Philip S Stewart

List of Publications by Year
in descending order

176 papers	38,869 citations	8181 76 h-index	4645 170 g-index
179 all docs	179 docs citations	179 times ranked	30034 citing authors

#	Article	IF	Citations
1	Bacterial Biofilms: A Common Cause of Persistent Infections. Science, 1999, 284, 1318-1322.	12.6	10,329
2	Antibiotic resistance of bacteria in biofilms. Lancet, The, 2001, 358, 135-138.	13.7	3,809
3	Physiological heterogeneity in biofilms. Nature Reviews Microbiology, 2008, 6, 199-210.	28.6	1,860
4	Survival strategies of infectious biofilms. Trends in Microbiology, 2005, 13, 34-40.	7.7	1,542
5	Biofilms in chronic wounds. Wound Repair and Regeneration, 2008, 16, 37-44.	3.0	1,226
6	Mechanisms of antibiotic resistance in bacterial biofilms. International Journal of Medical Microbiology, 2002, 292, 107-113.	3.6	1,094
7	A genetic basis for Pseudomonas aeruginosa biofilm antibiotic resistance. Nature, 2003, 426, 306-310.	27.8	1,036
8	Diffusion in Biofilms. Journal of Bacteriology, 2003, 185, 1485-1491.	2.2	964
9	Contributions of Antibiotic Penetration, Oxygen Limitation, and Low Metabolic Activity to Tolerance of <i>Pseudomonas aeruginosa</i> Biofilms to Ciprofloxacin and Tobramycin. Antimicrobial Agents and Chemotherapy, 2003, 47, 317-323.	3.2	839
10	Role of Antibiotic Penetration Limitation in <i>Klebsiella pneumoniae</i> Biofilm Resistance to Ampicillin and Ciprofloxacin. Antimicrobial Agents and Chemotherapy, 2000, 44, 1818-1824.	3.2	811
11	Spatial Physiological Heterogeneity in <i>Pseudomonas aeruginosa</i> Biofilm Is Determined by Oxygen Availability. Applied and Environmental Microbiology, 1998, 64, 4035-4039.	3.1	448
12	Oxygen Limitation Contributes to Antibiotic Tolerance of Pseudomonas aeruginosa in Biofilms. Antimicrobial Agents and Chemotherapy, 2004, 48, 2659-2664.	3.2	407
13	Quorum sensing in Pseudomonas aeruginosa controls expression of catalase and superoxide dismutase genes and mediates biofilm susceptibility to hydrogen peroxide. Molecular Microbiology, 1999, 34, 1082-1093.	2.5	379
14	Biofilm maturity studies indicate sharp debridement opens a time-dependent therapeutic window. Journal of Wound Care, 2010, 19, 320-328.	1.2	346
15	Stratified Growth in Pseudomonas aeruginosa Biofilms. Applied and Environmental Microbiology, 2004, 70, 6188-6196.	3.1	322
16	Antimicrobial Tolerance in Biofilms. Microbiology Spectrum, 2015, 3, .	3.0	317
17	Biocides in Hydraulic Fracturing Fluids: A Critical Review of Their Usage, Mobility, Degradation, and Toxicity. Environmental Science & Technology, 2015, 49, 16-32.	10.0	317
18	Role of Nutrient Limitation and Stationary-Phase Existence in Klebsiella pneumoniae Biofilm Resistance to Ampicillin and Ciprofloxacin. Antimicrobial Agents and Chemotherapy, 2003, 47, 1251-1256.	3.2	299

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19	Biofilms and Inflammation in Chronic Wounds. Advances in Wound Care, 2013, 2, 389-399.	5.1	296
20	Spatial Patterns of DNA Replication, Protein Synthesis, and Oxygen Concentration within Bacterial Biofilms Reveal Diverse Physiological States. Journal of Bacteriology, 2007, 189, 4223-4233.	2.2	278
21	Biofilm resistance to antimicrobial agents. Microbiology (United Kingdom), 2000, 146, 547-549.	1.8	275
22	A microtiter-plate screening method for biofilm disinfection and removal. Journal of Microbiological Methods, 2003, 54, 269-276.	1.6	270
