Elizabeth M Gillam

List of Publications by Citations

108 papers	4,957 citations	38 h-index	68 g-index
126 ext. papers	5,313 ext. citations	5.3 avg, IF	5.31 L-index

#	Paper	IF	Citations
108	Expression of modified human cytochrome P450 3A4 in Escherichia coli and purification and reconstitution of the enzyme. *Archives of Biochemistry and Biophysics*, **1993**, 305, 123-31	4.1	349
107	Drug metabolism by Escherichia coli expressing human cytochromes P450. *Nature Biotechnology*, **1997**, 15, 784-8	44.5	258
106	Oxidation of indole by cytochrome P450 enzymes. *Biochemistry*, **2000**, 39, 13817-24	3.2	239
105	Catalytic properties of polymorphic human cytochrome P450 1B1 variants. *Carcinogenesis*, **1999**, 20, 1607-13	4.6	209
104	Metabolism of tamoxifen by recombinant human cytochrome P450 enzymes: formation of the 4-hydroxy, 4R-hydroxy and N-desmethyl metabolites and isomerization of trans-4-hydroxytamoxifen. *Drug Metabolism and Disposition*, **2002**, 30, 869-74	4	208
103	Association of CYP1B1 genetic polymorphism with incidence to breast and lung cancer. *Pharmacogenetics and Genomics*, **2000**, 10, 25-33		158
102	Metabolic activation of polycyclic aromatic hydrocarbons and other procarcinogens by cytochromes P450 1A1 and P450 1B1 allelic variants and other human cytochromes P450 in Salmonella typhimurium NM2009. *Drug Metabolism and Disposition*, **2001**, 29, 1176-82	4	146
101	Metabolism of benzo[a]pyrene to trans-7,8-dihydroxy-7, 8-dihydrobenzo[a]pyrene by recombinant human cytochrome P450 1B1 and purified liver epoxide hydrolase. *Chemical Research in Toxicology*, **1999**, 12, 623-9	4	142
100	Expression of modified human cytochrome P450 2E1 in Escherichia coli, purification, and spectral and catalytic properties. *Archives of Biochemistry and Biophysics*, **1994**, 312, 59-66	4.1	137
99	Expression of cytochrome P450 3A5 in Escherichia coli: effects of 5R-modification, purification, spectral characterization, reconstitution conditions, and catalytic activities. *Archives of Biochemistry and Biophysics*, **1995**, 317, 374-84	4.1	133
98	Reconstitution of recombinant cytochrome P450 2C10(2C9) and comparison with cytochrome P450 3A4 and other forms: effects of cytochrome P450-P450 and cytochrome P450-b5 interactions. *Archives of Biochemistry and Biophysics*, **1997**, 342, 329-37	4.1	120
97	Formation of indigo by recombinant mammalian cytochrome P450. *Biochemical and Biophysical Research Communications*, **1999**, 265, 469-72	3.4	120
96	Cytochrome P450 1B1: a target for inhibition in anticarcinogenesis strategies. *Mutation Research - Fundamental and Molecular Mechanisms of Mutagenesis*, **2003**, 523-524, 173-82	3.3	116
95	Expression of modified human cytochrome P450 1A1 in Escherichia coli: effects of 5R-substitution, stabilization, purification, spectral characterization, and catalytic properties. *Archives of Biochemistry and Biophysics*, **1994**, 312, 436-46	4.1	104
94	Expression of cytochrome P450 2D6 in Escherichia coli, purification, and spectral and catalytic characterization. *Archives of Biochemistry and Biophysics*, **1995**, 319, 540-50	4.1	100
93	Recombinant human cytochrome P450 1B1 expression in Escherichia coli. *Archives of Biochemistry and Biophysics*, **1998**, 357, 111-20	4.1	87
92	New applications of bacterial systems to problems in toxicology. *Critical Reviews in Toxicology*, **1996**, 26, 551-83	5.7	86

