James A Imlay

List of Publications by Year
in descending order

85 papers	14,839 citations	31976 53 h-index	53230 85 g-index
90 all docs	90 docs citations	90 times ranked	13429 citing authors

#	Article	IF	Citations
1	<i>Escherichia coli</i> induces DNA repair enzymes to protect itself from lowâ€grade hydrogen peroxide stress. Molecular Microbiology, 2022, 117, 754-769.	2.5	9
2	Escherichia coli Uses a Dedicated Importer and Desulfidase To Ferment Cysteine. MBio, 2022, 13, e0296521.	4.1	5
3	Identifying the mediators of intracellular E. coli inactivation under UVA light: The (photo) Fenton process and singlet oxygen. Water Research, 2022, 221, 118740.	11.3	17
4	How Microbes Evolved to Tolerate Oxygen. Trends in Microbiology, 2021, 29, 428-440.	7.7	56
5	How Microbes Defend Themselves From Incoming Hydrogen Peroxide. Frontiers in Immunology, 2021, 12, 667343.	4.8	62
6	When anaerobes encounter oxygen: mechanisms of oxygen toxicity, tolerance and defence. Nature Reviews Microbiology, 2021, 19, 774-785.	28.6	108
7	Cystine import is a valuable but risky process whose hazards <i>Escherichia coli</i> minimizes by inducing a cysteine exporter. Molecular Microbiology, 2020, 113, 22-39.	2.5	31
8	Escherichia coli K-12 Lacks a High-Affinity Assimilatory Cysteine Importer. MBio, 2020, 11, .	4.1	17
9	During Oxidative Stress the Clp Proteins of <i>Escherichia coli</i> Ensure that Iron Pools Remain Sufficient To Reactivate Oxidized Metalloenzymes. Journal of Bacteriology, 2020, 202, .	2.2	14
10	Do reactive oxygen species or does oxygen itself confer obligate anaerobiosis? The case of <i>Bacteroides thetaiotaomicron</i>. Molecular Microbiology, 2020, 114, 333-347.	2.5	11
11	A conserved motif liganding the [4Feâ€"4S] cluster in [4Feâ€"4S] fumarases prevents irreversible inactivation of the enzyme during hydrogen peroxide stress. Redox Biology, 2019, 26, 101296.	9.0	18
12	Evolutionary adaptations that enable enzymes to tolerate oxidative stress. Free Radical Biology and Medicine, 2019, 140, 4-13.	2.9	35
13	Where in the world do bacteria experience oxidative stress?. Environmental Microbiology, 2019, 21, 521-530.	3.8	201
14	4-Hydroxybenzaldehyde sensitizes Acinetobacter baumannii to amphenicols. Applied Microbiology and Biotechnology, 2018, 102, 2323-2335.	3.6	14
15	Improved measurements of scant hydrogen peroxide enable experiments that define its threshold of toxicity for Escherichia coli. Free Radical Biology and Medicine, 2018, 120, 217-227.	2.9	57
16	Endogenous superoxide is a key effector of the oxygen sensitivity of a model obligate anaerobe. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, E3266-E3275.	7.1	37
17	Quantification of Hydrogen Sulfide and Cysteine Excreted by Bacterial Cells. Bio-protocol, 2018, 8, .	0.4	1
18	Lineage-specific SoxR-mediated Regulation of an Endoribonuclease Protects Non-enteric Bacteria from Redox-active Compounds. Journal of Biological Chemistry, 2017, 292, 121-133.	3.4	19

