pattern formation in somitogenesis: a marriage of cellular and molecular biology. Comptes Rendus - Biologies, 2002, 325, 179-189.	0.2	24
140	Enzyme kinetics far from the standard quasi-steady-state and equilibrium approximations. Mathematical and Computer Modelling, 2002, 35, 137-144.	2.0	49
141	A fast method to estimate kinetic constants for enzyme inhibitors. , 2001, 49, 109-113.		11
142	Clock and induction model for somitogenesis. , 2000, 217, 415-420.		40
143	Time-dependent Closed Form Solutions for Fully Competitive Enzyme Reactions. Bulletin of Mathematical Biology, 2000, 62, 321-336.	1.9	41
144	Enzyme Kinetics at High Enzyme Concentration. Bulletin of Mathematical Biology, 2000, 62, 483-499.	1.9	149

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145	A Cell Cycle Model for Somitogenesis: Mathematical Formulation and Numerical Simulation. Journal of Theoretical Biology, 2000, 207, 305-316.	1.7	52
146	Enzyme kinetics of multiple alternative substrates. Journal of Mathematical Chemistry, 2000, 27, 155-170.	1.5	38
147	Enzymological Considerations for the Theoretical Description of the Quantitative Competitive Polymerase Chain Reaction (QC-PCR). Journal of Theoretical Biology, 1997, 184, 433-440.	1.7	65
148	Closed Form Solution for Time-dependent Enzyme Kinetics. Journal of Theoretical Biology, 1997, 187, 207-212.	1.7	224
149	Theoretical Description of the Polymerase Chain Reaction. Journal of Theoretical Biology, 1997, 188, 313-318.	1.7	52
150	Expression of sodium channels with different saxitoxin affinity during rat forebrain development. Developmental Brain Research, 1994, 81, 26-40.	1.7	8