Arul Jayaraman

List of Publications by Year
in descending order

111 papers	6,149 citations	87888 38 h-index	74163 75 g-index
115 all docs	115 docs citations	115 times ranked	7608 citing authors

#	Article	IF	Citations
1	The bacterial signal indole increases epithelial-cell tight-junction resistance and attenuates indicators of inflammation. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 228-233.	7.1	660
2	Gut Microbiota-Derived Tryptophan Metabolites Modulate Inflammatory Response in Hepatocytes and Macrophages. Cell Reports, 2018, 23, 1099-1111.	6.4	406
3	Indole is an inter-species biofilm signal mediated by SdiA. BMC Microbiology, 2007, 7, 42.	3.3	388
4	Differential Effects of Epinephrine, Norepinephrine, and Indole on Escherichia coli O157:H7 Chemotaxis, Colonization, and Gene Expression. Infection and Immunity, 2007, 75, 4597-4607.	2.2	300
5	Bacterial Quorum Sensing: Signals, Circuits, and Implications for Biofilms and Disease. Annual Review of Biomedical Engineering, 2008, 10, 145-167.	12.3	281
6	Microbiome-Derived Tryptophan Metabolites and Their Aryl Hydrocarbon Receptor-Dependent Agonist and Antagonist Activities. Molecular Pharmacology, 2014, 85, 777-788.	2.3	254
7	A high-throughput microfluidic real-time gene expression living cell array. Lab on A Chip, 2007, 7, 77-85.	6.0	200
8	Prediction and quantification of bioactive microbiota metabolites in the mouse gut. Nature Communications, 2014, 5, 5492.	12.8	195
9	Enterohemorrhagic Escherichia coli Biofilms Are Inhibited by 7-Hydroxyindole and Stimulated by Isatin. Applied and Environmental Microbiology, 2007, 73, 4100-4109.	3.1	175
10	Dynamic Gene Expression Profiling Using a Microfabricated Living Cell Array. Analytical Chemistry, 2004, 76, 4098-4103.	6.5	158
11	A programmable microfluidic cell array for combinatorial drug screening. Lab on A Chip, 2012, 12, 1813.	6.0	139
12	Characterization of Microbial Dysbiosis and Metabolomic Changes in Dogs with Acute Diarrhea. PLoS ONE, 2015, 10, e0127259.	2.5	135
13	Chemotaxis to the Quorum-Sensing Signal AI-2 Requires the Tsr Chemoreceptor and the Periplasmic LsrB AI-2-Binding Protein. Journal of Bacteriology, 2011, 193, 768-773.	2.2	118
14	Co-culture of epithelial cells and bacteria for investigating host–pathogen interactions. Lab on A Chip, 2010, 10, 43-50.	6.0	108
15	Advances in Proteomic Technologies. Annual Review of Biomedical Engineering, 2002, 4, 349-373.	12.3	103
16	The microbiota-derived metabolite indole decreases mucosal inflammation and injury in a murine model of NSAID enteropathy. Gut Microbes, 2016, 7, 246-261.	9.8	103
17	Short Chain Fatty Acids Enhance Aryl Hydrocarbon (Ah) Responsiveness in Mouse Colonocytes and Caco-2 Human Colon Cancer Cells. Scientific Reports, 2017, 7, 10163.	3.3	103
18	Flow-Based Microfluidic Device for Quantifying Bacterial Chemotaxis in Stable, Competing Gradients. Applied and Environmental Microbiology, 2009, 75, 4557-4564.	3.1	101