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19	The Fumarate Reductase of <i>Bacteroides thetaiotaomicron</i> , unlike That of <i>Escherichia coli</i> , Is Configured so that It Does Not Generate Reactive Oxygen Species. MBio, 2017, 8, .	4.1	32
20	<i>Escherichia coli</i> cytochrome <i>c</i> peroxidase is a respiratory oxidase that enables the use of hydrogen peroxide as a terminal electron acceptor. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, E6922-E6931.	7.1	100
21	The cytochrome <i>bd</i> oxidase of <i>Escherichia coli</i> prevents respiratory inhibition by endogenous and exogenous hydrogen sulfide. Molecular Microbiology, 2016, 101, 62-77.	2.5	82
22	The induction of two biosynthetic enzymes helps <scp><i>E</i></scp><i>scherichia coli</i> sustain heme synthesis and activate catalase during hydrogen peroxide stress. Molecular Microbiology, 2015, 96, 744-763.	2.5	49
23	Diagnosing oxidative stress in bacteria: not as easy as you might think. Current Opinion in Microbiology, 2015, 24, 124-131.	5.1	205
24	Transcription Factors That Defend Bacteria Against Reactive Oxygen Species. Annual Review of Microbiology, 2015, 69, 93-108.	7.3	180
25	The Escherichia coli Small Protein MntS and Exporter MntP Optimize the Intracellular Concentration of Manganese. PLoS Genetics, 2015, 11, e1004977.	3.5	104
26	Physiological Roles and Adverse Effects of the Two Cystine Importers of Escherichia coli. Journal of Bacteriology, 2015, 197, 3629-3644.	2.2	64
27	Bacterial Porphyrin Extraction and Quantification by LC/MS/MS Analysis. Bio-protocol, 2015, 5, .	0.4	6
28	The Mismetallation of Enzymes during Oxidative Stress. Journal of Biological Chemistry, 2014, 289, 28121-28128.	3.4	209
29	Intracellular Hydrogen Peroxide and Superoxide Poison 3-Deoxy-D-Arabinoheptulosonate 7-Phosphate Synthase, the First Committed Enzyme in the Aromatic Biosynthetic Pathway of Escherichia coli. Journal of Bacteriology, 2014, 196, 1980-1991.	2.2	55
30	How Escherichia coli Tolerates Profuse Hydrogen Peroxide Formation by a Catabolic Pathway. Journal of Bacteriology, 2013, 195, 4569-4579.	2.2	71
31	Comparative study of <scp>SoxR</scp> activation by redoxâ€active compounds. Molecular Microbiology, 2013, 90, 983-996.	2.5	55
32	Cell Death from Antibiotics Without the Involvement of Reactive Oxygen Species. Science, 2013, 339, 1210-1213.	12.6	480
33	The molecular mechanisms and physiological consequences of oxidative stress: lessons from a model bacterium. Nature Reviews Microbiology, 2013, 11, 443-454.	28.6	1,179
34	An anaerobic bacterium, <i><scp>B</scp>acteroides thetaiotaomicron</i>, uses a consortium of enzymes to scavenge hydrogen peroxide. Molecular Microbiology, 2013, 90, 1356-1371.	2.5	69
35	Superoxide poisons mononuclear iron enzymes by causing mismetallation. Molecular Microbiology, 2013, 89, 123-134.	2.5	79
36	Mononuclear Iron Enzymes Are Primary Targets of Hydrogen Peroxide Stress. Journal of Biological Chemistry, 2012, 287, 15544-15556.	3.4	184