23	A review of experimental measurements of effective diffusive permeabilities and effective diffusion coefficients in biofilms. Biotechnology and Bioengineering, 1998, 59, 261-272.	3.3	264
24	Hypothesis for the Role of Nutrient Starvation in Biofilm Detachment. Applied and Environmental Microbiology, 2004, 70, 7418-7425.	3.1	244
25	Biofilm penetration and disinfection efficacy of alkaline hypochlorite and chlorosulfamates. Journal of Applied Microbiology, 2001, 91, 525-532.	3.1	235
26	Biofilm removal caused by chemical treatments. Water Research, 2000, 34, 4229-4233.	11.3	231
27	Heterogeneity in Pseudomonas aeruginosa Biofilms Includes Expression of Ribosome Hibernation Factors in the Antibiotic-Tolerant Subpopulation and Hypoxia-Induced Stress Response in the Metabolically Active Population. Journal of Bacteriology, 2012, 194, 2062-2073.	2.2	219
28	Protective Role of Catalase in <i>Pseudomonas aeruginosa</i> Biofilm Resistance to Hydrogen Peroxide. Applied and Environmental Microbiology, 1999, 65, 4594-4600.	3.1	218
29	Delayed wound healing in diabetic (db/db) mice with Pseudomonas aeruginosa biofilm challenge: a model for the study of chronic wounds. Wound Repair and Regeneration, 2010, 18, 467-477.	3.0	206
30	A method for growing a biofilm under low shear at the airâ€"liquid interface using the drip flow biofilm reactor. Nature Protocols, 2009, 4, 783-788.	12.0	189
31	Anti-biofilm properties of chitosan-coated surfaces. Journal of Biomaterials Science, Polymer Edition, 2008, 19, 1035-1046.	3.5	182
32	Biofilm-control strategies based on enzymic disruption of the extracellular polymeric substance matrix â€" a modelling study. Microbiology (United Kingdom), 2005, 151, 3817-3832.	1.8	175
33	Penetration of Rifampin through Staphylococcus epidermidis Biofilms. Antimicrobial Agents and Chemotherapy, 2002, 46, 900-903.	3.2	174
34	Comparison of the Antimicrobial Effects of Chlorine, Silver Ion, and Tobramycin on Biofilm. Antimicrobial Agents and Chemotherapy, 2008, 52, 1446-1453.	3.2	174
35	Daptomycin Rapidly Penetrates a <i>Staphylococcus epidermidis</i> Biofilm. Antimicrobial Agents and Chemotherapy, 2009, 53, 3505-3507.	3.2	164
36	Chlorine Penetration into Artificial Biofilm Is Limited by a Reactionâ˘'Diffusion Interaction. Environmental Science & Technology, 1996, 30, 2078-2083.	10.0	161

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37	Effect of Catalase on Hydrogen Peroxide Penetration into Pseudomonas aeruginosa Biofilms. Applied and Environmental Microbiology, 2000, 66, 836-838.	3.1	161
38	Reduced susceptibility of thin Pseudomonas aeruginosa biofilms to hydrogen peroxide and monochloramine. Journal of Applied Microbiology, 2001, 88, 22-30.	3.1	160
39	Rapid Diffusion of Fluorescent Tracers into Staphylococcus epidermidis Biofilms Visualized by Time Lapse Microscopy. Antimicrobial Agents and Chemotherapy, 2005, 49, 728-732.	3.2	159
40	Battling Biofilms. Scientific American, 2001, 285, 74-81.	1.0	158
41	Spatial Variations in Growth Rate within Klebsiella pneumoniae Colonies and Biofilm. Biotechnology Progress, 1996, 12, 316-321.	2.6	155
42	Mini-review: Convection around biofilms. Biofouling, 2012, 28, 187-198.	2.2	155
43	A model of biofilm detachment. Biotechnology and Bioengineering, 1993, 41, 111-117.	3.3	154
44	The effect of the chemical, biological, and physical environment on quorum sensing in structured microbial communities. Analytical and Bioanalytical Chemistry, 2007, 387, 371-380.	3.7	149