91	Engineering cytochrome p450 enzymes. *Chemical Research in Toxicology*, **2008**, 21, 220-31	4	78
90	Exploring the past and the future of protein evolution with ancestral sequence reconstruction: the RetroRapproach to protein engineering. *Biochemical Journal*, **2017**, 474, 1-19	3.8	68
89	Specificity of 17beta-oestradiol and benzo[a]pyrene oxidation by polymorphic human cytochrome P4501B1 variants substituted at residues 48, 119 and 432. *Xenobiotica*, **2001**, 31, 163-76	2	68
88	Metabolic activation of heterocyclic amines and other procarcinogens in Salmonella typhimurium umu tester strains expressing human cytochrome P4501A1, 1A2, 1B1, 2C9, 2D6, 2E1, and 3A4 and human NADPH-P450 reductase and bacterial O-acetyltransferase. *Mutation Research - Genetic Toxicology and Environmental Mutagenesis*, **2001**, 493, 81-90	3	68
87	Requirements for cytochrome b5 in the oxidation of 7-ethoxycoumarin, chlorzoxazone, aniline, and N-nitrosodimethylamine by recombinant cytochrome P450 2E1 and by human liver microsomes. *Biochemical Pharmacology*, **1996**, 52, 301-9	6	66
86	Activation of procarcinogens by human cytochrome P450 enzymes expressed in Escherichia coli. Simplified bacterial systems for genotoxicity assays. *Carcinogenesis*, **1994**, 15, 2523-9	4.6	65
85	Role of glutamic acid 216 in cytochrome P450 2D6 substrate binding and catalysis. *Biochemistry*, **2003**, 42, 1245-53	3.2	64
84	Effect of tamoxifen on the enzymatic activity of human cytochrome CYP2B6. *Journal of Pharmacology and Experimental Therapeutics*, **2002**, 301, 945-52	4.7	64
83	Bioactivation of phenytoin by human cytochrome P450: characterization of the mechanism and targets of covalent adduct formation. *Chemical Research in Toxicology*, **1997**, 10, 1049-58	4	62
82	Directed evolution of cytochrome P450 enzymes for biocatalysis: exploiting the catalytic versatility of enzymes with relaxed substrate specificity. *Biochemical Journal*, **2015**, 467, 1-15	3.8	58
81	An evaluation of potential mechanism-based inactivation of human drug metabolizing cytochromes P450 by monoamine oxidase inhibitors, including isoniazid. *British Journal of Clinical Pharmacology*, **2006**, 61, 570-84	3.8	58
80	Engineering highly functional thermostable proteins using ancestral sequence reconstruction. *Nature Catalysis*, **2018**, 1, 878-888	36.5	55
79	Direct electrochemistry of enzymes from the cytochrome P450 2C family. *Electrochemistry Communications*, **2005**, 7, 437-442	5.1	50
78	Expression of cytochrome P450 3A7 in Escherichia coli: effects of 5Rmodification and catalytic characterization of recombinant enzyme expressed in bicistronic format with NADPH-cytochrome P450 reductase. *Archives of Biochemistry and Biophysics*, **1997**, 346, 81-90	4.1	49
77	Bioactivation of tamoxifen by recombinant human cytochrome p450 enzymes. *Chemical Research in Toxicology*, **2002**, 15, 614-22	4	47
76	A novel CYP2A6 allele, CYP2A6*23, impairs enzyme function in vitro and in vivo and decreases smoking in a population of Black-African descent. *Pharmacogenetics and Genomics*, **2008**, 18, 67-75	1.9	46
75	Formation of a dihydroxy metabolite of phenytoin in human liver microsomes/cytosol: roles of cytochromes P450 2C9, 2C19, and 3A4. *Drug Metabolism and Disposition*, **2000**, 28, 1361-8	4	46
74	Functional characterisation of an engineered multidomain human P450 2E1 by molecular Lego. *Journal of Biological Inorganic Chemistry*, **2005**, 10, 842-53	3.7	44

