

# Hyun Koo

## List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

72  
papers

5,631  
citations

37  
h-index

75  
g-index

76  
ext. papers

7,412  
ext. citations

8.3  
avg, IF

6.35  
L-index

| #  | Paper  | IF   | Citations |
|----|--|------|-----------|
| 72 | Repurposing ferumoxytol: Diagnostic and therapeutic applications of an FDA-approved nanoparticle.. <i>Theranostics</i> , <b>2022</b> , 12, 796-816   | 12.1 | 15        |
| 71 | Polymicrobial Aggregates in Human Saliva Build the Oral Biofilm.. <i>MBio</i> , <b>2022</b> , e0013122   | 7.8  | 7         |
| 70 | Ferumoxytol Nanoparticles Target Biofilms Causing Tooth Decay in the Human Mouth. <i>Nano Letters</i> , <b>2021</b> , 21, 9442-9449  | 11.5 | 12        |
| 69 | The Impact of Dental Implant Surface Modifications on Osseointegration and Biofilm Formation. <i>Journal of Clinical Medicine</i> , <b>2021</b> , 10,  | 5.1  | 19        |
| 68 | Intervening in Symbiotic Cross-Kingdom Biofilm Interactions: a Binding Mechanism-Based Nonmicrobicidal Approach. <i>MBio</i> , <b>2021</b> , 12,   | 7.8  | 1         |
| 67 | Affordable oral health care: dental biofilm disruption using chloroplast made enzymes with chewing gum delivery. <i>Plant Biotechnology Journal</i> , <b>2021</b> , 19, 2113-2125  | 11.6 | 7         |
| 66 | Precision targeting of bacterial pathogen via bi-functional nanozyme activated by biofilm microenvironment. <i>Biomaterials</i> , <b>2021</b> , 268, 120581  | 15.6 | 18        |
| 65 | Femtomolar SARS-CoV-2 Antigen Detection Using the Microbubbling Digital Assay with Smartphone Readout Enables Antigen Burden Quantitation and Dynamics Tracking <b>2021</b> ,  |      | 3         |
| 64 | 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> , <b>2021</b> , 1   | 4.2  | 0         |
| 63 | Femtomolar SARS-CoV-2 Antigen Detection Using the Microbubbling Digital Assay with Smartphone Readout Enables Antigen Burden Quantitation and Tracking. <i>Clinical Chemistry</i> , <b>2021</b> ,  | 5.5  | 3         |
| 62 | Impact of the repurposed drug thonzonium bromide on host oral-gut microbiomes. <i>Npj Biofilms and Microbiomes</i> , <b>2021</b> , 7, 7  | 8.2  | 3         |
| 61 | 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> , <b>2020</b> , 117, 12375-12386 | 11.5 | 49        |
| 60 | Electrostatic Interactions Enable Nanoparticle Delivery of the Flavonoid Myricetin. <i>ACS Omega</i> , <b>2020</b> , 5, 12649-12659  | 3.9  | 12        |
| 59 | Dynamics of bacterial population growth in biofilms resemble spatial and structural aspects of urbanization. <i>Nature Communications</i> , <b>2020</b> , 11, 1354   | 17.4 | 37        |
| 58 | Dual antibacterial drug-loaded nanoparticles synergistically improve treatment of <i>Streptococcus mutans</i> biofilms. <i>Acta Biomaterialia</i> , <b>2020</b> , 115, 418-431   | 10.8 | 14        |
| 57 | 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> , <b>2020</b> , 119, 104886                     | 2.8  | 3         |
| 56 | Potential implications of SARS-CoV-2 oral infection in the host microbiota. <i>Journal of Oral Microbiology</i> , <b>2020</b> , 13, 1853451  | 6.3  | 32        |

