Arup K Chakraborty

List of Publications by Year
in descending order

63 papers	8,524 citations	147801 31 h-index	133252 59 g-index
80 all docs	80 docs citations	80 times ranked	11626 citing authors

#	Article	IF	Citations
1	Coactivator condensation at super-enhancers links phase separation and gene control. Science, 2018, 361, .	12.6	1,687
2	A Phase Separation Model for Transcriptional Control. Cell, 2017, 169, 13-23.	28.9	1,341
3	Therapeutic efficacy of potent neutralizing HIV-1-specific monoclonal antibodies in SHIV-infected rhesus monkeys. Nature, 2013, 503, 224-228.	27.8	593
4	Digital Signaling and Hysteresis Characterize Ras Activation in Lymphoid Cells. Cell, 2009, 136, 337-351.	28.9	362
5	RNA-Mediated Feedback Control of Transcriptional Condensates. Cell, 2021, 184, 207-225.e24.	28.9	324
6	Insights into the initiation of TCR signaling. Nature Immunology, 2014, 15, 798-807.	14.5	307
7	Enhanced clearance of HIV-1â€"infected cells by broadly neutralizing antibodies against HIV-1 in vivo. Science, 2016, 352, 1001-1004.	12.6	302
8	Sustained antigen availability during germinal center initiation enhances antibody responses to vaccination. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, E6639-E6648.	7.1	286
9	Enhancer Features that Drive Formation of Transcriptional Condensates. Molecular Cell, 2019, 75, 549-561.e7.	9.7	284
10	Partitioning of cancer therapeutics in nuclear condensates. Science, 2020, 368, 1386-1392.	12.6	281
11	Magnitude and Kinetics of CD8+ T Cell Activation during Hyperacute HIV Infection Impact Viral Set Point. Immunity, 2015, 43, 591-604.	14.3	234
12	The Effects of Somatic Hypermutation on Neutralization and Binding in the PGT121 Family of Broadly Neutralizing HIV Antibodies. PLoS Pathogens, 2013, 9, e1003754.	4.7	175
13	Manipulating the Selection Forces during Affinity Maturation to Generate Cross-Reactive HIV Antibodies. Cell, 2015, 160, 785-797.	28.9	173
14	Paired quantitative and qualitative assessment of the replication-competent HIV-1 reservoir and comparison with integrated proviral DNA. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, E7908-E7916.	7.1	164
15	Coreceptor Scanning by the T Cell Receptor Provides a Mechanism for T Cell Tolerance. Cell, 2014, 159, 333-345.	28.9	155
16	The Balance between T Cell Receptor Signaling and Degradation at the Center of the Immunological Synapse Is Determined by Antigen Quality. Immunity, 2008, 29, 414-422.	14.3	126
17	Ras activation by SOS: Allosteric regulation by altered fluctuation dynamics. Science, 2014, 345, 50-54.	12.6	126
18	The Fitness Landscape of HIV-1 Gag: Advanced Modeling Approaches and Validation of Model Predictions by In Vitro Testing. PLoS Computational Biology, 2014, 10, e1003776.	3.2	125

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19	Continuous immunotypes describe human immune variation and predict diverse responses. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, E6097-E6106.	7.1	104
20	Fitness landscape of the human immunodeficiency virus envelope protein that is targeted by antibodies. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, E564-E573.	7.1	101
21	Evolving concepts of specificity in immune reactions. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 22373-22380.	7.1	92
22	CD45 functions as a signaling gatekeeper in T cells. Science Signaling, 2019, 12, .	3.6	81
23	Spin models inferred from patient-derived viral sequence data faithfully describe HIV fitness landscapes. Physical Review E, 2013, 88, 062705.	2.1	78
24	Theory, models and biology. ELife, 2015, 4, e07158.	6.0	73
25	Role of framework mutations and antibody flexibility in the evolution of broadly neutralizing antibodies. ELife, 2018, 7, .	6.0	72
26	Pairing computation with experimentation: a powerful coupling for understanding T cell signalling. Nature Reviews Immunology, 2010, 10, 59-71.	22.7	55
27	RNA in formation and regulation of transcriptional condensates. Rna, 2022, 28, 52-57.	3.5	55
28	Optimal immunization cocktails can promote induction of broadly neutralizing Abs against highly mutable pathogens. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, E7039-E7048.	7.1	53
29	The catalytic activity of the kinase ZAP-70 mediates basal signaling and negative feedback of the T cell receptor pathway. Science Signaling, 2015, 8, ra49.	3.6	50
30	Defining and Manipulating B Cell Immunodominance Hierarchies to Elicit Broadly Neutralizing Antibody Responses against Influenza Virus. Cell Systems, 2020, 11, 573-588.e9.	6.2	41
31	A Perspective on the Role of Computational Models in Immunology. Annual Review of Immunology, 2017, 35, 403-439.	21.8	40
32	How the T cell signaling network processes information to discriminate between self and agonist ligands. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 26020-26030.	7.1	39
33	Phosphorylation of a Tyrosine Residue on Zap70 by Lck and Its Subsequent Binding via an SH2 Domain May Be a Key Gatekeeper of T Cell Receptor Signaling <i>In Vivo</i>. Molecular and Cellular Biology, 2016, 36, 2396-2402.	2.3	38
34	Optimizing immunization protocols to elicit broadly neutralizing antibodies. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 20077-20087.	7.1	35
35	Statistical Mechanical Concepts in Immunology. Annual Review of Physical Chemistry, 2010, 61, 283-303.	10.8	34
36	Statistical Linkage Analysis of Substitutions in Patient-Derived Sequences of Genotype 1a Hepatitis C Virus Nonstructural Protein 3 Exposes Targets for Immunogen Design. Journal of Virology, 2014, 88, 7628-7644.	3.4	34

