Hyun Koo

List of Publications by Year
in descending order

73 papers	9,139 citations	61945 43 h-index	76872 74 g-index
76 all docs	76 docs citations	76 times ranked	9483 citing authors

#	Article	IF	Citations
1	Targeting microbial biofilms: current and prospective therapeutic strategies. Nature Reviews Microbiology, 2017, 15, 740-755.	13.6	1,187
2	The oral microbiota: dynamic communities and host interactions. Nature Reviews Microbiology, 2018, 16, 745-759.	13.6	1,143
3	Oral Biofilms: Pathogens, Matrix, and Polymicrobial Interactions in Microenvironments. Trends in Microbiology, 2018, 26, 229-242.	3.5	600
4	Symbiotic Relationship between Streptococcus mutans and Candida albicans Synergizes Virulence of Plaque Biofilms <i>In Vivo</i>. Infection and Immunity, 2014, 82, 1968-1981.	1.0	451
5	The Exopolysaccharide Matrix Modulates the Interaction between 3D Architecture and Virulence of a Mixed-Species Oral Biofilm. PLoS Pathogens, 2012, 8, e1002623.	2.1	428
6	Generation of compartmentalized pressure by a nuclear piston governs cell motility in a 3D matrix. Science, 2014, 345, 1062-1065.	6.0	296
7	pH-Activated Nanoparticles for Controlled Topical Delivery of Farnesol To Disrupt Oral Biofilm Virulence. ACS Nano, 2015, 9, 2390-2404.	7.3	266
8	Streptococcus mutans Extracellular DNA Is Upregulated during Growth in Biofilms, Actively Released via Membrane Vesicles, and Influenced by Components of the Protein Secretion Machinery. Journal of Bacteriology, 2014, 196, 2355-2366.	1.0	249
9	Streptococcus mutans-derived extracellular matrix in cariogenic oral biofilms. Frontiers in Cellular and Infection Microbiology, 2015, 5, 10.	1.8	248
10	Dextran-Coated Iron Oxide Nanoparticles as Biomimetic Catalysts for Localized and pH-Activated Biofilm Disruption. ACS Nano, 2019, 13, 4960-4971.	7.3	243
11	Nanocatalysts promote Streptococcus mutans biofilm matrix degradation and enhance bacterial killing to suppress dental caries inÂvivo. Biomaterials, 2016, 101, 272-284.	5.7	236
12	Emerging Biomedical Applications of Enzyme-Like Catalytic Nanomaterials. Trends in Biotechnology, 2018, 36, 15-29.	4.9	154
13	Catalytic antimicrobial robots for biofilm eradication. Science Robotics, 2019, 4, .	9.9	154
14	Candida albicans stimulates Streptococcus mutans microcolony development via cross-kingdom biofilm-derived metabolites. Scientific Reports, 2017, 7, 41332.	1.6	148
15	Candida albicans mannans mediate Streptococcus mutans exoenzyme GtfB binding to modulate cross-kingdom biofilm development in vivo. PLoS Pathogens, 2017, 13, e1006407.	2.1	146
16	Converting organosulfur compounds to inorganic polysulfides against resistant bacterial infections. Nature Communications, 2018, 9, 3713.	5.8	141
17	<i>Candida albicans</i> and Early Childhood Caries: A Systematic Review and Meta-Analysis. Caries Research, 2018, 52, 102-112.	0.9	139
18	Topical ferumoxytol nanoparticles disrupt biofilms and prevent tooth decay in vivo via intrinsic catalytic activity. Nature Communications, 2018, 9, 2920.	5.8	129

