

Hyun Koo

List of Publications by Year in descending order

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73
papers

9,139
citations

61984

43
h-index

76900

74
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76
all docs

76
docs citations

76
times ranked

9483
citing authors

#	ARTICLE	IF	CITATIONS
1	Targeting microbial biofilms: current and prospective therapeutic strategies. <i>Nature Reviews Microbiology</i> , 2017, 15, 740-755.	28.6	1,187
2	The oral microbiota: dynamic communities and host interactions. <i>Nature Reviews Microbiology</i> , 2018, 16, 745-759.	28.6	1,143
3	Oral Biofilms: Pathogens, Matrix, and Polymicrobial Interactions in Microenvironments. <i>Trends in Microbiology</i> , 2018, 26, 229-242.	7.7	600
4	Symbiotic Relationship between <i>Streptococcus mutans</i> and <i>Candida albicans</i> Synergizes Virulence of Plaque Biofilms <i>In Vivo</i> . <i>Infection and Immunity</i> , 2014, 82, 1968-1981.	2.2	451
5	The Exopolysaccharide Matrix Modulates the Interaction between 3D Architecture and Virulence of a Mixed-Species Oral Biofilm. <i>PLoS Pathogens</i> , 2012, 8, e1002623.	4.7	428
6	Generation of compartmentalized pressure by a nuclear piston governs cell motility in a 3D matrix. <i>Science</i> , 2014, 345, 1062-1065.	12.6	296
7	pH-Activated Nanoparticles for Controlled Topical Delivery of Farnesol To Disrupt Oral Biofilm Virulence. <i>ACS Nano</i> , 2015, 9, 2390-2404.	14.6	266
8	<i>Streptococcus mutans</i> Extracellular DNA Is Upregulated during Growth in Biofilms, Actively Released via Membrane Vesicles, and Influenced by Components of the Protein Secretion Machinery. <i>Journal of Bacteriology</i> , 2014, 196, 2355-2366.	2.2	249
9	<i>Streptococcus mutans</i> -derived extracellular matrix in cariogenic oral biofilms. <i>Frontiers in Cellular and Infection Microbiology</i> , 2015, 5, 10.	3.9	248
10	Dextran-Coated Iron Oxide Nanoparticles as Biomimetic Catalysts for Localized and pH-Activated Biofilm Disruption. <i>ACS Nano</i> , 2019, 13, 4960-4971.	14.6	243
11	Nanocatalysts promote <i>Streptococcus mutans</i> biofilm matrix degradation and enhance bacterial killing to suppress dental caries <i>In Vivo</i> . <i>Biomaterials</i> , 2016, 101, 272-284.	11.4	236
12	Emerging Biomedical Applications of Enzyme-Like Catalytic Nanomaterials. <i>Trends in Biotechnology</i> , 2018, 36, 15-29.	9.3	154
13	Catalytic antimicrobial robots for biofilm eradication. <i>Science Robotics</i> , 2019, 4, .	17.6	154
14	<i>Candida albicans</i> stimulates <i>Streptococcus mutans</i> microcolony development via cross-kingdom biofilm-derived metabolites. <i>Scientific Reports</i> , 2017, 7, 41332.	3.3	148
15	<i>Candida albicans</i> mannans mediate <i>Streptococcus mutans</i> exoenzyme GtfB binding to modulate cross-kingdom biofilm development <i>in vivo</i> . <i>PLoS Pathogens</i> , 2017, 13, e1006407.	4.7	146
16	Converting organosulfur compounds to inorganic polysulfides against resistant bacterial infections. <i>Nature Communications</i> , 2018, 9, 3713.	12.8	141
17	<i>Candida albicans</i> and Early Childhood Caries: A Systematic Review and Meta-Analysis. <i>Caries Research</i> , 2018, 52, 102-112.	2.0	139
18	Topical ferumoxytol nanoparticles disrupt biofilms and prevent tooth decay <i>in vivo</i> via intrinsic catalytic activity. <i>Nature Communications</i> , 2018, 9, 2920.	12.8	129