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| 55 | Synergism of and Reinforces Biofilm Maturation and Acidogenicity in Saliva: An Study. <i>Frontiers in Cellular and Infection Microbiology</i> , <b>2020</b> , 10, 623980           | 5.9  | 8   |
| 54 | Catalytic antimicrobial robots for biofilm eradication. <i>Science Robotics</i> , <b>2019</b> , 4,   | 18.6 | 77  |
| 53 | Multi-omics Analyses Reveal Synergistic Carbohydrate Metabolism in Streptococcus mutans-Candida albicans Mixed-Species Biofilms. <i>Infection and Immunity</i> , <b>2019</b> , 87, | 3.7  | 29  |
| 52 | Electrochemical Strategy for Eradicating Fluconazole-Tolerant Using Implantable Titanium. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2019</b> , 11, 40997-41008            | 9.5  | 1   |
| 51 | Candida-Bacterial Biofilms and Host-Microbe Interactions in Oral Diseases. <i>Advances in Experimental Medicine and Biology</i> , <b>2019</b> , 1197, 119-141                      | 3.6  | 19  |
| 50 | Dextran-Coated Iron Oxide Nanoparticles as Biomimetic Catalysts for Localized and pH-Activated Biofilm Disruption. <i>ACS Nano</i> , <b>2019</b> , 13, 4960-4971                   | 16.7 | 124 |
| 49 | and Impact Cell Envelope Biogenesis, the Biofilm Matrix, and Biofilm Biophysical Properties. <i>Journal of Bacteriology</i> , <b>2019</b> , 201,                                   | 3.5  | 12  |
| 48 | Enhanced design and formulation of nanoparticles for anti-biofilm drug delivery. <i>Nanoscale</i> , <b>2018</b> , 11, 219-236  | 7.7  | 45  |
| 47 | Bacterial-derived exopolysaccharides enhance antifungal drug tolerance in a cross-kingdom oral biofilm. <i>ISME Journal</i> , <b>2018</b> , 12, 1427-1442                          | 11.9 | 73  |
| 46 | Novel Endodontic Disinfection Approach Using Catalytic Nanoparticles. <i>Journal of Endodontics</i> , <b>2018</b> , 44, 806-812  | 4.7  | 27  |
| 45 | Candida albicans and Early Childhood Caries: A Systematic Review and Meta-Analysis. <i>Caries Research</i> , <b>2018</b> , 52, 102-112   | 4.2  | 82  |
| 44 | Emerging Biomedical Applications of Enzyme-Like Catalytic Nanomaterials. <i>Trends in Biotechnology</i> , <b>2018</b> , 36, 15-29  | 15.1 | 113 |
| 43 | Topical ferumoxytol nanoparticles disrupt biofilms and prevent tooth decay in vivo via intrinsic catalytic activity. <i>Nature Communications</i> , <b>2018</b> , 9, 2920          | 17.4 | 79  |
| 42 | Retrospective Analysis of Candida-related Conditions in Infancy and Early Childhood Caries. <i>Pediatric Dentistry (discontinued)</i> , <b>2018</b> , 40, 131-135                  | 1.2  | 5   |
| 41 | Oral Biofilms: Pathogens, Matrix, and Polymicrobial Interactions in Microenvironments. <i>Trends in Microbiology</i> , <b>2018</b> , 26, 229-242                                   | 12.4 | 339 |
| 40 | Candida-streptococcal interactions in biofilm-associated oral diseases. <i>PLoS Pathogens</i> , <b>2018</b> , 14, e1007348   | 3.4  | 61  |
| 39 | The oral microbiota: dynamic communities and host interactions. <i>Nature Reviews Microbiology</i> , <b>2018</b> , 16, 745-759   | 22.2 | 572 |
| 38 | Converting organosulfur compounds to inorganic polysulfides against resistant bacterial infections. <i>Nature Communications</i> , <b>2018</b> , 9, 3713                           | 17.4 | 85  |