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19	Spatial mapping of polymicrobial communities reveals a precise biogeography associated with human dental caries. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 12375-12386.	3.3	121
20	The Impact of Dental Implant Surface Modifications on Osseointegration and Biofilm Formation. Journal of Clinical Medicine, 2021, 10, 1641.	1.0	119
21	Bacterial-derived exopolysaccharides enhance antifungal drug tolerance in a cross-kingdom oral biofilm. ISME Journal, 2018, 12, 1427-1442.	4.4	111
22	Dynamics of Streptococcus mutans Transcriptome in Response to Starch and Sucrose during Biofilm Development. PLoS ONE, 2010, 5, e13478.	1.1	106
23	Candidaâ€"streptococcal interactions in biofilm-associated oral diseases. PLoS Pathogens, 2018, 14, e1007342.	2.1	103
24	<scp>l</scp> -Arginine Modifies the Exopolysaccharide Matrix and Thwarts Streptococcus mutans Outgrowth within Mixed-Species Oral Biofilms. Journal of Bacteriology, 2016, 198, 2651-2661.	1.0	99
25	Targeted, triggered drug delivery to tumor and biofilm microenvironments. Nanomedicine, 2016, 11, 873-879.	1.7	91
26	Dynamic cellâ€"matrix interactions modulate microbial biofilm and tissue 3D microenvironments. Current Opinion in Cell Biology, 2016, 42, 102-112.	2.6	90
27	<i>Candida albicans</i> and <i>Streptococcus mutans</i>: a potential synergistic alliance to cause virulent tooth decay in children. Future Microbiology, 2014, 9, 1295-1297.	1.0	87
28	Candida albicans Carriage in Children with Severe Early Childhood Caries (S-ECC) and Maternal Relatedness. PLoS ONE, 2016, 11, e0164242.	1.1	84
29	Repurposing ferumoxytol: Diagnostic and therapeutic applications of an FDA-approved nanoparticle. Theranostics, 2022, 12, 796-816.	4.6	83
30	The influence of mutanase and dextranase on the production and structure of glucans synthesized by streptococcal glucosyltransferases. Carbohydrate Research, 2004, 339, 2127-2137.	1.1	82
31	Dynamics of bacterial population growth in biofilms resemble spatial and structural aspects of urbanization. Nature Communications, 2020, 11, 1354.	5.8	78
32	Simultaneous spatiotemporal mapping of in situ pH and bacterial activity within an intact 3D microcolony structure. Scientific Reports, 2016, 6, 32841.	1.6	72
33	RNA-Seq Reveals Enhanced Sugar Metabolism in Streptococcus mutans Co-cultured with Candida albicans within Mixed-Species Biofilms. Frontiers in Microbiology, 2017, 8, 1036.	1.5	71
34	Multi-omics Analyses Reveal Synergistic Carbohydrate Metabolism in Streptococcus mutans-Candida albicans Mixed-Species Biofilms. Infection and Immunity, 2019, 87, .	1.0	71
35	Effects of <i>Apis mellifera</i> Propolis on the Activities of Streptococcal Glucosyltransferases in Solution and Adsorbed onto Salivaâ€"Coated Hydroxyapatite. Caries Research, 2000, 34, 418-426.	0.9	69
36	Characterization and optimization of pH-responsive polymer nanoparticles for drug delivery to oral biofilms. Journal of Materials Chemistry B, 2016, 4, 3075-3085.	2.9	69

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37	Extraction and purification of total RNA from Sreptococcus mutans biofilms. Analytical Biochemistry, 2007, 365, 208-214.	1.1	68
38	Enhanced design and formulation of nanoparticles for anti-biofilm drug delivery. Nanoscale, 2019, 11, 219-236.	2.8	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. Biofouling, 2014, 30, 1079-1091.	0.8	61
40	Biofilm three-dimensional architecture influences in situ pH distribution pattern on the human enamel surface. International Journal of Oral Science, 2017, 9, 74-79.	3.6	59
41	Potential implications of SARS-CoV-2 oral infection in the host microbiota. Journal of Oral Microbiology, 2021, 13, 1853451.	1.2	58
42	Precision targeting of bacterial pathogen via bi-functional nanozyme activated by biofilm microenvironment. Biomaterials, 2021, 268, 120581.	5.7	54
43	The Collagen Binding Protein Cnm Contributes to Oral Colonization and Cariogenicity of Streptococcus mutans OMZ175. Infection and Immunity, 2015, 83, 2001-2010.	1.0	48
44	Topical delivery of low-cost protein drug candidates made in chloroplasts for biofilm disruption and uptake by oral epithelial cells. Biomaterials, 2016, 105, 156-166.	5.7	46
45	Cranberry Flavonoids Modulate Cariogenic Properties of Mixed-Species Biofilm through Exopolysaccharides-Matrix Disruption. PLoS ONE, 2015, 10, e0145844.	1.1	44
46	Novel Endodontic Disinfection Approach Using Catalytic Nanoparticles. Journal of Endodontics, 2018, 44, 806-812.	1.4	43
47	Genetic analysis of the Candida albicans biofilm transcription factor network using simple and complex haploinsufficiency. PLoS Genetics, 2017, 13, e1006948.	1.5	43
48	Synergism of Streptococcus mutans and Candida albicans Reinforces Biofilm Maturation and Acidogenicity in Saliva: An In Vitro Study. Frontiers in Cellular and Infection Microbiology, 2020, 10, 623980.	1.8	42
49	Ferumoxytol Nanoparticles Target Biofilms Causing Tooth Decay in the Human Mouth. Nano Letters, 2021, 21, 9442-9449.	4.5	42
50	Î±-Mangostin Disrupts the Development of Streptococcus mutans Biofilms and Facilitates Its Mechanical Removal. PLoS ONE, 2014, 9, e111312.	1.1	40
51	Nonleachable Imidazolium-Incorporated Composite for Disruption of Bacterial Clustering, Exopolysaccharide-Matrix Assembly, and Enhanced Biofilm Removal. ACS Applied Materials & Interfaces, 2017, 9, 38270-38280.	4.0	39
52	Influence of Degree-of-Polymerization and Linkage on the Quantification of Proanthocyanidins using 4-Dimethylaminocinnamaldehyde (DMAC) Assay. Journal of Agricultural and Food Chemistry, 2016, 64, 2190-2199.	2.4	37
53	Microbial Nanoculture as an Artificial Microniche. Scientific Reports, 2016, 6, 30578.	1.6	30
54	Electrostatic Interactions Enable Nanoparticle Delivery of the Flavonoid Myricetin. ACS Omega, 2020, 5, 12649-12659.	1.6	30

