Use of Collateral Sensitivity Networks to Design Drug C Resistance Development

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Citation Report

#	Article	IF	CITATIONS
2	Strength of Selection Pressure Is an Important Parameter Contributing to the Complexity of Antibiotic Resistance Evolution. Molecular Biology and Evolution, 2014, 31, 2387-2401.	3.5	222
3	Strategies for Circumventing Bacterial Resistance Mechanisms. , 2014, , 1-29.		0
4	Prediction of antibiotic resistance by gene expression profiles. Nature Communications, 2014, 5, 5792.	5.8	220
5	Prediction of resistance development against drug combinations by collateral responses to component drugs. Science Translational Medicine, 2014, 6, 262ra156.	5.8	150
6	Targeting the Achilles Heel of Multidrug-Resistant Cancer by Exploiting the Fitness Cost of Resistance. Chemical Reviews, 2014, 114, 5753-5774.	23.0	172
7	Collateral damage. Nature Biotechnology, 2014, 32, 66-68.	9.4	21
8	Alternating antibiotic treatments constrain evolutionary paths to multidrug resistance. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 14494-14499.	3.3	215
9	Collective antibiotic resistance: mechanisms and implications. Current Opinion in Microbiology, 2014, 21, 28-34.	2.3	135
10	Genome-wide analysis captures the determinants of the antibiotic cross-resistance interaction network. Nature Communications, 2014, 5, 4352.	5.8	195
12	The Yin and Yang of Bacterial Resilience in the Human Gut Microbiota. Journal of Molecular Biology, 2014, 426, 3866-3876.	2.0	58
14	Temporal variation in antibiotic environments slows down resistance evolution in pathogenic <i>Pseudomonas aeruginosa</i> . Evolutionary Applications, 2015, 8, 945-955.	1.5	55
15	Quantifying the Determinants of Evolutionary Dynamics Leading to Drug Resistance. PLoS Biology, 2015, 13, e1002299.	2.6	105
16	Steering Evolution with Sequential Therapy to Prevent the Emergence of Bacterial Antibiotic Resistance. PLoS Computational Biology, 2015, 11, e1004493.	1.5	151
17	Antimicrobial interactions: mechanisms and implications for drug discovery and resistance evolution. Current Opinion in Microbiology, 2015, 27, 1-9.	2.3	195
18	Pseudomonas aeruginosa adaptation to human hosts. Nature Genetics, 2015, 47, 2-3.	9.4	15
19	Collateral Resistance and Sensitivity Modulate Evolution of High-Level Resistance to Drug Combination Treatment in Staphylococcus aureus. Molecular Biology and Evolution, 2015, 32, 1175-1185.	3.5	97
20	Suppression of antibiotic resistance acquisition by combined use of antibiotics. Journal of Bioscience and Bioengineering, 2015, 120, 467-469.	1.1	12
21	Using a Sequential Regimen to Eliminate Bacteria at Sublethal Antibiotic Dosages. PLoS Biology, 2015, 13, e1002104.	2.6	82

#	Article	IF	CITATIONS
22	Evolutionary consequences of drug resistance: shared principles across diverse targets and organisms. Nature Reviews Genetics, 2015, 16, 459-471.	7.7	201
23	Antimicrobial resistance in humans, livestock and the wider environment. Philosophical Transactions of the Royal Society B: Biological Sciences, 2015, 370, 20140083.	1.8	461
24	Fighting antibiotic resistance in the intensive care unit using antibiotics. Future Microbiology, 2015, 10, 391-406.	1.0	21
25	Collateral sensitivity of antibiotic-resistant microbes. Trends in Microbiology, 2015, 23, 401-407.	3.5	220
26	Mechanisms and therapeutic potential of inhibiting drug efflux transporters. Expert Opinion on Drug Metabolism and Toxicology, 2015, 11, 907-920.	1.5	21
27	Costs of antibiotic resistance – separating trait effects and selective effects. Evolutionary Applications, 2015, 8, 261-272.	1.5	39
28	Role of pleiotropy during adaptation of <scp>TEM</scp> â€1 <i>β</i> â€lactamase to two novel antibiotics. Evolutionary Applications, 2015, 8, 248-260.	1.5	30
29	Fighting microbial drug resistance: a primer on the role of evolutionary biology in public health. Evolutionary Applications, 2015, 8, 211-222.	1.5	34
30	Antibacterial Coatings: Challenges, Perspectives, and Opportunities. Trends in Biotechnology, 2015, 33, 637-652.	4.9	599
31	Synergistic, collaterally sensitive β-lactam combinations suppress resistance in MRSA. Nature Chemical Biology, 2015, 11, 855-861.	3.9	126
32	One cannot rule them all: Are bacterial toxins-antitoxins druggable?. FEMS Microbiology Reviews, 2015, 39, 522-540.	3.9	68
33	Miniaturized Plate Readers for Low-Cost, High-Throughput Phenotypic Screening. Journal of the Association for Laboratory Automation, 2015, 20, 51-55.	2.8	18
34	Precision or Personalized Medicine for Cancer Chemotherapy: Is there a Role for Herbal Medicine. Molecules, 2016, 21, 889.	1.7	20
35	Markov Networks of Collateral Resistance: National Antimicrobial Resistance Monitoring System Surveillance Results from Escherichia coli Isolates, 2004-2012. PLoS Computational Biology, 2016, 12, e1005160.	1.5	22
36	Mechanisms and consequences of bacterial resistance to antimicrobial peptides. Drug Resistance Updates, 2016, 26, 43-57.	6.5	491
37	Spatiotemporal microbial evolution on antibiotic landscapes. Science, 2016, 353, 1147-1151.	6.0	434
38	The risk of low concentrations of antibiotics in agriculture for resistance in human health care. FEMS Microbiology Letters, 2016, 363, fnw210.	0.7	36
39	The fungal resistome: a risk and an opportunity for the development of novel antifungal therapies. Future Medicinal Chemistry, 2016, 8, 1503-1520.	1.1	9