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19	Spatial mapping of polymicrobial communities reveals a precise biogeography associated with human dental caries. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2020, 117, 12375-12386.	7.1	121
20	The Impact of Dental Implant Surface Modifications on Osseointegration and Biofilm Formation. <i>Journal of Clinical Medicine</i> , 2021, 10, 1641.	2.4	119
21	Bacterial-derived exopolysaccharides enhance antifungal drug tolerance in a cross-kingdom oral biofilm. <i>ISME Journal</i> , 2018, 12, 1427-1442.	9.8	111
22	Dynamics of <i>Streptococcus mutans</i> Transcriptome in Response to Starch and Sucrose during Biofilm Development. <i>PLoS ONE</i> , 2010, 5, e13478.	2.5	106
23	<i>Candida</i> –streptococcal interactions in biofilm-associated oral diseases. <i>PLoS Pathogens</i> , 2018, 14, e1007342.	4.7	103
24	<sc>Arginine Modifies the Exopolysaccharide Matrix and Thwarts <i>Streptococcus mutans</i> Outgrowth within Mixed-Species Oral Biofilms. <i>Journal of Bacteriology</i> , 2016, 198, 2651-2661.	2.2	99
25	Targeted, triggered drug delivery to tumor and biofilm microenvironments. <i>Nanomedicine</i> , 2016, 11, 873-879.	3.3	91
26	Dynamic cell–matrix interactions modulate microbial biofilm and tissue 3D microenvironments. <i>Current Opinion in Cell Biology</i> , 2016, 42, 102-112.	5.4	90
27	<i>Candida albicans</i> and <i>Streptococcus mutans</i>: a potential synergistic alliance to cause virulent tooth decay in children. <i>Future Microbiology</i> , 2014, 9, 1295-1297.	2.0	87
28	<i>Candida albicans</i> Carriage in Children with Severe Early Childhood Caries (S-ECC) and Maternal Relatedness. <i>PLoS ONE</i> , 2016, 11, e0164242.	2.5	84
29	Repurposing ferumoxytol: Diagnostic and therapeutic applications of an FDA-approved nanoparticle. <i>Theranostics</i> , 2022, 12, 796-816.	10.0	83
30	The influence of mutanase and dextranase on the production and structure of glucans synthesized by streptococcal glucosyltransferases. <i>Carbohydrate Research</i> , 2004, 339, 2127-2137.	2.3	82
31	Dynamics of bacterial population growth in biofilms resemble spatial and structural aspects of urbanization. <i>Nature Communications</i> , 2020, 11, 1354.	12.8	78
32	Simultaneous spatiotemporal mapping of in situ pH and bacterial activity within an intact 3D microcolony structure. <i>Scientific Reports</i> , 2016, 6, 32841.	3.3	72
33	RNA-Seq Reveals Enhanced Sugar Metabolism in <i>Streptococcus mutans</i> Co-cultured with <i>Candida albicans</i> within Mixed-Species Biofilms. <i>Frontiers in Microbiology</i> , 2017, 8, 1036.	3.5	71
34	Multi-omics Analyses Reveal Synergistic Carbohydrate Metabolism in <i>Streptococcus mutans</i> - <i>Candida albicans</i> Mixed-Species Biofilms. <i>Infection and Immunity</i> , 2019, 87, .	2.2	71
35	Effects of <i>Apis mellifera</i> Propolis on the Activities of Streptococcal Glucosyltransferases in Solution and Adsorbed onto Saliva–Coated Hydroxyapatite. <i>Caries Research</i> , 2000, 34, 418-426.	2.0	69
36	Characterization and optimization of pH-responsive polymer nanoparticles for drug delivery to oral biofilms. <i>Journal of Materials Chemistry B</i> , 2016, 4, 3075-3085.	5.8	69