73	Identification of the human cytochromes P450 catalysing the rate-limiting pathways of gliclazide elimination. *British Journal of Clinical Pharmacology*, **2007**, 64, 450-7	3.8	43
72	Rabbit CYP4B1 engineered for high-level expression in Escherichia coli: ligand stabilization and processing of the N-terminus and heme prosthetic group. *Archives of Biochemistry and Biophysics*, **2003**, 416, 17-24	4.1	40
71	Twenty years of biochemistry of human P450s: purification, expression, mechanism, and relevance to drugs. *Drug Metabolism and Disposition*, **1998**, 26, 1175-8	4	39
70	The GMC superfamily of oxidoreductases revisited: analysis and evolution of fungal GMC oxidoreductases. *Biotechnology for Biofuels*, **2019**, 12, 118	7.8	38
69	P450 2C18 catalyzes the metabolic bioactivation of phenytoin. *Chemical Research in Toxicology*, **2005**, 18, 1868-75	4	35
68	The evolution of cytochrome P450 enzymes as biocatalysts in drug discovery and development. *Current Topics in Medicinal Chemistry*, **2013**, 13, 2254-80	3	34
67	A shuffled CYP2C library with a high degree of structural integrity and functional versatility. *Archives of Biochemistry and Biophysics*, **2007**, 467, 193-205	4.1	33
66	Molecular modelling of human CYP1B1 substrate interactions and investigation of allelic variant effects on metabolism. *Chemico-Biological Interactions*, **2003**, 145, 281-95	5	33
65	Is the undergraduate research experience (URE) always best?: The power of choice in a bifurcated practical stream for a large introductory biochemistry class. *Biochemistry and Molecular Biology Education*, **2012**, 40, 46-62	1.3	32
64	Characterization of the human cytochrome P450 forms involved in metabolism of tamoxifen to its alpha-hydroxy and alpha,4-dihydroxy derivatives. *Chemical Research in Toxicology*, **2005**, 18, 1611-8	4	32
63	Extending the capabilities of nature's most versatile catalysts: directed evolution of mammalian xenobiotic-metabolizing P450s. *Archives of Biochemistry and Biophysics*, **2007**, 464, 176-86	4.1	31
62	Formation of the indigo precursor indican in genetically engineered tobacco plants and cell cultures. *Plant Biotechnology Journal*, **2007**, 5, 185-91	11.6	30
61	Soluble and membrane-bound Drosophila melanogaster CYP6G1 expressed in Escherichia coli: purification, activity, and binding properties toward multiple pesticides. *Insect Biochemistry and Molecular Biology*, **2013**, 43, 455-65	4.5	29
60	Quantitative whole-cell cytochrome P450 measurement suitable for high-throughput application. *Journal of Biomolecular Screening*, **2008**, 13, 135-41		29
59	Facile production of minor metabolites for drug development using a CYP3A shuffled library. *Metabolic Engineering*, **2011**, 13, 682-93	9.7	28
58	Extending the diversity of cytochrome P450 enzymes by DNA family shuffling. *Gene*, **2007**, 395, 40-8	3.8	28
57	Cytochrome P450 enzyme-mediated degradation of Echinacea alkylamides in human liver microsomes. *Chemico-Biological Interactions*, **2005**, 155, 62-70	5	28
56	Echinacea metabolism and drug interactions: the case for standardization of a complementary medicine. *Life Sciences*, **2009**, 85, 97-106	6.8	27