#	Article	IF	CITATIONS
40	Macrophage adaptation leads to parallel evolution of genetically diverse <i>Escherichia coli</i> small olony variants with increased fitness in vivo and antibiotic collateral sensitivity. Evolutionary Applications, 2016, 9, 994-1004.	1.5	21
41	Compounds that select against the tetracycline-resistance efflux pump. Nature Chemical Biology, 2016, 12, 902-904.	3.9	42
42	Identifying and Tackling Emergent Vulnerability in Drug-Resistant Mycobacteria. ACS Infectious Diseases, 2016, 2, 592-607.	1.8	34
43	The Resistome: A Comprehensive Database ofEscherichia coliResistance Phenotypes. ACS Synthetic Biology, 2016, 5, 1566-1577.	1.9	17
44	New recipe for targeting resistance. Nature Chemical Biology, 2016, 12, 891-892.	3.9	2
45	Immune-system-dependent anti-tumor activity of a plant-derived polyphenol rich fraction in a melanoma mouse model. Cell Death and Disease, 2016, 7, e2243-e2243.	2.7	47
46	Association between clinical antibiotic resistance and susceptibility of <i>Pseudomonas</i> in the cystic fibrosis lung. Evolution, Medicine and Public Health, 2016, 2016, 182-194.	1.1	34
47	The analysis of the antibiotic resistome offers new opportunities for therapeutic intervention. Future Medicinal Chemistry, 2016, 8, 1133-1151.	1.1	17
48	Guaraná (Paullinia cupana) seeds: Selective supercritical extraction of phenolic compounds. Food Chemistry, 2016, 212, 703-711.	4.2	58
49	A pivot mutation impedes reverse evolution across an adaptive landscape for drug resistance in Plasmodium vivax. Malaria Journal, 2016, 15, 40.	0.8	22
50	Antibiotic cross-resistance in the lab and resistance co-occurrence in the clinic: Discrepancies and implications in E. coli. Infection, Genetics and Evolution, 2016, 40, 155-161.	1.0	22
51	Exploiting Temporal Collateral Sensitivity in Tumor Clonal Evolution. Cell, 2016, 165, 234-246.	13.5	111
52	Modeling Tumor Clonal Evolution for Drug Combinations Design. Trends in Cancer, 2016, 2, 144-158.	3.8	43
53	Multidrug evolutionary strategies to reverse antibiotic resistance. Science, 2016, 351, aad3292.	6.0	517
54	Combination Effects of Antimicrobial Peptides. Antimicrobial Agents and Chemotherapy, 2016, 60, 1717-1724.	1.4	190
55	A Hybrid Drug Limits Resistance by Evading the Action of the Multiple Antibiotic Resistance Pathway. Molecular Biology and Evolution, 2016, 33, 492-500.	3.5	24
56	Endless resistance. Endless antibiotics?. MedChemComm, 2016, 7, 37-49.	3.5	39
57	Toward a Better Understanding of the Complexity of Cancer Drug Resistance. Annual Review of Pharmacology and Toxicology, 2016, 56, 85-102.	4.2	261

		CITATION REPORT		
#	Article		IF	CITATIONS
58	Combinatorial strategies for combating invasive fungal infections. Virulence, 2017, 8,	169-185.	1.8	146
59	Antibacterial activity of Limonium brasiliense (Baicuru) against multidrug-resistant bac statistical mixture design. Journal of Ethnopharmacology, 2017, 198, 313-323.	teria using a	2.0	15
60	Reconstruction of the metabolic network of Pseudomonas aeruginosa to interrogate v factor synthesis. Nature Communications, 2017, 8, 14631.	virulence	5.8	116
61	Exploiting Synthetic Lethality and Network Biology to Overcome EGFR Inhibitor Resista Cancer. Journal of Molecular Biology, 2017, 429, 1767-1786.	ance in Lung	2.0	14
62	Time-programmable drug dosing allows the manipulation, suppression and reversal of resistance in vitro. Nature Communications, 2017, 8, 15589.	antibiotic drug	5.8	71
63	Alternative Evolutionary Paths to Bacterial Antibiotic Resistance Cause Distinct Collate Molecular Biology and Evolution, 2017, 34, 2229-2244.	eral Effects.	3.5	133
64	Resistance to the Cyclotide Cycloviolacin O2 in Salmonella enterica Caused by Differer That Often Confer Cross-Resistance or Collateral Sensitivity to Other Antimicrobial Pep Antimicrobial Agents and Chemotherapy, 2017, 61, .	nt Mutations otides.	1.4	11
65	A New Natural Product Analog of Blasticidin S Reveals Cellular Uptake Facilitated by th Multidrug Transporter. Antimicrobial Agents and Chemotherapy, 2017, 61, .	e NorA	1.4	10
66	Prediction of Antibiotic Interactions Using Descriptors Derived from Molecular Structu of Medicinal Chemistry, 2017, 60, 3902-3912.	re. Journal	2.9	45
67	Future therapies targeted towards eliminating <i>Candida</i> biofilms and associated in Expert Review of Anti-Infective Therapy, 2017, 15, 299-318.	nfections.	2.0	21
68	Prediction of Cross-resistance and Collateral Sensitivity by Gene Expression profiles an Mutations. Scientific Reports, 2017, 7, 14009.	d Genomic	1.6	29
69	Do patents work? Thickets, trolls and antibiotic resistance. Canadian Journal of Econor 893-926.	nics, 2017, 50,	0.6	14
70	Reversing resistance: different routes and common themes across pathogens. Proceed Royal Society B: Biological Sciences, 2017, 284, 20171619.	lings of the	1.2	22
71	Antibiotic efficacy — context matters. Current Opinion in Microbiology, 2017, 39, 73	-80.	2.3	71
72	Evolutionary rescue of a parasite population by mutation rate evolution. Theoretical Po Biology, 2017, 117, 64-75.	opulation	0.5	3
73	Chemical genetics in drug discovery. Current Opinion in Systems Biology, 2017, 4, 35-	42.	1.3	26
74	Prediction of antibiotic resistance: time for a new preclinical paradigm?. Nature Review Microbiology, 2017, 15, 689-696.	'S	13.6	221
75	Associations among Antibiotic and Phage Resistance Phenotypes in Natural and Clinica coli Isolates. MBio, 2017, 8, .	al Escherichia	1.8	37