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37	Evolution of weak cooperative interactions for biological specificity. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, E11053-E11060.	7.1	34
38	Scaling laws describe memories of hostâ€"pathogen riposte in the HIV population. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 1965-1970.	7.1	32
39	Identification of drug resistance mutations in HIV from constraints on natural evolution. Physical Review E, 2016, 93, 022412.	2.1	31
40	Phase behavior of random copolymers in quenched random media. Journal of Chemical Physics, 1995, 103, 10751-10763.	3.0	27
41	Deconvolving mutational patterns of poliovirus outbreaks reveals its intrinsic fitness landscape. Nature Communications, 2020, 11, 377.	12.8	25
42	Predominance of positive epistasis among drug resistance-associated mutations in HIV-1 protease. PLoS Genetics, 2020, 16, e1009009.	3.5	25
43	Roadmap on biology in time varying environments. Physical Biology, 2021, 18, 041502.	1.8	23
44	Rational design of vaccine targets and strategies for HIV: a crossroad of statistical physics, biology, and medicine. Reports on Progress in Physics, 2017, 80, 032601.	20.1	20
45	Activation of Extracellular Signal-Regulated Kinase but Not of p38 Mitogen-Activated Protein Kinase Pathways in Lymphocytes Requires Allosteric Activation of SOS. Molecular and Cellular Biology, 2013, 33, 2470-2484.	2.3	19
46	The low spike density of HIV may have evolved because of the effects of T helper cell depletion on affinity maturation. PLoS Computational Biology, 2018, 14, e1006408.	3.2	18
47	Mechanisms underlying vaccination protocols that may optimally elicit broadly neutralizing antibodies against highly mutable pathogens. Physical Review E, 2021, 103, 052408.	2.1	15
48	Affinity Inequality among Serum Antibodies That Originate in Lymphoid Germinal Centers. PLoS ONE, 2015, 10, e0139222.	2.5	11
49	Modelling and in vitro testing of the HIV-1 Nef fitness landscape. Virus Evolution, 2019, 5, vez029.	4.9	11
50	Alternative ZAP70-p38 signals prime a classical p38 pathway through LAT and SOS to support regulatory T cell differentiation. Science Signaling, 2019, 12, .	3.6	11
51	Learning from HIV-1 to predict the immunogenicity of TÂcell epitopes in SARS-CoV-2. IScience, 2021, 24, 102311.	4.1	11
52	Adenovirus-vectored vaccine containing multidimensionally conserved parts of the HIV proteome is immunogenic in rhesus macaques. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	8
53	How nonuniform contact profiles of T cell receptors modulate thymic selection outcomes. Physical Review E, 2018, 97, 032413.	2.1	7
54	Design of immunogens to elicit broadly neutralizing antibodies against HIV targeting the CD4 binding site. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	6

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55	Multiscale affinity maturation simulations to elicit broadly neutralizing antibodies against HIV. PLoS Computational Biology, 2022, 18, e1009391.	3.2	6
56	The Influence of T Cell Development on Pathogen Specificity and Autoreactivity. Journal of Statistical Physics, 2012, 149, 203-219.	1.2	4
57	Statistical Physics of T-Cell Development and Pathogen Specificity. Annual Review of Condensed Matter Physics, 2013, 4, 339-360.	14.5	4
58	A simple model for how the risk of pandemics from different virus families depends on viral and human traits. Mathematical Biosciences, 2022, 343, 108732.	1.9	2
59	Understanding immunology: fun at an intersection of the physical, life, and clinical sciences. Physical Biology, 2014, 11, 053014.	1.8	0
60	Herman N. Eisen, M.D. (1918â€"2014). Journal of Immunology, 2015, 194, 2451-2452.	0.8	0
61	Scaffold Proteins Confer Diverse Regulatory Properties to Protein Kinase Cascades. FASEB Journal, 2007, 21, A264.	0.5	0
62	Importance of signal duration and the time scale dependence of signal integration in biochemical networks. FASEB Journal, 2008, 22, 616.2.	0.5	0
63	Inferring the intrinsic mutational fitness landscape of influenzalike evolving antigens from temporally ordered sequence data. Physical Review E, 2022, 105, 024401.	2.1	0