45	Spatial Patterns of Alkaline Phosphatase Expression within Bacterial Colonies and Biofilms in Response to Phosphate Starvation. Applied and Environmental Microbiology, 1998, 64, 1526-1531.	3.1	146
46	Physiological assessment of bacteria using fluorochromes. Journal of Microbiological Methods, 1995, 21, 1-13.	1.6	143
47	Localized Gene Expression in <i>Pseudomonas aeruginosa</i> Biofilms. Applied and Environmental Microbiology, 2008, 74, 4463-4471.	3.1	143
48	A Three-Dimensional Computer Model of Four Hypothetical Mechanisms Protecting Biofilms from Antimicrobials. Applied and Environmental Microbiology, 2006, 72, 2005-2013.	3.1	142
49	Modelling protection from antimicrobial agents in biofilms through the formation of persister cells. Microbiology (United Kingdom), 2005, 151, 75-80.	1.8	135
50	Biofilm accumulation model that predicts antibiotic resistance of Pseudomonas aeruginosa biofilms. Antimicrobial Agents and Chemotherapy, 1994, 38, 1052-1058.	3.2	130
51	Quantitative analysis of biofilm thickness variability. Biotechnology and Bioengineering, 1995, 45, 503-510.	3.3	129
52	The importance of a multifaceted approach to characterizing the microbial flora of chronic wounds. Wound Repair and Regeneration, 2011, 19, 532-541.	3.0	129
53	Role of electrostatic interactions in cohesion of bacterial biofilms. Applied Microbiology and Biotechnology, 2002, 59, 718-720.	3.6	120
54	Physiology of Pseudomonas aeruginosa in biofilms as revealed by transcriptome analysis. BMC Microbiology, 2010, 10, 294.	3.3	119

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55	Spatial and Temporal Patterns of Biocide Action against <i>Staphylococcus epidermidis</i> Biofilms. Antimicrobial Agents and Chemotherapy, 2010, 54, 2920-2927.	3.2	116
56	Contribution of Stress Responses to Antibiotic Tolerance in Pseudomonas aeruginosa Biofilms. Antimicrobial Agents and Chemotherapy, 2015, 59, 3838-3847.	3.2	115
57	Adaptive responses to antimicrobial agents in biofilms. Environmental Microbiology, 2005, 7, 1186-1191.	3.8	114
58	Reactionâ€"diffusion theory explains hypoxia and heterogeneous growth within microbial biofilms associated with chronic infections. Npj Biofilms and Microbiomes, 2016, 2, 16012.	6.4	106
59	Engineering Approaches for the Detection and Control of Orthopaedic Biofilm Infections. Clinical Orthopaedics and Related Research, 2005, &NA;, 59-66.	1.5	105
60	Engineering scale-up of in situ bioremediation processes: a review. Journal of Contaminant Hydrology, 1995, 19, 171-203.	3.3	104
61	Control of microbial souring by nitrate, nitrite or glutaraldehyde injection in a sandstone column. Journal of Industrial Microbiology, 1996, 17, 128-136.	0.9	104
62	Arginine or Nitrate Enhances Antibiotic Susceptibility of Pseudomonas aeruginosa in Biofilms. Antimicrobial Agents and Chemotherapy, 2006, 50, 382-384.	3.2	104
63	Iron induces bimodal population development by <i>Escherichia coli</i>. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 2629-2634.	7.1	102
64	Staphylococcus aureus Biofilm and Planktonic cultures differentially impact gene expression, mapk phosphorylation, and cytokine production in human keratinocytes. BMC Microbiology, 2011, 11, 143.	3.3	101
65	Identification of Peptides Derived from the Human Antimicrobial Peptide LL-37 Active against Biofilms Formed by Pseudomonas aeruginosa Using a Library of Truncated Fragments. Antimicrobial Agents and Chemotherapy, 2012, 56, 5698-5708.	3.2	101