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19	Rapid Fabrication of Bio‐inspired 3D Microfluidic Vascular Networks. Advanced Materials, 2009, 21, 3567-3571.	21.0	100
20	Structure-Dependent Modulation of Aryl Hydrocarbon Receptor-Mediated Activities by Flavonoids. Toxicological Sciences, 2018, 164, 205-217.	3.1	82
21	Interactions between gut microbiota and non-alcoholic liver disease: The role of microbiota-derived metabolites. Pharmacological Research, 2019, 141, 521-529.	7.1	78
22	Temporal regulation of enterohemorrhagic Escherichia coli virulence mediated by autoinducer-2. Applied Microbiology and Biotechnology, 2008, 78, 811-819.	3.6	76
23	Aryl Hydrocarbon Receptor Activity of Tryptophan Metabolites in Young Adult Mouse Colonocytes. Drug Metabolism and Disposition, 2015, 43, 1536-1543.	3.3	76
24	Aryl Hydrocarbon Receptor (AHR) Ligands as Selective AHR Modulators (SAhRMs). International Journal of Molecular Sciences, 2020, 21, 6654.	4.1	69
25	The neuroendocrine hormone norepinephrine increases Pseudomonas aeruginosa PA14 virulence through the las quorum-sensing pathway. Applied Microbiology and Biotechnology, 2009, 84, 763-776.	3.6	65
26	Rational identification of diet-derived postbiotics for improving intestinal microbiota function. Current Opinion in Biotechnology, 2014, 26, 85-90.	6.6	65
27	Identification of neutrophil gelatinase-associated lipocalin (NGAL) as a discriminatory marker of the hepatocyte-secreted protein response to IL-1β: a proteomic analysis. Biotechnology and Bioengineering, 2005, 91, 502-515.	3.3	60
28	Chemotaxis of Escherichia coli to Norepinephrine (NE) Requires Conversion of NE to 3,4-Dihydroxymandelic Acid. Journal of Bacteriology, 2014, 196, 3992-4000.	2.2	59
29	Development of a hybrid model for a partially known intracellular signaling pathway through correction term estimation and neural network modeling. PLoS Computational Biology, 2020, 16, e1008472.	3.2	57
30	The microbiota metabolite indole inhibits Salmonella virulence: Involvement of the PhoPQ two-component system. PLoS ONE, 2018, 13, e0190613.	2.5	51
31	Bisphenol-A alters microbiota metabolites derived from aromatic amino acids and worsens disease activity during colitis. Experimental Biology and Medicine, 2018, 243, 864-875.	2.4	50
32	Proteomic Analysis of 3T3-L1 Adipocyte Mitochondria during Differentiation and Enlargement. Journal of Proteome Research, 2011, 10, 4692-4702.	3.7	48
33	Optimization of Reporter Cells for Expression Profiling in a Microfluidic Device. Biomedical Microdevices, 2005, 7, 213-222.	2.8	44
34	Effects of forced uncoupling protein 1 expression in 3T3-L1 cells on mitochondrial function and lipid metabolism. Journal of Lipid Research, 2007, 48, 826-836.	4.2	44
35	Flavonoids: structure‐function and mechanisms of action and opportunities for drug development. Toxicological Research, 2021, 37, 147-162.	2.1	44
36	Chemotaxis to self-generated AI-2 promotes biofilm formation in Escherichia coli. Microbiology (United Kingdom), 2017, 163, 1778-1790.	1.8	44