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|----|---|------|-----|
| 37 | Do catalytic nanoparticles offer an improved therapeutic strategy to combat dental biofilms?. <i>Nanomedicine</i> , <b>2017</b> , 12, 275-279   | 5.6  | 13  |
| 36 | <i>Candida albicans</i> stimulates <i>Streptococcus mutans</i> microcolony development via cross-kingdom biofilm-derived metabolites. <i>Scientific Reports</i> , <b>2017</b> , 7, 41332  | 4.9  | 98  |
| 35 | Biofilm three-dimensional architecture influences in situ pH distribution pattern on the human enamel surface. <i>International Journal of Oral Science</i> , <b>2017</b> , 9, 74-79  | 27.9 | 40  |
| 34 | Targeting microbial biofilms: current and prospective therapeutic strategies. <i>Nature Reviews Microbiology</i> , <b>2017</b> , 15, 740-755  | 22.2 | 734 |
| 33 | Nonleachable Imidazolium-Incorporated Composite for Disruption of Bacterial Clustering, Exopolysaccharide-Matrix Assembly, and Enhanced Biofilm Removal. <i>ACS Applied Materials &amp; Interfaces</i> , <b>2017</b> , 9, 38270-38280 | 9.5  | 29  |
| 32 | Displays Altered Stress Responses While Enhancing Biofilm Formation by in Mixed-Species Consortium. <i>Frontiers in Cellular and Infection Microbiology</i> , <b>2017</b> , 7, 524  | 5.9  | 11  |
| 31 | RNA-Seq Reveals Enhanced Sugar Metabolism in Co-cultured with within Mixed-Species Biofilms. <i>Frontiers in Microbiology</i> , <b>2017</b> , 8, 1036   | 5.7  | 47  |
| 30 | Genetic analysis of the <i>Candida albicans</i> biofilm transcription factor network using simple and complex haploinsufficiency. <i>PLoS Genetics</i> , <b>2017</b> , 13, e1006948   | 6    | 30  |
| 29 | <i>Candida albicans</i> mannans mediate <i>Streptococcus mutans</i> exoenzyme GtfB binding to modulate cross-kingdom biofilm development in vivo. <i>PLoS Pathogens</i> , <b>2017</b> , 13, e1006407                                  | 7.6  | 93  |
| 28 | Topical delivery of low-cost protein drug candidates made in chloroplasts for biofilm disruption and uptake by oral epithelial cells. <i>Biomaterials</i> , <b>2016</b> , 105, 156-166  | 15.6 | 30  |
| 27 | Nanocatalysts promote <i>Streptococcus mutans</i> biofilm matrix degradation and enhance bacterial killing to suppress dental caries in vivo. <i>Biomaterials</i> , <b>2016</b> , 101, 272-84   | 15.6 | 156 |
| 26 | Targeted, triggered drug delivery to tumor and biofilm microenvironments. <i>Nanomedicine</i> , <b>2016</b> , 11, 873-9   | 5.6  | 59  |
| 25 | 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> , <b>2016</b> , 64, 2190-9           | 5.7  | 28  |
| 24 | Characterization and optimization of pH-responsive polymer nanoparticles for drug delivery to oral biofilms. <i>Journal of Materials Chemistry B</i> , <b>2016</b> , 4, 3075-3085   | 7.3  | 49  |
| 23 | <i>Candida albicans</i> Carriage in Children with Severe Early Childhood Caries (S-ECC) and Maternal Relatedness. <i>PLoS ONE</i> , <b>2016</b> , 11, e0164242  | 3.7  | 48  |
| 22 | Dynamic cell-matrix interactions modulate microbial biofilm and tissue 3D microenvironments. <i>Current Opinion in Cell Biology</i> , <b>2016</b> , 42, 102-112   | 9    | 65  |
| 21 | Microbial Nanoculture as an Artificial Microniche. <i>Scientific Reports</i> , <b>2016</b> , 6, 30578   | 4.9  | 28  |
| 20 | Simultaneous spatiotemporal mapping of in situ pH and bacterial activity within an intact 3D microcolony structure. <i>Scientific Reports</i> , <b>2016</b> , 6, 32841  | 4.9  | 56  |