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76	Evolutionary Trajectories to Antibiotic Resistance. Annual Review of Microbiology, 2017, 71, 57	⁷ 9-596.	2.9	179
77	Collateral sensitivity networks reveal evolutionary instability and novel treatment strategies in mutated non-small cell lung cancer. Scientific Reports, 2017, 7, 1232.	ALK	1.6	79
78	Acceleration and suppression of resistance development by antibiotic combinations. BMC Gen 2017, 18, 328.	omics,	1.2	24
79	Employing the promiscuity of lantibiotic biosynthetic machineries to produce novel antimicrob FEMS Microbiology Reviews, 2017, 41, 5-18.	ials.	3.9	58
80	Expression Profiling of Antibiotic-Resistant Bacteria Obtained by Laboratory Evolution. Method Molecular Biology, 2017, 1520, 263-279.	s in	0.4	1
81	Strategies to avoid treatment-induced lineage crisis in advanced prostate cancer. Nature Revie Clinical Oncology, 2017, 14, 269-283.	ws	12.5	36
82	Optimization of therapy against Pseudomonas aeruginosa with ceftazidime and meropenem u chemostats as model for infections. FEMS Microbiology Letters, 2017, 364, .	sing	0.7	8
83	Fitness costs associated with the acquisition of antibiotic resistance. Essays in Biochemistry, 20 37-48.	017,61,	2.1	62
84	Backstabbing P-gp: Side-Chain Cleaved Ecdysteroid 2,3-Dioxolanes Hyper-Sensitize MDR Cance Doxorubicin without Efflux Inhibition. Molecules, 2017, 22, 199.	r Cells to	1.7	25
85	Epistasis and the Evolution of Antimicrobial Resistance. Frontiers in Microbiology, 2017, 8, 246		1.5	85
86	Adaptive Laboratory Evolution of Antibiotic Resistance Using Different Selection Regimes Lead Similar Phenotypes and Genotypes. Frontiers in Microbiology, 2017, 8, 816.	to	1.5	64
87	Time-Resolved Tracking of Mutations Reveals Diverse Allele Dynamics during Escherichia coli Antimicrobial Adaptive Evolution to Single Drugs and Drug Pairs. Frontiers in Microbiology, 201 893.	.7, 8,	1.5	9
88	Effect of antibiotics on bacterial populations: a multi-hierarchical selection process. F1000Rese 2017, 6, 51.	arch,	0.8	75
89	Vaccination can drive an increase in frequencies of antibiotic resistance among nonvaccine ser of <i>Streptococcus pneumoniae</i> . Proceedings of the National Academy of Sciences of the States of America, 2018, 115, 3102-3107.	otypes United	3.3	42
90	Use of antibiotic disks to evolve drug-resistant bacteria. Antonie Van Leeuwenhoek, 2018, 111	, 1719-1722.	0.7	3
91	Multicopy plasmids allow bacteria to escape from fitness trade-offs during evolutionary innova Nature Ecology and Evolution, 2018, 2, 873-881.	tion.	3.4	72
92	Toward prediction and control of antibiotic-resistance evolution. Current Opinion in Biotechno 2018, 54, 45-49.	logy,	3.3	56
93	MetaCherchant: analyzing genomic context of antibiotic resistance genes in gut microbiota. Bioinformatics, 2018, 34, 434-444.		1.8	31