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37	Extraction and purification of total RNA from <i>Streptococcus mutans</i> biofilms. <i>Analytical Biochemistry</i> , 2007, 365, 208-214.	2.4	68
38	Enhanced design and formulation of nanoparticles for anti-biofilm drug delivery. <i>Nanoscale</i> , 2019, 11, 219-236.	5.6	67
39	Analysis of the mechanical stability and surface detachment of mature <i>Streptococcus mutans</i> biofilms by applying a range of external shear forces. <i>Biofouling</i> , 2014, 30, 1079-1091.	2.2	61
40	Biofilm three-dimensional architecture influences in situ pH distribution pattern on the human enamel surface. <i>International Journal of Oral Science</i> , 2017, 9, 74-79.	8.6	59
41	Potential implications of SARS-CoV-2 oral infection in the host microbiota. <i>Journal of Oral Microbiology</i> , 2021, 13, 1853451.	2.7	58
42	Precision targeting of bacterial pathogen via bi-functional nanozyme activated by biofilm microenvironment. <i>Biomaterials</i> , 2021, 268, 120581.	11.4	54
43	The Collagen Binding Protein Cnm Contributes to Oral Colonization and Cariogenicity of <i>Streptococcus mutans</i> OMZ175. <i>Infection and Immunity</i> , 2015, 83, 2001-2010.	2.2	48
44	Topical delivery of low-cost protein drug candidates made in chloroplasts for biofilm disruption and uptake by oral epithelial cells. <i>Biomaterials</i> , 2016, 105, 156-166.	11.4	46
45	Cranberry Flavonoids Modulate Cariogenic Properties of Mixed-Species Biofilm through Exopolysaccharides-Matrix Disruption. <i>PLoS ONE</i> , 2015, 10, e0145844.	2.5	44
46	Novel Endodontic Disinfection Approach Using Catalytic Nanoparticles. <i>Journal of Endodontics</i> , 2018, 44, 806-812.	3.1	43
47	Genetic analysis of the <i>Candida albicans</i> biofilm transcription factor network using simple and complex haploinsufficiency. <i>PLoS Genetics</i> , 2017, 13, e1006948.	3.5	43
48	Synergism of <i>Streptococcus mutans</i> and <i>Candida albicans</i> Reinforces Biofilm Maturation and Acidogenicity in Saliva: An In Vitro Study. <i>Frontiers in Cellular and Infection Microbiology</i> , 2020, 10, 623980.	3.9	42
49	Ferumoxylol Nanoparticles Target Biofilms Causing Tooth Decay in the Human Mouth. <i>Nano Letters</i> , 2021, 21, 9442-9449.	9.1	42
50	Î±-Mangostin Disrupts the Development of <i>Streptococcus mutans</i> Biofilms and Facilitates Its Mechanical Removal. <i>PLoS ONE</i> , 2014, 9, e111312.	2.5	40
51	Nonleachable Imidazolium-Incorporated Composite for Disruption of Bacterial Clustering, Exopolysaccharide-Matrix Assembly, and Enhanced Biofilm Removal. <i>ACS Applied Materials & Interfaces</i> , 2017, 9, 38270-38280.	8.0	39
52	Influence of Degree-of-Polymerization and Linkage on the Quantification of Proanthocyanidins using 4-Dimethylaminocinnamaldehyde (DMAC) Assay. <i>Journal of Agricultural and Food Chemistry</i> , 2016, 64, 2190-2199.	5.2	37
53	Microbial Nanoculture as an Artificial Microniche. <i>Scientific Reports</i> , 2016, 6, 30578.	3.3	30
54	Electrostatic Interactions Enable Nanoparticle Delivery of the Flavonoid Myricetin. <i>ACS Omega</i> , 2020, 5, 12649-12659.	3.5	30