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| 19 | l-Arginine Modifies the Exopolysaccharide Matrix and Thwarts Streptococcus mutans Outgrowth within Mixed-Species Oral Biofilms. <i>Journal of Bacteriology</i> , <b>2016</b> , 198, 2651-61  | 3.5  | 66  |
| 18 | Surface-induced changes in the conformation and glucan production of glucosyltransferase adsorbed on saliva-coated hydroxyapatite. <i>Langmuir</i> , <b>2015</b> , 31, 4654-62   | 4    | 13  |
| 17 | The collagen binding protein Cnm contributes to oral colonization and cariogenicity of Streptococcus mutans OMZ175. <i>Infection and Immunity</i> , <b>2015</b> , 83, 2001-10  | 3.7  | 33  |
| 16 | Streptococcus mutans-derived extracellular matrix in cariogenic oral biofilms. <i>Frontiers in Cellular and Infection Microbiology</i> , <b>2015</b> , 5, 10   | 5.9  | 168 |
| 15 | Cranberry Flavonoids Modulate Cariogenic Properties of Mixed-Species Biofilm through Exopolysaccharides-Matrix Disruption. <i>PLoS ONE</i> , <b>2015</b> , 10, e0145844  | 3.7  | 28  |
| 14 | pH-activated nanoparticles for controlled topical delivery of farnesol to disrupt oral biofilm virulence. <i>ACS Nano</i> , <b>2015</b> , 9, 2390-404  | 16.7 | 201 |
| 13 | Beyond Mucosal Infection: a Role for C. albicans-Streptococcal Interactions in the Pathogenesis of Dental Caries. <i>Current Oral Health Reports</i> , <b>2014</b> , 1, 86-93  | 1.2  | 4   |
| 12 | Symbiotic relationship between Streptococcus mutans and Candida albicans synergizes virulence of plaque biofilms in vivo. <i>Infection and Immunity</i> , <b>2014</b> , 82, 1968-81  | 3.7  | 306 |
| 11 | Generation of compartmentalized pressure by a nuclear piston governs cell motility in a 3D matrix. <i>Science</i> , <b>2014</b> , 345, 1062-5  | 33.3 | 228 |
| 10 | Streptococcus mutans 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> , <b>2014</b> , 196, 2355-66 | 3.5  | 185 |
| 9  | Analysis of the mechanical stability and surface detachment of mature Streptococcus mutans biofilms by applying a range of external shear forces. <i>Biofouling</i> , <b>2014</b> , 30, 1079-91  | 3.3  | 48  |
| 8  | EMangostin disrupts the development of Streptococcus mutans biofilms and facilitates its mechanical removal. <i>PLoS ONE</i> , <b>2014</b> , 9, e111312  | 3.7  | 34  |
| 7  | The exopolysaccharide matrix modulates the interaction between 3D architecture and virulence of a mixed-species oral biofilm. <i>PLoS Pathogens</i> , <b>2012</b> , 8, e1002623  | 7.6  | 329 |
| 6  | An analytical tool-box for comprehensive biochemical, structural and transcriptome evaluation of oral biofilms mediated by mutans streptococci. <i>Journal of Visualized Experiments</i> , <b>2011</b> ,   | 1.6  | 18  |
| 5  | Dynamics of Streptococcus mutans transcriptome in response to starch and sucrose during biofilm development. <i>PLoS ONE</i> , <b>2010</b> , 5, e13478   | 3.7  | 90  |
| 4  | Isolation and purification of total RNA from Streptococcus mutans in suspension cultures and biofilms. <i>Brazilian Oral Research</i> , <b>2008</b> , 22, 216-22   | 2.6  | 14  |
| 3  | Extraction and purification of total RNA from Streptococcus mutans biofilms. <i>Analytical Biochemistry</i> , <b>2007</b> , 365, 208-14  | 3.1  | 61  |
| 2  | The influence of mutanase and dextranase on the production and structure of glucans synthesized by streptococcal glucosyltransferases. <i>Carbohydrate Research</i> , <b>2004</b> , 339, 2127-37   | 2.9  | 66  |

- 1 Effects of *Apis mellifera* propolis on the activities of streptococcal glucosyltransferases in solution and adsorbed onto saliva-coated hydroxyapatite. *Caries Research*, **2000**, 34, 418-26 4.2 58