#	Article	IF	CITATIONS
94	Drug-Driven Phenotypic Convergence Supports Rational Treatment Strategies of Chronic Infections. Cell, 2018, 172, 121-134.e14.	13.5	131
95	Chromosomal barcoding as a tool for multiplexed phenotypic characterization of laboratory evolved lineages. Scientific Reports, 2018, 8, 6961.	1.6	18
96	Predicting drug resistance evolution: insights from antimicrobial peptides and antibiotics. Proceedings of the Royal Society B: Biological Sciences, 2018, 285, 20172687.	1.2	139
97	Inferring the interaction structure of resistance to antimicrobials. Preventive Veterinary Medicine, 2018, 152, 81-88.	0.7	10
98	Key issues review: evolution on rugged adaptive landscapes. Reports on Progress in Physics, 2018, 81, 012602.	8.1	25
99	Managing the emergence of pathogen resistance via spatially targeted antimicrobial use. Evolutionary Applications, 2018, 11, 1822-1841.	1.5	3
100	Additivity of inhibitory effects in multidrug combinations. Nature Microbiology, 2018, 3, 1339-1345.	5.9	45
101	Competitive Fitness of Essential Gene Knockdowns Reveals a Broad-Spectrum Antibacterial Inhibitor of the Cell Division Protein FtsZ. Antimicrobial Agents and Chemotherapy, 2018, 62, .	1.4	28
102	Selection inversion: a probable tool against antibiotic resistance. Infection and Drug Resistance, 2018, Volume 11, 1903-1905.	1.1	11
103	Conserved collateral antibiotic susceptibility networks in diverse clinical strains of Escherichia coli. Nature Communications, 2018, 9, 3673.	5.8	76
104	Cellular hysteresis as a principle to maximize the efficacy of antibiotic therapy. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 9767-9772.	3.3	81
105	Antibiotic-Induced Genetic Variation: How It Arises and How It Can Be Prevented. Annual Review of Microbiology, 2018, 72, 209-230.	2.9	81
106	Pharmacodynamic considerations of collateral sensitivity in design of antibiotic treatment regimen. Drug Design, Development and Therapy, 2018, Volume 12, 2249-2257.	2.0	12
107	Comprehensive antibiotic-linked mutation assessment by resistance mutation sequencing (RM-seq). Genome Medicine, 2018, 10, 63.	3.6	26
108	Antibiotic-resistant bacteria show widespread collateral sensitivity to antimicrobial peptides. Nature Microbiology, 2018, 3, 718-731.	5.9	325
109	Ancistrolikokine I and further 5,8′-coupled naphthylisoquinoline alkaloids from the Congolese liana Ancistrocladus likoko and their cytotoxic activities against drug-sensitive and multidrug resistant human leukemia cells. Fìtoterapìâ, 2018, 129, 114-125.	1.1	20
110	In vivo and in vitro studies of Cry5B and nicotinic acetylcholine receptor agonist anthelmintics reveal a powerful and unique combination therapy against intestinal nematode parasites. PLoS Neglected Tropical Diseases, 2018, 12, e0006506.	1.3	23
111	Parallel Evolution of High-Level Aminoglycoside Resistance in Escherichia coli Under Low and High Mutation Supply Rates. Frontiers in Microbiology, 2018, 9, 427.	1.5	28

#	Article	IF	CITATIONS
112	Rapid evolution of generalized resistance mechanisms can constrain the efficacy of phage–antibiotic treatments. Evolutionary Applications, 2018, 11, 1630-1641.	1.5	32
113	Ecology dictates evolution? About the importance of genetic and ecological constraints in adaptation. Europhysics Letters, 2018, 122, 58002.	0.7	9
114	Taking advantage of drug resistance, a new approach in the war on cancer. Frontiers of Medicine, 2018, 12, 490-495.	1.5	31
115	Optimal Therapy Scheduling Based on a Pair of Collaterally Sensitive Drugs. Bulletin of Mathematical Biology, 2018, 80, 1776-1809.	0.9	36
116	Antibiotic combination efficacy (ACE) networks for a Pseudomonas aeruginosa model. PLoS Biology, 2018, 16, e2004356.	2.6	72
117	New pathogens, new tricks: emerging, drugâ€resistant fungal pathogens and future prospects for antifungal therapeutics. Annals of the New York Academy of Sciences, 2019, 1435, 57-78.	1.8	119
118	Design of high-order antibiotic combinations against M. tuberculosis by ranking and exclusion. Scientific Reports, 2019, 9, 11876.	1.6	24
119	Quinolones for sepsis. A protocol for a systematic review of randomised clinical trials with metaâ€analysis and trial sequential analysis. Acta Anaesthesiologica Scandinavica, 2019, 63, 1113-1123.	0.7	3
120	mSphere of Influence: Evolutionary Strategies To Sensitize Drug-Resistant Pathogens. MSphere, 2019, 4,	1.3	1
121	Two natural molecules preferentially inhibit azole-resistant Candida albicans with MDR1 hyperactivation. Chinese Journal of Natural Medicines, 2019, 17, 209-217.	0.7	3
122	Rapid microevolution of biofilm cells in response to antibiotics. Npj Biofilms and Microbiomes, 2019, 5, 34.	2.9	96
123	The mutational landscape of quinolone resistance in Escherichia coli. PLoS ONE, 2019, 14, e0224650.	1.1	25
124	Counter-Selection of Antimalarial Resistance Polymorphisms by Intermittent Preventive Treatment in Pregnancy. Journal of Infectious Diseases, 2019, 221, 293-303.	1.9	6
125	Pervasive and diverse collateral sensitivity profiles inform optimal strategies to limit antibiotic resistance. PLoS Biology, 2019, 17, e3000515.	2.6	92
126	Diffusion-driven enhancement of the antibiotic resistance selection window. Journal of the Royal Society Interface, 2019, 16, 20190363.	1.5	11
127	Overcoming Multidrug-Resistance in Bacteria with a Two-Step Process to Repurpose and Recombine Established Drugs. Analytical Chemistry, 2019, 91, 13562-13569.	3.2	7
128	A Large-Scale Whole-Genome Comparison Shows that Experimental Evolution in Response to Antibiotics Predicts Changes in Naturally Evolved Clinical Pseudomonas aeruginosa. Antimicrobial Agents and Chemotherapy, 2019, 63, .	1.4	31
129	Rationally designing antisense therapy to keep up with evolving bacterial resistance. PLoS ONE, 2019, 14, e0209894.	1.1	8