55	A shuffled CYP1A library shows both structural integrity and functional diversity. *Drug Metabolism and Disposition*, **2007**, 35, 2177-85	4	26
54	Exploiting the versatility of human cytochrome P450 enzymes: the promise of blue roses from biotechnology. *IUBMB Life*, **2001**, 52, 271-7	4.7	26
53	Exploring the potential of xenobiotic-metabolising enzymes as biocatalysts: evolving designer catalysts from polyfunctional cytochrome P450 enzymes. *Clinical and Experimental Pharmacology and Physiology*, **2005**, 32, 147-52	3	24
52	Human cytochrome P450 enzymes expressed in bacteria: reagents to probe molecular interactions in toxicology. *Clinical and Experimental Pharmacology and Physiology*, **1998**, 25, 877-86	3	23
51	Identification, Synthesis, and Biological Evaluation of the Major Human Metabolite of NLRP3 Inflammasome Inhibitor MCC950. *ACS Medicinal Chemistry Letters*, **2016**, 7, 1034-1038	4.3	23
50	Emerging roles for brain drug-metabolizing cytochrome P450 enzymes in neuropsychiatric conditions and responses to drugs. *Drug Metabolism Reviews*, **2016**, 48, 379-404	7	23
49	The concept lens diagram: a new mechanism for presenting biochemistry content in terms of "big ideas". *Biochemistry and Molecular Biology Education*, **2011**, 39, 267-79	1.3	21
48	Cytochrome P450 is present in both ferrous and ferric forms in the resting state within intact Escherichia coli and hepatocytes. *Journal of Biological Chemistry*, **2011**, 286, 40750-9	5.4	21
47	Cytochrome P450-mediated metabolism of haloperidol and reduced haloperidol to pyridinium metabolites. *Chemical Research in Toxicology*, **2006**, 19, 914-20	4	21
46	Cellular energy charge in the heart and liver of the rat. The effects of ethanol and acetaldehyde. *International Journal of Biochemistry & Cell Biology*, **1986**, 18, 1031-8		21
45	Differential expression of cytochrome P450 enzymes from the CYP2C subfamily in the human brain. *Drug Metabolism and Disposition*, **2015**, 43, 353-7	4	20
44	Expression of human cytochrome P450 enzymes in yeast and bacteria and relevance to studies on catalytic specificity. *Toxicology*, **1993**, 82, 21-37	4.4	20
43	What makes P450s work? Searches for answers with known and new P450s. *Drug Metabolism Reviews*, **2000**, 32, 267-81	7	18
42	Differential expression of human cytochrome P450 enzymes from the CYP3A subfamily in the brains of alcoholic subjects and drug-free controls. *Drug Metabolism and Disposition*, **2013**, 41, 1187-94	4	17
41	Assessment of arginine 97 and lysine 72 as determinants of substrate specificity in cytochrome P450 2C9 (CYP2C9). *Drug Metabolism and Disposition*, **2004**, 32, 431-6	4	16
40	Directed evolution reveals requisite sequence elements in the functional expression of P450 2F1 in Escherichia coli. *Chemical Research in Toxicology*, **2012**, 25, 1964-74	4	15
39	Roles of NADPH-P450 reductase in the O-deethylation of 7-ethoxycoumarin by recombinant human cytochrome P450 1B1 variants in Escherichia coli. *Protein Expression and Purification*, **2000**, 20, 73-80	2	15
38	Prospects for Applying Synthetic Biology to Toxicology: Future Opportunities and Current Limitations for the Repurposing of Cytochrome P450 Systems. *Chemical Research in Toxicology*, **2017**, 30, 453-468	4	14

37	Immunotoxic side-effects of drug therapy. *Drug Safety*, **1990**, 5, 168-78	5.1	14
36	Gene expression profiling of cytochromes P450, ABC transporters and their principal transcription factors in the amygdala and prefrontal cortex of alcoholics, smokers and drug-free controls by qRT-PCR. *Xenobiotica*, **2015**, 45, 1129-37	2	13
35	Expression of CYP2E1 and CYP2U1 proteins in amygdala and prefrontal cortex: influence of alcoholism and smoking. *Alcoholism: Clinical and Experimental Research*, **2015**, 39, 790-7	3.7	13
34	Determinants of thermostability in the cytochrome P450 fold. *Biochimica Et Biophysica Acta - Proteins and Proteomics*, **2018**, 1866, 97-115	4	12
33	Membrane integration of recombinant human P450 forms. *Xenobiotica*, **2009**, 39, 495-507	2	11
32	Phenacetin O-deethylation by human liver microsomes: kinetics and propranolol inhibition. *Xenobiotica*, **1988**, 18, 95-104	2	11
31	Re-engineering of CYP2C9 to probe acid-base substrate selectivity. *Drug Metabolism and Disposition* , **2008**, 36, 1992-7	4	10
30	Direct electrochemistry of human and rat NADPH cytochrome P450 reductase. *Electrochemistry Communications*, **2006**, 8, 1845-1849	5.1	10
29	Computational tools for directed evolution: a comparison of prospective and retrospective strategies. *Methods in Molecular Biology*, **2014**, 1179, 315-33	1.4	10
28	Metabolism of the major Echinacea alkylamide N-isobutyldodeca-2E,4E,8Z,10Z-tetraenamide by human recombinant cytochrome P450 enzymes and human liver microsomes. *Phytotherapy Research*, **2010**, 24, 1195-201	6.7	9
27	Modified nicotine metabolism in transgenic tobacco plants expressing the human cytochrome P450 2A6 cDNA. *FEBS Letters*, **2005**, 579, 2480-4	3.8	9
26	Recombinant expression and characterization of Lucilia cuprina CYP6G3: Activity and binding properties toward multiple pesticides. *Insect Biochemistry and Molecular Biology*, **2017**, 90, 14-22	4.5	8
25	ReX: A suite of computational tools for the design, visualization, and analysis of chimeric protein libraries. *BioTechniques*, **2016**, 60, 91-4	2.5	8
24	In silico characterization of protein chimeras: relating sequence and function within the same fold. *Proteins: Structure, Function and Bioinformatics*, **2009**, 77, 111-20	4.2	7
23	Chemical Defense and Exploitation. Biotransformation of Xenobiotics by Cytochrome P450 Enzymes **2007**, 477-560		7
22	Rational evolution of the cofactor-binding site of cytochrome P450 reductase yields variants with increased activity towards specific cytochrome P450 enzymes. *FEBS Journal*, **2019**, 286, 4473-4493	5.7	6
21	STAR: predicting recombination sites from amino acid sequence. *BMC Bioinformatics*, **2006**, 7, 437	3.6	6
20	Structure of an ancestral mammalian family 1B1 cytochrome P450 with increased thermostability. *Journal of Biological Chemistry*, **2020**, 295, 5640-5653	5.4	5