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37	Micelleâ€Coated, Hierarchically Structured Nanofibers with Dualâ€Release Capability for Accelerated Wound Healing and Infection Control. Advanced Healthcare Materials, 2018, 7, e1800132.	7.6	42
38	Biphasic chemotaxis of <i>Escherichia coli</i> to the microbiota metabolite indole. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 6114-6120.	7.1	42
39	Environmental Chemical Diethylhexyl Phthalate Alters Intestinal Microbiota Community Structure and Metabolite Profile in Mice. MSystems, 2019, 4, .	3.8	41
40	Editorâ€™s Highlight: Microbial-Derived 1,4-Dihydroxy-2-naphthoic Acid and Related Compounds as Aryl Hydrocarbon Receptor Agonists/Antagonists: Structureâ€"Activity Relationships and Receptor Modeling. Toxicological Sciences, 2017, 155, 458-473.	3.1	40
41	A mouse serum two-dimensional gel map: Application to profiling burn injury and infection. Electrophoresis, 2004, 25, 3055-3065.	2.4	38
42	Age-dependent remodeling of gut microbiome and host serum metabolome in mice. Aging, 2021, 13, 6330-6345.	3.1	35
43	Macrophage Polarization in Atherosclerosis. Genes, 2022, 13, 756.	2.4	35
44	Mathematical Modeling of Pro- and Anti-Inflammatory Signaling in Macrophages. Processes, 2015, 3, 1-18.	2.8	34
45	Engineering Selectively Targeting Antimicrobial Peptides. Annual Review of Biomedical Engineering, 2021, 23, 339-357.	12.3	31
46	Loss of aryl hydrocarbon receptor potentiates FoxM1 signaling to enhance selfâ€renewal of colonic stem and progenitor cells. EMBO Journal, 2020, 39, e104319.	7.8	30
47	Emerging affinity-based techniques in proteomics. Expert Review of Proteomics, 2009, 6, 573-583.	3.0	26
48	The Norepinephrine Metabolite 3,4-Dihydroxymandelic Acid Is Produced by the Commensal Microbiota and Promotes Chemotaxis and Virulence Gene Expression in Enterohemorrhagic Escherichia coli. Infection and Immunity, 2017, 85, .	2.2	26
49	Polyphosphazenes enable durable, hemocompatible, highly efficient antibacterial coatings. Biomaterials, 2021, 268, 120586.	11.4	26
50	Loss of Aryl Hydrocarbon Receptor Promotes Colon Tumorigenesis in <i>ApcS580/+; KrasG12D/+</i> Mice. Molecular Cancer Research, 2021, 19, 771-783.	3.4	26
51	Relative Abundances of Candida albicans and Candida glabrata in <i>In Vitro</i> Coculture Biofilms Impact Biofilm Structure and Formation. Applied and Environmental Microbiology, 2018, 84, .	3.1	25
52	Isoflavones as Ah Receptor Agonists in Colon-Derived Cell Lines: Structureâ€"Activity Relationships. Chemical Research in Toxicology, 2019, 32, 2353-2364.	3.3	25
53	Evaluation of an in Vitro Model of Hepatic Inflammatory Response by Gene Expression Profiling. Tissue Engineering, 2005, 11, 50-63.	4.6	24
54	Effects of high-fat diet and intestinal aryl hydrocarbon receptor deletion on colon carcinogenesis. American Journal of Physiology - Renal Physiology, 2020, 318, G451-G463.	3.4	23

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55	Diet–Host–Microbiota Interactions Shape Aryl Hydrocarbon Receptor Ligand Production to Modulate Intestinal Homeostasis. Annual Review of Nutrition, 2021, 41, 455-478.	10.1	23
56	Effect of diet and intestinal AhR expression on fecal microbiome and metabolomic profiles. Microbial Cell Factories, 2020, 19, 219.	4.0	22
57	Integrated modeling and experimental approach for determining transcription factor profiles from fluorescent reporter data. BMC Systems Biology, 2008, 2, 64.	3.0	21
58	Mathematical Modeling and Parameter Estimation of Intracellular Signaling Pathway: Application to LPS-induced NFκB Activation and TNFα Production in Macrophages. Processes, 2018, 6, 21.	2.8	21
59	Dynamics of Gene Expression in Rat Hepatocytes under Stress. Metabolic Engineering, 2000, 2, 239-251.	7.0	20
60	Photodegradation of fluorotelomer carboxylic 5:3 acid and perfluorooctanoic acid using zinc oxide. Environmental Pollution, 2018, 243, 637-644.	7.5	20
61	Identification of proteins to predict the molecular basis for the observed gender susceptibility in a rat model of alcoholic steatohepatitis by 2D gel proteomics. Proteomics, 2008, 8, 4327-4337.	2.2	18
62	Identification of a time-varying intracellular signalling model through data clustering and parameter selection: application to NF-κB signalling pathway induced by LPS in the presence of BFA. IET Systems Biology, 2019, 13, 169-179.	1.5	18
63	Ah receptor ligands and their impacts on gut resilience: structure–activity effects. Critical Reviews in Toxicology, 2020, 50, 463-473.	3.9	18
64	Identification of cell-to-cell heterogeneity through systems engineering approaches. AICHE Journal, 2020, 66, e16925.	3.6	18
65	Dispensable role for interferon-γ in the burn-induced acute phase response: A proteomic analysis. Proteomics, 2004, 4, 1830-1839.	2.2	16
66	Embedding Synthetic Microvascular Networks in Poly(Lactic Acid) Substrates with Rounded Cross-Sections for Cell Culture Applications. PLoS ONE, 2013, 8, e73188.	2.5	16
67	Dopamine is an aryl hydrocarbon receptor agonist. Biochemical Journal, 2020, 477, 3899-3910.	3.7	16
68	Emerging molecular techniques for studying microbial community composition and function in microbiologically influenced corrosion. International Biodeterioration and Biodegradation, 2019, 144, 104722.	3.9	15
69	Dietary spinach reshapes the gut microbiome in an Apc-mutant genetic background: mechanistic insights from integrated multi-omics. Gut Microbes, 2021, 13, 1972756.	9.8	15
70	Loss of aryl hydrocarbon receptor suppresses the response of colonic epithelial cells to IL22 signaling by upregulating SOCS3. American Journal of Physiology - Renal Physiology, 2022, 322, G93-G106.	3.4	15
71	Biological Filtering and Substrate Promiscuity Prediction for Annotating Untargeted Metabolomics. Metabolites, 2020, 10, 160.	2.9	14
72	Empirical modeling of T cell activation predicts interplay of host cytokines and bacterial indole. Biotechnology and Bioengineering, 2017, 114, 2660-2667.	3.3	13