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37	Why do bacteria use so many enzymes to scavenge hydrogen peroxide?. Archives of Biochemistry and Biophysics, 2012, 525, 145-160.	3.0	330
38	Iron enzyme ribulose-5-phosphate 3-epimerase in <i>Escherichia coli</i> is rapidly damaged by hydrogen peroxide but can be protected by manganese. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 5402-5407.	7.1	200
39	The SoxRS response of <i>Escherichia coli</i> is directly activated by redoxâ€cycling drugs rather than by superoxide. Molecular Microbiology, 2011, 79, 1136-1150.	2.5	223
40	The alternative aerobic ribonucleotide reductase of <i>Escherichia coli</i>, NrdEF, is a manganeseâ€dependent enzyme that enables cell replication during periods of iron starvation. Molecular Microbiology, 2011, 80, 319-334.	2.5	119
41	The YaaA Protein of the Escherichia coli OxyR Regulon Lessens Hydrogen Peroxide Toxicity by Diminishing the Amount of Intracellular Unincorporated Iron. Journal of Bacteriology, 2011, 193, 2186-2196.	2.2	61
42	Redox Pioneer: Professor Irwin Fridovich. Antioxidants and Redox Signaling, 2011, 14, 335-340.	5.4	12
43	The Escherichia coli BtuE Protein Functions as a Resistance Determinant against Reactive Oxygen Species. PLoS ONE, 2011, 6, e15979.	2.5	29
44	Two sources of endogenous hydrogen peroxide in <i>Escherichia coli</i>. Molecular Microbiology, 2010, 75, 1389-1401.	2.5	155
45	Hydrogen peroxide inactivates the <i>Escherichia coli</i> Isc ironâ€sulphur assembly system, and OxyR induces the Suf system to compensate. Molecular Microbiology, 2010, 78, 1448-1467.	2.5	189
46	Iron Homeostasis Affects Antibiotic-mediated Cell Death in Pseudomonas Species. Journal of Biological Chemistry, 2010, 285, 22689-22695.	3.4	98
47	The Escherichia coli btuE gene, encodes a glutathione peroxidase that is induced under oxidative stress conditions. Biochemical and Biophysical Research Communications, 2010, 398, 690-694.	2.1	66
48	Manganese import is a key element of the OxyR response to hydrogen peroxide in <i>Escherichia coli</i>. Molecular Microbiology, 2009, 72, 844-858.	2.5	275
49	Oxidative Stress. EcoSal Plus, 2009, 3, .	5.4	31
50	How obligatory is anaerobiosis?. Molecular Microbiology, 2008, 68, 801-804.	2.5	23
51	Cellular Defenses against Superoxide and Hydrogen Peroxide. Annual Review of Biochemistry, 2008, 77, 755-776.	11.1	1,278
52	Micromolar Intracellular Hydrogen Peroxide Disrupts Metabolism by Damaging Iron-Sulfur Enzymes. Journal of Biological Chemistry, 2007, 282, 929-937.	3.4	288
53	Submicromolar hydrogen peroxide disrupts the ability of Fur protein to control free-iron levels in Escherichia coli. Molecular Microbiology, 2007, 64, 822-830.	2.5	116
54	Only one of a wide assortment of manganese-containing SOD mimicking compounds rescues the slow aerobic growth phenotypes of both Escherichia coli and Saccharomyces cerevisiae strains lacking superoxide dismutase enzymes. Journal of Inorganic Biochemistry, 2007, 101, 1875-1882.	3.5	50

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55	Iron-sulphur clusters and the problem with oxygen. Molecular Microbiology, 2006, 59, 1073-1082.	2.5	594
56	Detection and Quantification of Superoxide Formed within the Periplasm of Escherichia coli. Journal of Bacteriology, 2006, 188, 6326-6334.	2.2	151
57	Substantial DNA damage from submicromolar intracellular hydrogen peroxide detected in Hpx- mutants of Escherichia coli. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 9317-9322.	7.1	318
58	Are Respiratory Enzymes the Primary Sources of Intracellular Hydrogen Peroxide?. Journal of Biological Chemistry, 2004, 279, 48742-48750.	3.4	189
59	Repair of Oxidized Iron-Sulfur Clusters in Escherichia coli. Journal of Biological Chemistry, 2004, 279, 44590-44599.	3.4	166
60	Pathways of Oxidative Damage. Annual Review of Microbiology, 2003, 57, 395-418.	7.3	1,813
61	A mechanism by which nitric oxide accelerates the rate of oxidative DNA damage in Escherichia coli. Molecular Microbiology, 2003, 49, 11-22.	2.5	64
62	High Levels of Intracellular Cysteine Promote Oxidative DNA Damage by Driving the Fenton Reaction. Journal of Bacteriology, 2003, 185, 1942-1950.	2.2	406
63	Factors Contributing to Hydrogen Peroxide Resistance in Streptococcus pneumoniae Include Pyruvate Oxidase (SpxB) and Avoidance of the Toxic Effects of the Fenton Reaction. Journal of Bacteriology, 2003, 185, 6815-6825.	2.2	238
64	Contrasting Sensitivities of Escherichia coli Aconitases A and B to Oxidation and Iron Depletion. Journal of Bacteriology, 2003, 185, 221-230.	2.2	187
65	Increasing the Oxidative Stress Response Allows Escherichia coli To Overcome Inhibitory Effects of Condensed Tannins. Applied and Environmental Microbiology, 2003, 69, 3406-3411.	3.1	55
66	Reduced Flavins Promote Oxidative DNA Damage in Non-respiringEscherichia coli by Delivering Electrons to Intracellular Free Iron. Journal of Biological Chemistry, 2002, 277, 34055-34066.	3.4	125
67	Quantitation of intracellular free iron by electron paramagnetic resonance spectroscopy. Methods in Enzymology, 2002, 349, 3-9.	1.0	83
68	How oxygen damages microbes: Oxygen tolerance and obligate anaerobiosis. Advances in Microbial Physiology, 2002, 46, 111-153.	2.4	205
69	Mechanism of Superoxide and Hydrogen Peroxide Formation by Fumarate Reductase, Succinate Dehydrogenase, and Aspartate Oxidase. Journal of Biological Chemistry, 2002, 277, 42563-42571.	3.4	248
70	In vitro quantitation of biological superoxide and hydrogen peroxide generation. Methods in Enzymology, 2002, 349, 354-361.	1.0	25
71	A potential role for periplasmic superoxide dismutase in blocking the penetration of external superoxide into the cytosol of Gram-negative bacteria. Molecular Microbiology, 2002, 43, 95-106.	2.5	151
72	What biological purpose is served by superoxide reductase?. Journal of Biological Inorganic Chemistry, 2002, 7, 659-663.	2.6	46