19	Measurement of P450 difference spectra using intact cells. *Methods in Molecular Biology*, **2013**, 987, 189-204	1.4	5
18	The dark side of a Rdetoxification Rmechanism. *Trends in Pharmacological Sciences*, **2001**, 22, 11	13.2	5
17	Physical partitioning as the major source of metoprolol uptake by hepatic microsomes. *Biochemical Pharmacology*, **1987**, 36, 4167-8	6	5
16	Restriction enzyme-mediated DNA family shuffling. *Methods in Molecular Biology*, **2014**, 1179, 175-87	1.4	5
15	Identifying and engineering ancient variants of enzymes using Graphical Representation of Ancestral Sequence Predictions (GRASP)		5
14	Oxygen Surrogate Systems for Supporting Human Drug-Metabolizing Cytochrome P450 Enzymes. *Drug Metabolism and Disposition*, **2020**, 48, 432-437	4	4
13	DNA shuffling of cytochrome P450 enzymes. *Methods in Molecular Biology*, **2013**, 987, 177-88	1.4	4
12	SeqScrub: a web tool for automatic cleaning and annotation of FASTA file headers for bioinformatic applications. *BioTechniques*, **2019**, 67, 50-54	2.5	3
11	Evaluation of recombinant cytochromes P450 activity in metabolic pathways. *Drug Metabolism and Disposition*, **2003**, 31, 145-6; author reply 146	4	3
10	Use of heterologously-expressed cytochrome P450 and glutathione transferase enzymes in toxicity assays. *Toxicology*, **2002**, 181-182, 261-4	4.4	3
9	An Inexpensive, Efficient Alternative to NADPH to Support Catalysis by Thermostable Cytochrome P450 Enzymes. *ChemCatChem*, **2020**, 12, 1750-1761	5.2	2
8	In vitro metabolism of the anti-inflammatory clerodane diterpenoid polyandric acid A and its hydrolysis product by human liver microsomes and recombinant cytochrome P450 and UDP-glucuronosyltransferase enzymes. *Xenobiotica*, **2017**, 47, 461-469	2	1
7	Bacterial expression of two human aryl sulfotransferases. *Chemico-Biological Interactions*, **1998**, 109, 137-41	5	1
6	Opposites attract, or do they? Rethinking the P450 2D6 pharmacophore model. *Trends in Pharmacological Sciences*, **2002**, 23, 501	13.2	1
5	Using the Evolutionary History of Proteins to Engineer Insertion-Deletion Mutants from Robust, Ancestral Templates Using Graphical Representation of Ancestral Sequence Predictions (GRASP). *Methods in Molecular Biology*, **2022**, 2397, 85-110	1.4	1
4	Resurrection and characterization of ancestral CYP11A1 enzymes. *FEBS Journal*, **2021**, 288, 6510-6527	5.7	1
3	Engineering Thermostable CYP2D Enzymes for Biocatalysis Using Combinatorial Libraries of Ancestors for Directed Evolution (CLADE). *ChemCatChem*, **2018**, 11, 841	5.2	1
2	Ancestral sequence reconstruction of a cytochrome P450 family involved in chemical defence reveals the functional evolution of a promiscuous, xenobiotic-metabolizing enzyme in vertebrates. *Molecular Biology and Evolution*,	8.3	1

1 DNA–protein adducts: hijacking one repair process to examine another. *Trends in Pharmacological Sciences*, **2002**, 23, 210 13.2