66	Tolerance of dormant and active cells in Pseudomonas aeruginosa PA01 biofilm to antimicrobial agents. Journal of Antimicrobial Chemotherapy, 2009, 63, 129-135.	3.0	97
67	Time course study of delayed wound healing in a biofilmâ€challenged diabetic mouse model. Wound Repair and Regeneration, 2012, 20, 342-352.	3.0	96
68	Microsensor and transcriptomic signatures of oxygen depletion in biofilms associated with chronic wounds. Wound Repair and Regeneration, 2016, 24, 373-383.	3.0	96
69	Biofilm structural heterogeneity visualized by three microscopic methods. Water Research, 1995, 29, 2006-2009.	11.3	95
70	Modeling Antibiotic Tolerance in Biofilms by Accounting for Nutrient Limitation. Antimicrobial Agents and Chemotherapy, 2004, 48, 48-52.	3.2	91
71	Antimicrobial Penetration and Efficacy in an <i>In Vitro</i> Oral Biofilm Model. Antimicrobial Agents and Chemotherapy, 2011, 55, 3338-3344.	3.2	91
72	Magnetic resonance microscopy of biofilm structure and impact on transport in a capillary bioreactor. Journal of Magnetic Resonance, 2004, 167, 322-327.	2.1	89

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73	Biophysics of biofilm infection. Pathogens and Disease, 2014, 70, 212-218.	2.0	88
74	Electrolytic Generation of Oxygen Partially Explains Electrical Enhancement of Tobramycin Efficacy against <i>Pseudomonas aeruginosa</i> Biofilm. Antimicrobial Agents and Chemotherapy, 1999, 43, 292-296.	3.2	87
75	Analysis of biocide transport limitation in an artificial biofilm system. Journal of Applied Microbiology, 1998, 85, 495-500.	3.1	85
76	Loss of viability and induction of apoptosis in human keratinocytes exposed to <i>Staphylococcus aureus</i> biofilms in vitro. Wound Repair and Regeneration, 2009, 17, 690-699.	3.0	83
77	Risk factors for chronic biofilm-related infection associated with implanted medical devices. Clinical Microbiology and Infection, 2020, 26, 1034-1038.	6.0	81
78	Propionibacterium acnes biofilm is present in intervertebral discs of patients undergoing microdiscectomy. PLoS ONE, 2017, 12, e0174518.	2.5	81
79	Spatial Distribution and Coexistence of Klebsiella pneumoniae and Pseudomonas aeruginosa in Biofilms. Microbial Ecology, 1997, 33, 2-10.	2.8	80
80	Gel-Entrapped Staphylococcus aureus Bacteria as Models of Biofilm Infection Exhibit Growth in Dense Aggregates, Oxygen Limitation, Antibiotic Tolerance, and Heterogeneous Gene Expression. Antimicrobial Agents and Chemotherapy, 2016, 60, 6294-6301.	3.2	78
81	The importance of understanding the infectious microenvironment. Lancet Infectious Diseases, The, 2022, 22, e88-e92.	9.1	78
82	Role of RpoS and AlgT in Pseudomonas aeruginosa biofilm resistance to hydrogen peroxide and monochloramine. Journal of Applied Microbiology, 2000, 88, 546-553.	3.1	76
83	Ultrasonically Controlled Release of Ciprofloxacin from Self-Assembled Coatings on Poly(2-Hydroxyethyl Methacrylate) Hydrogels for Pseudomonas aeruginosa Biofilm Prevention. Antimicrobial Agents and Chemotherapy, 2005, 49, 4272-4279.	3.2	75
84	Testing wound dressings using an <i>in vitro</i> wound model. Journal of Wound Care, 2010, 19, 220-226.	1.2	73
85	Chemical and antimicrobial treatments change the viscoelastic properties of bacterial biofilms. Biofouling, 2011, 27, 207-215.	2.2	72
86	New ways to stop biofilm infections. Lancet, The, 2003, 361, 97.	13.7	70
87	Implications of reaction-diffusion theory for the disinfection of microbial biofilms by reactive antimicrobial agents. Chemical Engineering Science, 1995, 50, 3099-3104.	3.8	69