#	Article	IF	CITATIONS
130	Antibiotic collateral sensitivity is contingent on the repeatability of evolution. Nature Communications, 2019, 10, 334.	5.8	135
131	Selection and co-selection of antibiotic resistances among Escherichia coli by antibiotic use in primary care: An ecological analysis. PLoS ONE, 2019, 14, e0218134.	1.1	34
132	Limited Evolutionary Conservation of the Phenotypic Effects of Antibiotic Resistance Mutations. Molecular Biology and Evolution, 2019, 36, 1601-1611.	3.5	37
133	Five rules for resistance management in the antibiotic apocalypse, a road map for integrated microbial management. Evolutionary Applications, 2019, 12, 1079-1091.	1.5	74
134	Can Competition and Patent Policies Avert the Antibiotic Crisis?. Canadian Public Policy/ Analyse De Politiques, 2019, 45, 74-92.	0.8	1
135	Microbial evolutionary medicine: from theory to clinical practice. Lancet Infectious Diseases, The, 2019, 19, e273-e283.	4.6	11
136	Engineering Multidimensional Evolutionary Forces to Combat Cancer. Cancer Discovery, 2019, 9, 587-604.	7.7	13
137	Effects of a previously selected antibiotic resistance on mutations acquired during development of a second resistance in Escherichia coli. BMC Genomics, 2019, 20, 284.	1.2	30
138	Evolutionary ecology meets the antibiotic crisis. Evolution, Medicine and Public Health, 2019, 2019, 37-45.	1.1	43
139	Experimental Evolution as a Tool to Investigate Natural Processes and Molecular Functions. Trends in Microbiology, 2019, 27, 623-634.	3.5	32
140	OXA-48-Mediated Ceftazidime-Avibactam Resistance Is Associated with Evolutionary Trade-Offs. MSphere, 2019, 4, .	1.3	63
141	Estimation of multidrug resistance variability in the National Antimicrobial Monitoring System. Preventive Veterinary Medicine, 2019, 167, 137-145.	0.7	4
142	Collateral sensitivity constrains resistance evolution of the CTX-M-15 β-lactamase. Nature Communications, 2019, 10, 618.	5.8	64
143	Selection and Transmission of Antibiotic-Resistant Bacteria. , 2019, , 117-137.		2
144	Assessment of Phenotype Microarray plates for rapid and high-throughput analysis of collateral sensitivity networks. PLoS ONE, 2019, 14, e0219879.	1.1	5
145	Chemical-genetic profiling reveals limited cross-resistance between antimicrobial peptides with different modes of action. Nature Communications, 2019, 10, 5731.	5.8	29
146	Dimeric glycosylated flavan-3-ol and antimicrobial <i>inÂvitro</i> evaluation of <i>Trichilia catigua</i> extracts. Natural Product Research, 2021, 35, 3293-3300.	1.0	1
147	Patterns of crossâ€resistance and collateral sensitivity between clinical antibiotics and natural antimicrobials. Evolutionary Applications, 2019, 12, 878-887.	1.5	20

#	Article	IF	CITATIONS
148	Integrated Experimental and Computational Analyses Reveal Differential Metabolic Functionality in Antibiotic-Resistant Pseudomonas aeruginosa. Cell Systems, 2019, 8, 3-14.e3.	2.9	56
149	Bacterial persistence promotes the evolution of antibiotic resistance by increasing survival and mutation rates. ISME Journal, 2019, 13, 1239-1251.	4.4	223
150	Real time monitoring of <scp><i>Aeromonas salmonicida</i></scp> evolution in response to successive antibiotic therapies in a commercial fish farm. Environmental Microbiology, 2019, 21, 1113-1123.	1.8	16
151	Characterization of Two New Multidrug-Resistant Strains of Mycobacterium smegmatis: Tools for Routine In Vitro Screening of Novel Anti-Mycobacterial Agents. Antibiotics, 2019, 8, 4.	1.5	15
152	Selection and Transmission of Antibiotic-Resistant Bacteria. Microbiology Spectrum, 2017, 5, .	1.2	55
153	<i>Burkholderia multivorans</i> Exhibits Antibiotic Collateral Sensitivity. Microbial Drug Resistance, 2020, 26, 1-8.	0.9	7
154	Using Selection by Nonantibiotic Stressors to Sensitize Bacteria to Antibiotics. Molecular Biology and Evolution, 2020, 37, 1394-1406.	3.5	16
155	Chemical strategies to overcome resistance against targeted anticancer therapeutics. Nature Chemical Biology, 2020, 16, 817-825.	3.9	41
156	Phage–antibiotic combinations: a promising approach to constrain resistance evolution in bacteria. Annals of the New York Academy of Sciences, 2021, 1496, 23-34.	1.8	19
157	Rapid and robust evolution of collateral sensitivity in <i>Pseudomonas aeruginosa</i> antibiotic-resistant mutants. Science Advances, 2020, 6, eaba5493.	4.7	33
158	Systematic Investigation of Resistance Evolution to Common Antibiotics Reveals Conserved Collateral Responses across Common Human Pathogens. Antimicrobial Agents and Chemotherapy, 2020, 65, .	1.4	9
159	Phage Therapy in the Resistance Era: Where Do We Stand and Where Are We Going?. Clinical Therapeutics, 2020, 42, 1659-1680.	1.1	118
160	Antibiotic Resistance: Moving From Individual Health Norms to Social Norms in One Health and Global Health. Frontiers in Microbiology, 2020, 11, 1914.	1.5	64
161	Evolutionary Approaches to Combat Antibiotic Resistance: Opportunities and Challenges for Precision Medicine. Frontiers in Immunology, 2020, 11, 1938.	2.2	35
162	Aggregated Amphiphilic Antimicrobial Peptides Embedded in Bacterial Membranes. ACS Applied Materials & Interfaces, 2020, 12, 44420-44432.	4.0	35
163	Ubiquitous selection for mecA in community-associated MRSA across diverse chemical environments. Nature Communications, 2020, 11, 6038.	5.8	14
164	Extreme Antagonism Arising from Gene-Environment Interactions. Biophysical Journal, 2020, 119, 2074-2086.	0.2	6
165	A survey of within-host and between-hosts modelling for antibiotic resistance. BioSystems, 2020, 196, 104182.	0.9	8