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73	Microbiota-Mediated Immune Regulation in Atherosclerosis. Molecules, 2021, 26, 179.	3.8	13
74	Interkingdom adenosine signal reduces *Pseudomonas aeruginosa* pathogenicity. Microbial Biotechnology, 2012, 5, 560-572.	4.2	12
75	Molecular Mechanism for Attractant Signaling to DHMA by E.Âcoli Tsr. Biophysical Journal, 2020, 118, 492-504.	0.5	12
76	Analysis of Transcription Factor Network Underlying 3T3-L1 Adipocyte Differentiation. PLoS ONE, 2014, 9, e100177.	2.5	11
77	Conversion of Norepinephrine to 3,4-Dihdroxymandelic Acid in Escherichia coli Requires the QseBC Quorum-Sensing System and the FeaR Transcription Factor. Journal of Bacteriology, 2018, 200, .	2.2	11
78	Novel Role of Ghrelin Receptor in Gut Dysbiosis and Experimental Colitis in Aging. International Journal of Molecular Sciences, 2022, 23, 2219.	4.1	11
79	Effect of uncoupling protein€1 expression on 3T3€L1 adipocyte gene expression. FEBS Letters, 2007, 581, 5865-5871.	2.8	10
80	Interactions between gut microbiota and non-alcoholic liver disease: The role of microbiota-derived metabolites. Pharmacological Research, 2019, 142, 314.	7.1	10
81	Role of the Aryl Hydrocarbon Receptor (AhR) in Mediating the Effects of Coffee in the Colon. Molecular Nutrition and Food Research, 2021, 65, e2100539.	3.3	10
82	Human intestinal epithelial cell-derived molecule(s) increase enterohemorrhagic *Escherichia coli* virulence. FEMS Immunology and Medical Microbiology, 2012, 66, 399-410.	2.7	9
83	Emerging computational tools and models for studying gut microbiota composition and function. Current Opinion in Biotechnology, 2020, 66, 301-311.	6.6	9
84	Identification of Gut Bacterial Enzymes for Keto-Reductive Metabolism of Xenobiotics. ACS Chemical Biology, 2022, 17, 1665-1671.	3.4	8
85	Gene Expression Profiling of Long-Term Changes in Rat Liver Following Burn Injury. Journal of Surgical Research, 2009, 152, 3-17.e2.	1.6	7
86	A non-beta-lactam antibiotic inhibitor for enterohemorrhagic Escherichia coli O104:H4. Journal of Molecular Medicine, 2019, 97, 1285-1297.	3.9	6
87	Single-cell RNA Sequencing Reveals How the Aryl Hydrocarbon Receptor Shapes Cellular Differentiation Potency in the Mouse Colon. Cancer Prevention Research, 2022, 15, 17-28.	1.5	6
88	Using the Tet-On system to develop a procedure for extracting transcription factor activation dynamics. Molecular BioSystems, 2010, 6, 1883.	2.9	5
89	A Comprehensive High-Efficiency Protocol for Isolation, Culture, Polarization, and Glycolytic Characterization of Bone Marrow-Derived Macrophages. Journal of Visualized Experiments, 2021, , .	0.3	5
90	Targeting the Aryl Hydrocarbon Receptor in Stem Cells to Improve the Use of Food as Medicine. Current Stem Cell Reports, 2020, 6, 109-118.	1.6	5