88	Direct Electric Current Treatment under Physiologic Saline Conditions Kills Staphylococcus epidermidis Biofilms via Electrolytic Generation of Hypochlorous Acid. PLoS ONE, 2013, 8, e55118.	2.5	66
89	A permeability-increasing drug synergizes with bacterial efflux pump inhibitors and restores susceptibility to antibiotics in multi-drug resistant Pseudomonas aeruginosa strains. Scientific Reports, 2019, 9, 3452.	3.3	65
90	Biofilms strike back. Nature Biotechnology, 2005, 23, 1378-1379.	17.5	64

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91	A three-dimensional computer model analysis of three hypothetical biofilm detachment mechanisms. Biotechnology and Bioengineering, 2007, 97, 1573-1584.	3.3	64
92	Differential effects of planktonic and biofilm <scp>MRSA</scp> on human fibroblasts. Wound Repair and Regeneration, 2012, 20, 253-261.	3.0	64
93	Hydrodynamic deformation and removal of <i>Staphylococcus epidermidis</i> biofilms treated with urea, chlorhexidine, iron chloride, or DispersinB. Biotechnology and Bioengineering, 2011, 108, 2968-2977.	3.3	63
94	Biofilm parameters influencing biocide efficacy. Biotechnology and Bioengineering, 1995, 46, 553-560.	3.3	62
95	Transport of 1-?m latex particles inpseudomonas aeruginosa biofilms. Biotechnology and Bioengineering, 1993, 42, 111-117.	3.3	61
96	Antimicrobial activity of synthetic cationic peptides and lipopeptides derived from human lactoferricin against Pseudomonas aeruginosa planktonic cultures and biofilms. BMC Microbiology, 2015, 15, 137.	3.3	61
97	Modeling biofilm antimicrobial resistance. Biotechnology and Bioengineering, 2000, 68, 456-465.	3.3	59
98	Gene expression and protein levels of the stationary phase sigma factor, RpoS, in continuously-fed Pseudomonas aeruginosa biofilms. FEMS Microbiology Letters, 2001, 199, 67-71.	1.8	59
99	Escherichia coli O157:H7 Requires Colonizing Partner to Adhere and Persist in a Capillary Flow Cell. Environmental Science & Technology, 2009, 43, 2105-2111.	10.0	59
100	Development and application of a polymicrobial, in vitro, wound biofilm model. Journal of Applied Microbiology, 2012, 112, 998-1006.	3.1	59
101	High-Density Targeting of a Viral Multifunctional Nanoplatform to a Pathogenic, Biofilm-Forming Bacterium. Chemistry and Biology, 2007, 14, 387-398.	6.0	58
102	Direct Visualization of Spatial and Temporal Patterns of Antimicrobial Action within Model Oral Biofilms. Applied and Environmental Microbiology, 2008, 74, 1869-1875.	3.1	58
103	Conceptual Model of Biofilm Antibiotic Tolerance That Integrates Phenomena of Diffusion, Metabolism, Gene Expression, and Physiology. Journal of Bacteriology, 2019, 201, .	2.2	57
104	Transmission Electron Microscopic Study of Antibiotic Action on Klebsiella pneumoniae Biofilm. Antimicrobial Agents and Chemotherapy, 2002, 46, 2679-2683.	3.2	56
105	In vitro efficacy of bismuth thiols against biofilms formed by bacteria isolated from human chronic wounds. Journal of Applied Microbiology, 2011, 111, 989-996.	3.1	53
106	Modeling biocide action against biofilms. , 2000, 49, 445-455.		52
107	Assessing biofouling on polyamide reverse osmosis (RO) membrane surfaces in a laboratory system. Journal of Membrane Science, 2010, 349, 429-437.	8.2	51
108	Interactions of 1 Î¼m latex particles with pseudomonas aeruginosa biofilms. Water Research, 1993, 27, 1119-1126.	11.3	50