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73	Alkyl Hydroperoxide Reductase Is the Primary Scavenger of Endogenous Hydrogen Peroxide in Escherichia coli. Journal of Bacteriology, 2001, 183, 7173-7181.	2.2	707
74	Hydrogen Peroxide Fluxes and Compartmentalization inside Growing Escherichia coli. Journal of Bacteriology, 2001, 183, 7182-7189.	2.2	406
75	How does oxygen inhibit central metabolism in the obligate anaerobe Bacteroides thetaiotaomicron. Molecular Microbiology, 2001, 39, 1562-1571.	2.5	97
76	Yeast Lacking Superoxide Dismutase(s) Show Elevated Levels of â€œFree Ironâ€•as Measured by Whole Cell Electron Paramagnetic Resonance. Journal of Biological Chemistry, 2000, 275, 29187-29192.	3.4	118
77	The Identification of Primary Sites of Superoxide and Hydrogen Peroxide Formation in the Aerobic Respiratory Chain and Sulfite Reductase Complex of Escherichia coli. Journal of Biological Chemistry, 1999, 274, 10119-10128.	3.4	247
78	The regulation and role of the periplasmic copper, zinc superoxide dismutase of Escherichia coli. Molecular Microbiology, 1999, 32, 179-191.	2.5	160
79	An Intracellular Iron Chelator Pleiotropically Suppresses Enzymatic and Growth Defects of Superoxide Dismutase-Deficient <i>Escherichia coli</i>. Journal of Bacteriology, 1999, 181, 3792-3802.	2.2	46
80	Balance between Endogenous Superoxide Stress and Antioxidant Defenses. Journal of Bacteriology, 1998, 180, 1402-1410.	2.2	153
81	Inactivation of Dehydratase [4Fe-4S] Clusters and Disruption of Iron Homeostasis upon Cell Exposure to Peroxynitrite. Journal of Biological Chemistry, 1997, 272, 27652-27659.	3.4	110
82	A Metabolic Enzyme That Rapidly Produces Superoxide, Fumarate Reductase of Escherichia coli. Journal of Biological Chemistry, 1995, 270, 19767-19777.	3.4	113
83	Exogenous quinones directly inhibit the respiratory NADH dehydrogenase in Escherichia coli. Archives of Biochemistry and Biophysics, 1992, 296, 337-346.	3.0	53
84	Superoxide Production by Respiring Membranes of<i>Escherichia Coli</i>. Free Radical Research Communications, 1991, 12, 59-66.	1.8	55
85	Toxicity, Mutagenesis and Stress Responses Induced in Escherichia Coli by Hydrogen Peroxide. Journal of Cell Science, 1987, 1987, 289-301.	2.0	52