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91	3,3â€²-Diindolylmethane and 1,4-dihydroxy-2-naphthoic acid prevent chronic mild stress induced depressive-like behaviors in female mice. Journal of Affective Disorders, 2022, 309, 201-210.	4.1	5
92	Molecular Modeling of Chemoreceptor:Ligand Interactions. Methods in Molecular Biology, 2018, 1729, 353-372.	0.9	4
93	A High Fat/High Sugar Diet Alters the Gastrointestinal Metabolome in a Sex Dependent Manner. Metabolites, 2020, 10, 421.	2.9	4
94	Common Metabolites in Two Different Hypertensive Mouse Models: A Serum and Urine Metabolome Study. Biomolecules, 2021, 11, 1387.	4.0	4
95	Characterization of enzymatic micromachining for construction of variable cross-section microchannel topologies. Biomicrofluidics, 2016, 10, 033102.	2.4	3
96	Metabolomics of Acute vs. Chronic Spinach Intake in an Apcâ€"Mutant Genetic Background: Linoleate and Butanoate Metabolites Targeting HDAC Activity and IFNâ€"Î³ Signaling. Cells, 2022, 11, 573.	4.1	3
97	Skin Wound Healing: Micelle-Coated, Hierarchically Structured Nanofibers with Dual-Release Capability for Accelerated Wound Healing and Infection Control (Adv. Healthcare Mater. 11/2018). Advanced Healthcare Materials, 2018, 7, 1870045.	7.6	2
98	Hydroxylated Chalcones as Aryl Hydrocarbon Receptor Agonists: Structure-Activity Effects. Toxicological Sciences, 2021, 180, 148-159.	3.1	2
99	A Hybrid Mechanistic Data-Driven Approach for Modeling Uncertain Intracellular Signaling Pathways. , 2021, , .		2
100	Microvascular Networks for Tissue Engineering. , 2013, , 27-52.		1
101	A Static Microfluidic Device for Investigating the Chemotaxis Response to Stable, Non-linear Gradients. Methods in Molecular Biology, 2018, 1729, 47-59.	0.9	1
102	Dynamic optimal experimental design yields marginal improvement over steadyâ€state results for computational maximisation of regulatory Tâ€cell induction in ex vivo culture. IET Systems Biology, 2018, 12, 241-246.	1.5	1
103	Identification of Heterogeneous Parameters in an Intracellular Reaction Network from Population Snapshot Measurements through Sensitivity Analysis and Neural Network. IFAC-PapersOnLine, 2019, 52, 107-112.	0.9	1
104	Modeling inter-kingdom regulation of inflammatory signaling in human intestinal epithelial cells. Computers and Chemical Engineering, 2020, 140, 106954.	3.8	1
105	Solution of inverse problems for obtaining protein concentrations from fluorescent microscopy images. , 2009, , .		0
106	Integrative Approach to Extract the Single-cell Dynamics of LPS-induced $ext{NF}kappamathrm{B}$ Signal Pathway through Flow Cytometry Measurements and Parameter Estimation. , 2018, , .		0
107	Derivation of a Dynamic Model for Palmitate-induced NFÎºB Signaling Pathway through Systems Biology Approach. , 2020, , .		0
108	Expression Profiling Using Microfluidic Living Cell Arrays. , 2009, , 211-226.		0

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109	A New Link Between Stress and Infection. FASEB Journal, 2017, 31, 622.12.	0.5	0
110	Gene Expression Analysis of the Effect of Microbial Tryptophan Metabolites on T‐cell Differentiation. FASEB Journal, 2018, 32, 613.2.	0.5	0
111	Serotonin Promotes Enterohemorrhagic Escherichia Coli Pathogenesis Through Altered AI‐2 Production by Gut Microbiota. FASEB Journal, 2018, 32, 669.11.	0.5	0