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55	Candidaâ€"Bacterial Biofilms and Hostâ€"Microbe Interactions in Oral Diseases. Advances in Experimental Medicine and Biology, 2019, 1197, 119-141.	0.8	30
56	Dual antibacterial drug-loaded nanoparticles synergistically improve treatment of Streptococcus mutans biofilms. Acta Biomaterialia, 2020, 115, 418-431.	4.1	29
57	<i>Streptococcus mutans yidC1</i> and <i>yidC2</i> Impact Cell Envelope Biogenesis, the Biofilm Matrix, and Biofilm Biophysical Properties. Journal of Bacteriology, 2019, 201, .	1.0	26
58	Streptococcus mutans Displays Altered Stress Responses While Enhancing Biofilm Formation by Lactobacillus casei in Mixed-Species Consortium. Frontiers in Cellular and Infection Microbiology, 2017, 7, 524.	1.8	23
59	Polymicrobial Aggregates in Human Saliva Build the Oral Biofilm. MBio, 2022, 13, e0013122.	1.8	23
60	An Analytical Tool-box for Comprehensive Biochemical, Structural and Transcriptome Evaluation of Oral Biofilms Mediated by Mutans Streptococci. Journal of Visualized Experiments, 2011, , .	0.2	22
61	Surface Topography-Adaptive Robotic Superstructures for Biofilm Removal and Pathogen Detection on Human Teeth. ACS Nano, 2022, 16, 11998-12012.	7.3	20
62	Isolation and purification of total RNA from Streptococcus mutans in suspension cultures and biofilms. Brazilian Oral Research, 2008, 22, 216-222.	0.6	18
63	Affordable oral health care: dental biofilm disruption using chloroplast made enzymes with chewing gum delivery. Plant Biotechnology Journal, 2021, 19, 2113-2125.	4.1	17
64	Surface-Induced Changes in the Conformation and Glucan Production of Glucosyltransferase Adsorbed on Saliva-Coated Hydroxyapatite. Langmuir, 2015, 31, 4654-4662.	1.6	15
65	Do catalytic nanoparticles offer an improved therapeutic strategy to combat dental biofilms?. Nanomedicine, 2017, 12, 275-279.	1.7	15
66	Intervening in Symbiotic Cross-Kingdom Biofilm Interactions: a Binding Mechanism-Based Nonmicrobicidal Approach. MBio, 2021, 12, .	1.8	14
67	Inhibitory effects of xylitol and sorbitol on Streptococcus mutans and Candida albicans biofilms are repressed by the presence of sucrose. Archives of Oral Biology, 2020, 119, 104886.	0.8	11
68	Femtomolar SARS-CoV-2 Antigen Detection Using the Microbubbling Digital Assay with Smartphone Readout Enables Antigen Burden Quantitation and Tracking. Clinical Chemistry, 2021, 68, 230-239.	1.5	11
69	Impact of the repurposed drug thonzonium bromide on host oral-gut microbiomes. Npj Biofilms and Microbiomes, 2021, 7, 7.	2.9	7
70	Retrospective Analysis of Candida-related Conditions in Infancy and Early Childhood Caries. Pediatric Dentistry (discontinued), 2018, 40, 131-135.	0.4	7
71	Beyond Mucosal Infection: a Role for C. albicans-Streptococcal Interactions in the Pathogenesis of Dental Caries. Current Oral Health Reports, 2014, 1, 86-93.	0.5	5
72	Electrochemical Strategy for Eradicating Fluconazole-TolerantCandida albicansUsing Implantable Titanium. ACS Applied Materials & Interfaces, 2019, 11, 40997-41008.	4.0	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. Clinical Oral Investigations, 2022, 26, 1531-1541.	1.4	5