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109	Reduction of polysaccharide production in Pseudomonas aeruginosa biofilms by bismuth dimercaprol (BisBAL) treatment. Journal of Antimicrobial Chemotherapy, 1999, 44, 601-605.	3.0	50
110	Hindering biofilm formation with zosteric acid. Biofouling, 2010, 26, 739-752.	2.2	47
111	An in vitro model for the growth and analysis of chronic wound MRSA biofilms. Journal of Applied Microbiology, 2011, 111, 1275-1282.	3.1	47
112	Antimicrobial Activity of Naturally Occurring Phenols and Derivatives Against Biofilm and Planktonic Bacteria. Frontiers in Chemistry, 2019, 7, 653.	3.6	47
113	Cryosectioning of biofilms for microscopic examination. Biofouling, 1994, 8, 85-91.	2.2	45
114	Biochemical Association of Metabolic Profile and Microbiome in Chronic Pressure Ulcer Wounds. PLoS ONE, 2015, 10, e0126735.	2.5	45
115	Potential biofilm control strategies for extended spaceflight missions. Biofilm, 2020, 2, 100026.	3.8	45
116	[49] Enhanced bacterial biofilm control using electromagnetic fields in combination with antibiotics. Methods in Enzymology, 1999, 310, 656-670.	1.0	44
117	Transport limitation of chlorine disinfection of Pseudomonas aeruginosa entrapped in alginate beads. Biotechnology and Bioengineering, 1996, 49, 93-100.	3.3	44
118	Efficacy of Zosteric Acid Sodium Salt on the Yeast Biofilm Model Candida albicans. Microbial Ecology, 2011, 62, 584-598.	2.8	44
119	Analysis of Clostridium difficile biofilms: imaging and antimicrobial treatment. Journal of Antimicrobial Chemotherapy, 2018, 73, 102-108.	3.0	44
120	Study of the effect of antimicrobial peptide mimic, CSA â€13, on an established biofilm formed by P seudomonas aeruginosa. MicrobiologyOpen, 2013, 2, 318-325.	3.0	43
121	Development of a Laboratory Model of a Phototroph-Heterotroph Mixed-Species Biofilm at the Stone/Air Interface. Frontiers in Microbiology, 2015, 6, 1251.	3.5	42
122	Evidence of bacterial adaptation to monochloramine inPseudomonas aeruginosa biofilms and evaluation of biocide action model. , 1997, 56, 201-209.		41
123	Diffusion of Macromolecules in Model Oral Biofilms. Applied and Environmental Microbiology, 2009, 75, 1750-1753.	3.1	40
124	Pretreatment for membrane water treatment systems: a laboratory study. Water Research, 2003, 37, 3367-3378.	11.3	39
125	Removal and Inactivation of Staphylococcus epidermidis Biofilms by Electrolysis. Applied and Environmental Microbiology, 2006, 72, 6364-6366.	3.1	38
126	Nanoscale Structural and Mechanical Properties of Nontypeable <i>Haemophilus influenzae</i> Biofilms. Journal of Bacteriology, 2009, 191, 2512-2520.	2.2	38

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127	Subaerial Biofilms on Outdoor Stone Monuments: Changing the Perspective Toward an Ecological Framework. BioScience, 2016, 66, 285-294.	4.9	38
128	Characterization and effect of biofouling on polyamide reverse osmosis and nanofiltration membrane surfaces. Biofouling, 2011, 27, 173-183.	2.2	35
129	Electrical enhancement of Streptococcus gordonii biofilm killing by gentamicin. Archives of Oral Biology, 2000, 45, 167-171.	1.8	34
130	Magnetic resonance microscopy analysis of advective transport in a biofilm reactor. Biotechnology and Bioengineering, 2005, 89, 822-834.	3.3	33
131	Biopolymer and Water Dynamics in Microbial Biofilm Extracellular Polymeric Substance. Biomacromolecules, 2008, 9, 2322-2328.	5.4	33