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166	Genetic dominance governs the evolution and spread of mobile genetic elements in bacteria. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 15755-15762.	3.3	41
167	Highly parallel lab evolution reveals that epistasis can curb the evolution of antibiotic resistance. Nature Communications, 2020, 11, 3105.	5.8	44
168	Larger bacterial populations evolve heavier fitness trade-offs and undergo greater ecological specialization. Heredity, 2020, 124, 726-736.	1.2	14
169	Suppression of antibiotic resistance evolution by single-gene deletion. Scientific Reports, 2020, 10, 4178.	1.6	15
170	Evolution of antibiotic crossâ€resistance and collateral sensitivity in <i>Staphylococcus epidermidis</i> using the mutant prevention concentration and the mutant selection window. Evolutionary Applications, 2020, 13, 808-823.	1.5	16
171	Associations between sensitivity to antibiotics, disinfectants and heavy metals in natural, clinical and laboratory isolates of <scp><i>Escherichia coli</i></scp> . Environmental Microbiology, 2020, 22, 2664-2679.	1.8	9
172	Antibiotic interactions shape short-term evolution of resistance in E. faecalis. PLoS Pathogens, 2020, 16, e1008278.	2.1	26
173	Identifying States of Collateral Sensitivity during the Evolution of Therapeutic Resistance in Ewing's Sarcoma. IScience, 2020, 23, 101293.	1.9	24
174	Effect of Short-Term Antimicrobial Therapy on the Tolerance and Antibiotic Resistance of Multidrug-Resistant Staphylococcus capitis . Infection and Drug Resistance, 2020, Volume 13, 2017-2026.	1.1	1
175	How antibiotics work together: molecular mechanisms behind combination therapy. Current Opinion in Microbiology, 2020, 57, 31-40.	2.3	45
176	Antibiotic resistance: turning evolutionary principles into clinical reality. FEMS Microbiology Reviews, 2020, 44, 171-188.	3.9	154
177	Molecular mechanisms of collateral sensitivity to the antibiotic nitrofurantoin. PLoS Biology, 2020, 18, e3000612.	2.6	53
178	Reciprocal antibiotic collateral sensitivity in Burkholderia multivorans. International Journal of Antimicrobial Agents, 2020, 56, 105994.	1.1	4
179	Antimicrobial peptides: Application informed by evolution. Science, 2020, 368, .	6.0	553
180	A Strategic Target Rescues Trimethoprim Sensitivity in Escherichia coli. IScience, 2020, 23, 100986.	1.9	15
181	Exploiting evolutionary steering to induce collateral drug sensitivity in cancer. Nature Communications, 2020, 11, 1923.	5.8	79
182	Revealing antibiotic cross-resistance patterns in hospitalized patients through Bayesian network modelling. Journal of Antimicrobial Chemotherapy, 2021, 76, 239-248.	1.3	19
183	Evolution in alternating environments with tunable interlandscape correlations. Evolution; International Journal of Organic Evolution, 2021, 75, 10-24.	1.1	11

ARTICLE IF CITATIONS # The Genomic Basis of Rapid Adaptation to Antibiotic Combination Therapy in <i>Pseudomonas 3.5 21 184 aeruginosa </i>. Molecular Biology and Evolution, 2021, 38, 449-464. Collateral sensitivity associated with antibiotic resistance plasmids. ELife, 2021, 10, . 2.8 Compatibility of Evolutionary Responses to Constituent Antibiotics Drive Resistance Evolution to 187 3.518 Drug Pairs. Molecular Biology and Evolution, 2021, 38, 2057-2069. Comparing treatment strategies to reduce antibiotic resistance in an in vitro epidemiological setting. 188 Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, . Moving From Pointâ€Based Analysis to Systemsâ€Based Modeling: Integration of Knowledge to Address Antimicrobial Resistance Against MDR Bacteria. Clinical Pharmacology and Therapeutics, 2021, 110, 191 2.3 13 1196-1206. Resistance to nitrofurantoin is an indicator of extensive drug-resistant (XDR) Enterobacteriaceae. Journal of Medical Microbiology, 2021, 70, . Roadmap on biology in time varying environments. Physical Biology, 2021, 18, 041502. 194 0.8 23 Convergent phenotypic evolution towards fosfomycin collateral sensitivity of 2.0 19 <i>Pseudomonas aeruginosa</i> antibioticâ€ŕesistant mutants. Micróbial Biotechnology, 2022, 15, 613-629. Collateral Sensitivity to Î²-Lactam Drugs in Drug-Resistant Tuberculosis Is Driven by the Transcriptional 196 1.3 2 Wiring of Blal Operón Genes. MSphere, 2021, 6, e0024521. An in vitro model of tumor heterogeneity resolves genetic, epigenetic, and stochastic sources of cell 2.6 state variability. PLoS Biology, 2021, 19, e3000797 Re-Envisioning Anti-Apicomplexan Parasite Drug Discovery Approaches. Frontiers in Cellular and 198 4 1.8 Infection Microbiology, 2021, 11, 691121. Price equation captures the role of drug interactions and collateral effects in the evolution of 199 2.8 multidrug resistance. ELife, 2021, 10, . Laboratory evolution of Mycobacterium on agar plates for analysis of resistance acquisition and 200 1.6 7 drug sensitivity profiles. Scientific Reports, 2021, 11, 15136. To give or not to give antibiotics is not the only question. Lancet Infectious Diseases, The, 2021, 21, 4.6 14 e191-e201. High potency of sequential therapy with only \hat{l}^2 -lactam antibiotics. ELife, 2021, 10, . 203 29 2.8 Evolutionary Dynamics of Treatment-Induced Resistance in Cancer Informs Understanding of Rapid 204 1.1 Evolution in Natural Systems. Frontiers in Ecology and Evolution, 2021, 9, . Design principles of collateral sensitivity-based dosing strategies. Nature Communications, 2021, 12, 206 5.8 23 569Ī. Finding the right sequence of drugs. ELife, 2021, 10, . 2.8