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55	Candida "Bacterial Biofilms and Host" Microbe Interactions in Oral Diseases. <i>Advances in Experimental Medicine and Biology</i> , 2019, 1197, 119-141.	1.6	30
56	Dual antibacterial drug-loaded nanoparticles synergistically improve treatment of <i>Streptococcus mutans</i> biofilms. <i>Acta Biomaterialia</i> , 2020, 115, 418-431.	8.3	29
57	<i>Streptococcus mutans yidC1</i> and <i>yidC2</i> Impact Cell Envelope Biogenesis, the Biofilm Matrix, and Biofilm Biophysical Properties. <i>Journal of Bacteriology</i> , 2019, 201, .	2.2	26
58	<i>Streptococcus mutans</i> Displays Altered Stress Responses While Enhancing Biofilm Formation by <i>Lactobacillus casei</i> in Mixed-Species Consortium. <i>Frontiers in Cellular and Infection Microbiology</i> , 2017, 7, 524.	3.9	23
59	Polymicrobial Aggregates in Human Saliva Build the Oral Biofilm. <i>MBio</i> , 2022, 13, e0013122.	4.1	23
60	An Analytical Tool-box for Comprehensive Biochemical, Structural and Transcriptome Evaluation of Oral Biofilms Mediated by <i>Mutans Streptococci</i> . <i>Journal of Visualized Experiments</i> , 2011, , .	0.3	22
61	Surface Topography-Adaptive Robotic Superstructures for Biofilm Removal and Pathogen Detection on Human Teeth. <i>ACS Nano</i> , 2022, 16, 11998-12012.	14.6	20
62	Isolation and purification of total RNA from <i>Streptococcus mutans</i> in suspension cultures and biofilms. <i>Brazilian Oral Research</i> , 2008, 22, 216-222.	1.4	18
63	Affordable oral health care: dental biofilm disruption using chloroplast made enzymes with chewing gum delivery. <i>Plant Biotechnology Journal</i> , 2021, 19, 2113-2125.	8.3	17
64	Surface-Induced Changes in the Conformation and Glucan Production of Glucosyltransferase Adsorbed on Saliva-Coated Hydroxyapatite. <i>Langmuir</i> , 2015, 31, 4654-4662.	3.5	15
65	Do catalytic nanoparticles offer an improved therapeutic strategy to combat dental biofilms?. <i>Nanomedicine</i> , 2017, 12, 275-279.	3.3	15
66	Intervening in Symbiotic Cross-Kingdom Biofilm Interactions: a Binding Mechanism-Based Nonmicrobicidal Approach. <i>MBio</i> , 2021, 12, .	4.1	14
67	Inhibitory effects of xylitol and sorbitol on <i>Streptococcus mutans</i> and <i>Candida albicans</i> biofilms are repressed by the presence of sucrose. <i>Archives of Oral Biology</i> , 2020, 119, 104886.	1.8	11
68	Femtomolar SARS-CoV-2 Antigen Detection Using the Microbubbling Digital Assay with Smartphone Readout Enables Antigen Burden Quantitation and Tracking. <i>Clinical Chemistry</i> , 2021, 68, 230-239.	3.2	11
69	Impact of the repurposed drug thonzonium bromide on host oral-gut microbiomes. <i>Npj Biofilms and Microbiomes</i> , 2021, 7, 7.	6.4	7
70	Retrospective Analysis of <i>Candida</i> -related Conditions in Infancy and Early Childhood Caries. <i>Pediatric Dentistry (discontinued)</i> , 2018, 40, 131-135.	0.4	7
71	Beyond Mucosal Infection: a Role for <i>C. albicans</i> - <i>Streptococcal</i> Interactions in the Pathogenesis of Dental Caries. <i>Current Oral Health Reports</i> , 2014, 1, 86-93.	1.6	5
72	Electrochemical Strategy for Eradicating Fluconazole-Tolerant <i>Candida albicans</i> Using Implantable Titanium. <i>ACS Applied Materials & Interfaces</i> , 2019, 11, 40997-41008.	8.0	5

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73	The effect of Brazilian propolis type-3 against oral microbiota and volatile sulfur compounds in subjects with morning breath malodor. <i>Clinical Oral Investigations</i> , 2022, 26, 1531-1541.	3.0	5