132	The zone model: A conceptual model for understanding the microenvironment of chronic wound infection. Wound Repair and Regeneration, 2020, 28, 593-599.	3.0	33
133	Multicellular resistance: biofilms. Trends in Microbiology, 2001, 9, 204.	7.7	32
134	A repeatable laboratory method for testing the efficacy of biocides against toilet bowl biofilms. Journal of Applied Microbiology, 2001, 91, 110-117.	3.1	32
135	Prospects for Anti-Biofilm Pharmaceuticals. Pharmaceuticals, 2015, 8, 504-511.	3.8	32
136	Robustness analysis of culturing perturbations on Escherichia coli colony biofilm beta-lactam and aminoglycoside antibiotic tolerance. BMC Microbiology, 2010, 10, 185.	3.3	31
137	Hypoxia arising from concerted oxygen consumption by neutrophils and microorganisms in biofilms. Pathogens and Disease, 2018, 76, .	2.0	31
138	Phevalin (aureusimine B)Production by Staphylococcus aureus Biofilm and Impacts on Human Keratinocyte Gene Expression. PLoS ONE, 2012, 7, e40973.	2.5	30
139	Microbial growth in a fixed volume: studies with entrapped Escherichia coli. Applied Microbiology and Biotechnology, 1989, 30, 34.	3.6	29
140	Transport limitation of chlorine disinfection of Pseudomonas aeruginosa entrapped in alginate beads. Biotechnology and Bioengineering, 1996, 49, 93-100.	3.3	29
141	Biofilm Cohesive Strength as a Basis for Biofilm Recalcitrance: Are Bacterial Biofilms Overdesigned?. Microbiology Insights, 2015, 8s2, MBI.S31444.	2.0	28
142	Direct Microscopic Observation of Human Neutrophil-Staphylococcus aureus Interaction <i>In Vitro</i> Suggests a Potential Mechanism for Initiation of Biofilm Infection on an Implanted Medical Device. Infection and Immunity, 2019, 87, .	2.2	28
143	Delayed neutrophil recruitment allows nascent Staphylococcus aureus biofilm formation and immune evasion. Biomaterials, 2021, 275, 120775.	11.4	24
144	Effects of various metal substrata on accumulation ofPseudomonas aeruginosabiofilms and the efficacy of monochloramine as a biocide. Biofouling, 1993, 7, 241-251.	2.2	22

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145	Observations of cell cluster hollowing in Staphylococcus epidermidis biofilms. Letters in Applied Microbiology, 2007, 44, 454-457.	2.2	21
146	Biofilms and Device-Related Infections. , 0, , 423-439.		21
147	Characterization of immobilized cell growth rates using autoradiography. Biotechnology and Bioengineering, 1991, 37, 824-833.	3.3	19
148	Effects of ultrasonic treatment on the efficacy of gentamicin against established Pseudomonas aeruginosa biofilms. Colloids and Surfaces B: Biointerfaces, 1996, 6, 235-242.	5.0	19
149	Bacterial biofilm in acute lesions of hidradenitis suppurativa. British Journal of Dermatology, 2017, 176, 241-243.	1.5	19
150	General Theory for Integrated Analysis of Growth, Gene, and Protein Expression in Biofilms. PLoS ONE, 2013, 8, e83626.	2.5	19
151	Biodegradation rates of crude oil in seawater. Water Environment Research, 1993, 65, 845-848.	2.7	18
152	[13] Fluorescent probes applied to physiological characterization of bacterial biofilms. Methods in Enzymology, 1999, 310, 166-178.	1.0	17
153	Secondary flow mixing due to biofilm growth in capillaries of varying dimensions. Biotechnology and Bioengineering, 2009, 103, 353-360.	3.3	17
154	Antimicrobial Tolerance in Biofilms. , 0, , 269-285.		17
155	Measuring Antimicrobial Efficacy against Biofilms: a Meta-analysis. Antimicrobial Agents and Chemotherapy, 2019, 63, .	3.2	17