#	Article	IF	CITATIONS
208	Identification of antibiotic pairs that evade concurrent resistance via a retrospective analysis of antimicrobial susceptibility test results. Lancet Microbe, The, 2021, 2, e545-e554.	3.4	26
209	Mechanisms and therapeutic potential of collateral sensitivity to antibiotics. PLoS Pathogens, 2021, 17, e1009172.	2.1	28
210	Genomic evolution of antibiotic resistance is contingent on genetic background following a long-term experiment with <i>Escherichia coli</i> . Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	39
211	β-Lactams against the Fortress of the Gram-Positive <i>Staphylococcus aureus</i> Bacterium. Chemical Reviews, 2021, 121, 3412-3463.	23.0	52
212	Mechanisms of ciprofloxacin resistance in Pseudomonas aeruginosa: new approaches to an old problem. Journal of Medical Microbiology, 2019, 68, 1-10.	0.7	137
228	Sequence-Specific Targeting of Bacterial Resistance Genes Increases Antibiotic Efficacy. PLoS Biology, 2016, 14, e1002552.	2.6	67
229	History of antibiotic adaptation influences microbial evolutionary dynamics during subsequent treatment. PLoS Biology, 2017, 15, e2001586.	2.6	90
230	Molecular Mechanisms for Drug Hypersensitivity Induced by the Malaria Parasite's Chloroquine Resistance Transporter. PLoS Pathogens, 2016, 12, e1005725.	2.1	29
231	Multidrug-resistant Escherichia coli and Salmonella spp. isolated from pigeons. Veterinary World, 2020, 13, 2156-2165.	0.7	10
232	How to Fight Back Against Antibiotic Resistance. American Scientist, 2014, 102, 42.	0.1	51
233	Comment on 'The distribution of antibiotic use and its association with antibiotic resistance'. ELife, 2019, 8, .	2.8	7
234	Evolutionary pathways to antibiotic resistance are dependent upon environmental structure and bacterial lifestyle. ELife, 2019, 8, .	2.8	115
235	Evolutionary stability of collateral sensitivity to antibiotics in the model pathogen Pseudomonas aeruginosa. ELife, 2019, 8, .	2.8	59
236	Delayed antibiotic exposure induces population collapse in enterococcal communities with drug-resistant subpopulations. ELife, 2020, 9, .	2.8	17
238	Analysing the fitness cost of antibiotic resistance to identify targets for combination antimicrobials. Nature Microbiology, 2021, 6, 1410-1423.	5.9	16
240	Allogenous Selection of Mutational Collateral Resistance: Old Drugs Select for New Resistance Within Antibiotic Families. Frontiers in Microbiology, 2021, 12, 757833.	1.5	15
245	Strategies for Circumventing Bacterial Resistance Mechanisms. , 2017, , 231-261.		0
259	Talinum paniculatum: a plant with antifungal potential mitigates fluconazole-induced oxidative damage-mediated growth inhibition of Candida albicans. Revista Colombiana De Ciencias QuÃmico Farmaçéuticas, 2020, 49	0.3	1

ARTICLE IF CITATIONS OUP accepted manuscript. JAC-Antimicrobial Resistance, 2021, 3, dlab175. 0.9 3 261 Herding an evolving biological population with quantum control tools. Nature Physics, 2021, 17, 17-19. 6.5 Multiple Novel Traits without Immediate Benefits Originate in Bacteria Evolving on Single Antibiotics. 270 3.5 5 Molecular Biology and Evolution, 2022, 39, . Collateral Sensitivity Interactions between Antibiotics Depend on Local Abiotic Conditions. MSystems, 271 2021, 6, e0105521. Mutations in respiratory complex I promote antibiotic persistence through alterations in 273 5.8 21 intracellular acidity and protein synthesis. Nature Communications, 2022, 13, 546. Bugs on Drugs: A Drosophila melanogaster Gut Model to Study In Vivo Antibiotic Tolerance of E. coli. 274 1.6 Microorganisms, 2022, 10, 119. Rapid Decline of Ceftazidime Resistance in Antibiotic-Free and Sublethal Environments Is Contingent 276 3.5 16 on Genetic Background. Molecular Biology and Evolution, 2022, 39, . Rapid expansion and extinction of antibiotic resistance mutations during treatment of acute bacterial 977 5.8 respiratory infections. Nature Communications, 2022, 13, 1231. Collateral responses to classical cytotoxic chemotherapies are heterogeneous and sensitivities are 278 2 1.6 sparse. Scientific Reports, 2022, 12, 5453. The physiology and genetics of bacterial responses to antibiotic combinations. Nature Reviews 279 13.6 54 Microbiology, 2022, 20, 478-490. Genomic heterogeneity underlies multidrug resistance in Pseudomonas aeruginosa: A population-level 280 1.1 13 analysis beyond susceptibility testing. PLoS ONE, 2022, 17, e0265129. A tunable multifunctional hydrogel with balanced adhesion, toughness and self-healing ability prepared by photopolymerization under green LED irradiation for wound dressing. European Polymer Journal, 2022, 168, 111119. 2.6 Mutational background influences<i>P. aeruginosa</i>ciprofloxacin resistance evolution but 283 preserves collateral sensitivity robustness. Proceedings of the National Academy of Sciences of the 3.3 18 United States of America, 2022, 119, e2109370119. Machine learning to design antimicrobial combination therapies: Promises and pitfalls. Drug Discovery Today, 2022, 27, 1639-1651. 3.2 Revisiting Antibiotic Resistance: Mechanistic Foundations to Evolutionary Outlook. Antibiotics, 2022, 287 1.5 26 11, 40. The population genetics of collateral resistance and sensitivity. ELife, 2021, 10, . 14 The chemotherapeutic drug methotrexate selects for antibiotic resistance. EBioMedicine, 2021, 74, 291 9 2.7 103742. Down-regulation of ABCB1 by collateral sensitivity drugs reverses multidrug resistance and 293 up-regulates enolase I. Journal of Biochemistry, 2022, 172, 37-48.