156	Measurements of accumulation and displacement at the single cell cluster level in <i>Pseudomonas aeruginosa</i> biofilms. Environmental Microbiology, 2008, 10, 2344-2354.	3.8	15
157	Characterization of a modified rotating disk reactor for the cultivation of Staphylococcus epidermidis biofilm. Journal of Applied Microbiology, 2010, 109, 2105-2117.	3.1	14
158	Evaluation of physiological staining, cryoembedding and autofluorescence quenching techniques on fouling biofilms. Biofouling, 1996, 9, 269-277.	2.2	13
159	Bacterial characterization of toilet bowl biofilm. Biofouling, 1998, 13, 19-30.	2.2	13
160	Permeability enhancers sensitize Î²-lactamase-expressing Enterobacteriaceae and Pseudomonas aeruginosa to Î²-lactamase inhibitors, thereby restoring their Î²-lactam susceptibility. International Journal of Antimicrobial Agents, 2020, 56, 105986.	2.5	13
161	Color measurement as a means of quantifying surface biofouling. Journal of Microbiological Methods, 1998, 34, 143-149.	1.6	11
162	The impact of mental models on the treatment and research of chronic infections due to biofilms. Apmis, 2021, 129, 598-606.	2.0	11

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163	Nisin penetration and efficacy against Staphylococcus aureus biofilms under continuous-flow conditions. Microbiology (United Kingdom), 2019, 165, 761-771.	1.8	11
164	DIFFUSION COEFFICIENT OF FLUORIDE IN DENTAL PLAQUE. Journal of Dental Research, 2005, 84, 1087-1088.	5.2	9
165	Spatiotemporal mapping of oxygen in a microbially-impacted packed bed using 19F Nuclear magnetic resonance oximetry. Journal of Magnetic Resonance, 2018, 293, 123-133.	2.1	9
166	Nonâ€invasive imaging of oxygen concentration in a complex in vitro biofilm infection model using 19 F MRI: Persistence of an oxygen sink despite prolonged antibiotic therapy. Magnetic Resonance in Medicine, 2019, 82, 2248-2256.	3.0	9
167	Confocal Laser Microscopy on Biofilms: Successes and Limitations. Microscopy Today, 2008, 16, 18-23.	0.3	6
168	Sulfenate Esters of Simple Phenols Exhibit Enhanced Activity against Biofilms. ACS Omega, 2020, 5, 6010-6020.	3.5	6
169	Polynomial Accelerated Solutions to a Large Gaussian Model for Imaging Biofilms: In Theory and Finite Precision. Journal of the American Statistical Association, 2018, 113, 1431-1442.	3.1	5
170	Microbial growth rates and local external mass transfer coefficients in a porous bed biofilm system measured by ¹⁹F magnetic resonance imaging of structure, oxygen concentration, and flow velocity. Biotechnology and Bioengineering, 2020, 117, 1458-1469.	3.3	4
171	Novel phenolic antimicrobials enhanced activity of iminodiacetate prodrugs against biofilm and planktonic bacteria. Chemical Biology and Drug Design, 2021, 97, 134-147.	3.2	4
172	Novel Nitro-Heteroaromatic Antimicrobial Agents for the Control and Eradication of Biofilm-Forming Bacteria. Antibiotics, 2021, 10, 855.	3.7	4
173	Experimental Designs to Study the Aggregation and Colonization of Biofilms by Video Microscopy With Statistical Confidence. Frontiers in Microbiology, 2021, 12, 785182.	3.5	3
174	Search for a Shared Genetic or Biochemical Basis for Biofilm Tolerance to Antibiotics across Bacterial Species. Antimicrobial Agents and Chemotherapy, 2022, , e0002122.	3.2	3
175	A review of experimental measurements of effective diffusive permeabilities and effective diffusion coefficients in biofilms. , 0, .		1
176	Highlights from the Montana wound biofilm retreat. Wound Repair and Regeneration, 2009, 17, 626-627.	3.0	0