#	Article	IF	CITATIONS
294	Allele-specific collateral and fitness effects determine the dynamics of fluoroquinolone resistance evolution. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, e2121768119.	3.3	9
295	The EnvZ/OmpR Two-Component System Regulates the Antimicrobial Activity of TAT-RasGAP ₃₁₇₋₃₂₆ and the Collateral Sensitivity to Other Antibacterial Agents. Microbiology Spectrum, 2022, 10, e0200921.	1.2	2
296	Microbial Interspecies Interactions and Their Impact on the Emergence and Spread of Antimicrobial Resistance. Annual Review of Microbiology, 2022, 76, 179-192.	2.9	7
300	Evolutionary Instability of Collateral Susceptibility Networks in Ciprofloxacin-Resistant Clinical Escherichia coli Strains. MBio, 2022, 13, .	1.8	3
301	Antimicrobial Peptide Combination Can Hinder Resistance Evolution. Microbiology Spectrum, 2022, 10, .	1.2	25
302	Tracking down resistances: a co-design approach for a biomedical educational program on antibiotic resistance. Science Activities, 2021, 58, 52-64.	0.4	1
303	A flux-based machine learning model to simulate the impact of pathogen metabolic heterogeneity on drug interactions. , 2022, 1, .		6
305	Development of Resistance to Eravacycline by Klebsiella pneumoniae and Collateral Sensitivity-Guided Design of Combination Therapies. Microbiology Spectrum, 2022, 10, .	1.2	5
306	Unblinding the watchmaker: cancer treatment and drug design in the face of evolutionary pressure. Expert Opinion on Drug Discovery, 2022, 17, 1081-1094.	2.5	1
307	Evolutionary History and Strength of Selection Determine the Rate of Antibiotic Resistance Adaptation. Molecular Biology and Evolution, 2022, 39, .	3.5	9
309	Drug Combinations to Prevent Antimicrobial Resistance: Various Correlations and Laws, and Their Verifications, Thus Proposing Some Principles and a Preliminary Scheme. Antibiotics, 2022, 11, 1279.	1.5	0
310	Environmental complexity is more important than mutation in driving the evolution of latent novel traits in E. coli. Nature Communications, 2022, 13, .	5.8	3
313	Rapid Phenotypic Convergence towards Collateral Sensitivity in Clinical Isolates of Pseudomonas aeruginosa Presenting Different Genomic Backgrounds. Microbiology Spectrum, 2023, 11, .	1.2	7
314	Analysis of the evolution of resistance to multiple antibiotics enables prediction of the Escherichia coli phenotype-based fitness landscape. PLoS Biology, 2022, 20, e3001920.	2.6	7
315	Clonal transcriptomics identifies mechanisms of chemoresistance and empowers rational design of combination therapies. ELife, 0, 11, .	2.8	4
316	Antibiotic Cycling Affects Resistance Evolution Independently of Collateral Sensitivity. Molecular Biology and Evolution, 2022, 39, .	3.5	4
318	Comparison of bacterial suppression by phage cocktails, dualâ€receptor generalists, and coevolutionarily trained phages. Evolutionary Applications, 2023, 16, 152-162.	1.5	5
319	Heterogeneous Distribution of Proton Motive Force in Nonheritable Antibiotic Resistance. MBio, 0, , .	1.8	1

#	Article	IF	CITATIONS
320	Sequential antibiotic therapy in the laboratory and in the patient. Journal of the Royal Society Interface, 2023, 20, .	1.5	10
321	Resistance-resistant antibacterial treatment strategies. , 0, 2, .		4
322	Fast drug rotation reduces bacterial resistance evolution in a microcosm experiment. Journal of Evolutionary Biology, 2023, 36, 641-649.	0.8	0
323	Antimicrobial peptides as promising antibiotic adjuvants to combat drug-resistant pathogens. Critical Reviews in Microbiology, 0, , 1-18.	2.7	7
324	The evolution of antibiotic resistance is associated with collateral drug phenotypes in Mycobacterium tuberculosis. Nature Communications, 2023, 14, .	5.8	12
325	Collateral sensitivity between tetracyclines and aminoglycosides constrains resistance evolution in carbapenem-resistant Klebsiella pneumoniae. Drug Resistance Updates, 2023, 68, 100961.	6.5	3
326	Tackling antibiotic resistance by inducing transient and robust collateral sensitivity. Nature Communications, 2023, 14, .	5.8	10
327	Collateral Sensitivity to Fosfomycin of Tobramycin-Resistant Mutants of Pseudomonas aeruginosa Is Contingent on Bacterial Genomic Background. International Journal of Molecular Sciences, 2023, 24, 6892.	1.8	1
328	Collateral sensitivity profiling in drug-resistant Escherichia coli identifies natural products suppressing cephalosporin resistance. Nature Communications, 2023, 14, .	5.8	5
330	Translating eco-evolutionary biology into therapy to tackle antibiotic resistance. Nature Reviews Microbiology, 2023, 21, 671-685.	13.6	12