Philipp Holliger

List of Publications by Citations

73 papers	5,700 citations	34 h-index	75 g-index
102 ext. papers	6,428 ext. citations	14.5 avg, IF	6.01 L-index

#	Paper	IF	Citations
73	Engineered antibody fragments and the rise of single domains. *Nature Biotechnology*, **2005**, 23, 1126-36	44.5	1456
72	Synthetic genetic polymers capable of heredity and evolution. *Science*, **2012**, 336, 341-4	33.3	515
71	Ribozyme-catalyzed transcription of an active ribozyme. *Science*, **2011**, 332, 209-12	33.3	280
70	Mimicking somatic hypermutation: affinity maturation of antibodies displayed on bacteriophage using a bacterial mutator strain. *Journal of Molecular Biology*, **1996**, 260, 359-68	6.5	188
69	Catalysts from synthetic genetic polymers. *Nature*, **2015**, 518, 427-30	50.4	187
68	In-ice evolution of RNA polymerase ribozyme activity. *Nature Chemistry*, **2013**, 5, 1011-8	17.6	177
67	Crystal structure of a diabody, a bivalent antibody fragment. *Structure*, **1994**, 2, 1217-26	5.2	174
66	The C-terminal domain of TolA is the coreceptor for filamentous phage infection of E. coli. *Cell*, **1997**, 90, 351-60	56.2	165
65	Generic expansion of the substrate spectrum of a DNA polymerase by directed evolution. *Nature Biotechnology*, **2004**, 22, 755-9	44.5	152
64	The XNA world: progress towards replication and evolution of synthetic genetic polymers. *Current Opinion in Chemical Biology*, **2012**, 16, 245-52	9.7	143
63	Molecular breeding of polymerases for amplification of ancient DNA. *Nature Biotechnology*, **2007**, 25, 939-43	44.5	99
62	Crystal structure of the two N-terminal domains of g3p from filamentous phage fd at 1.9 A: evidence for conformational lability. *Journal of Molecular Biology*, **1999**, 288, 649-57	6.5	93
61	Towards XNA nanotechnology: new materials from synthetic genetic polymers. *Trends in Biotechnology*, **2014**, 32, 321-8	15.1	91
60	Ice as a protocellular medium for RNA replication. *Nature Communications*, **2010**, 1, 76	17.4	89
59	CyDNA: synthesis and replication of highly Cy-dye substituted DNA by an evolved polymerase. *Journal of the American Chemical Society*, **2010**, 132, 5096-104	16.4	87
58	Freeze-thaw cycles as drivers of complex ribozyme assembly. *Nature Chemistry*, **2015**, 7, 502-8	17.6	83
57	Selection of 2′-deoxy-2′-fluoroarabinonucleotide (FANA) aptamers that bind HIV-1 reverse transcriptase with picomolar affinity. *Nucleic Acids Research*, **2015**, 43, 9587-99	20.1	80

56	Directed evolution of DNA polymerase, RNA polymerase and reverse transcriptase activity in a single polypeptide. *Journal of Molecular Biology*, **2006**, 361, 537-50	6.5	80
55	A short adaptive path from DNA to RNA polymerases. *Proceedings of the National Academy of Sciences of the United States of America*, **2012**, 109, 8067-72	11.5	78
54	A conserved infection pathway for filamentous bacteriophages is suggested by the structure of the membrane penetration domain of the minor coat protein g3p from phage fd. *Structure*, **1997**, 5, 265-75	5.2	71
53	Engineering bispecific antibodies. *Current Opinion in Biotechnology*, **1993**, 4, 446-9	11.4	71
52	Specific killing of lymphoma cells by cytotoxic T-cells mediated by a bispecific diabody. *Protein Engineering, Design and Selection*, **1996**, 9, 299-305	1.9	69
51	Retargeting serum immunoglobulin with bispecific diabodies. *Nature Biotechnology*, **1997**, 15, 632-6	44.5	66
50	Evolving a polymerase for hydrophobic base analogues. *Journal of the American Chemical Society*, **2009**, 131, 14827-37	16.4	64
49	Polymerase engineering: towards the encoded synthesis of unnatural biopolymers. *Chemical Communications*, **2009**, 4619-31	5.8	63
48	Ribozyme-catalysed RNA synthesis using triplet building blocks. *ELife*, **2018**, 7,	8.9	55
47	Molecular breeding of polymerases for resistance to environmental inhibitors. *Nucleic Acids Research*, **2011**, 39, e51	20.1	51
46	Exploring the Chemistry of Genetic Information Storage and Propagation through Polymerase Engineering. *Accounts of Chemical Research*, **2017**, 50, 1079-1087	24.3	46
45	A synthetic genetic polymer with an uncharged backbone chemistry based on alkyl phosphonate nucleic acids. *Nature Chemistry*, **2019**, 11, 533-542	17.6	45
44	Simple peptides derived from the ribosomal core potentiate RNA polymerase ribozyme function. *Nature Chemistry*, **2017**, 9, 325-332	17.6	43
43	Nanostructures from Synthetic Genetic Polymers. *ChemBioChem*, **2016**, 17, 1107-10	3.8	38
42	Site-directed mutagenesis of bovine pancreatic ribonuclease: lysine-41 and aspartate-121. *FEBS Letters*, **1991**, 281, 275-7	3.8	38
41	Nucleic acids: function and potential for abiogenesis. *Quarterly Reviews of Biophysics*, **2017**, 50, e4	7	37
40	Towards applications of synthetic genetic polymers in diagnosis and therapy. *Current Opinion in Chemical Biology*, **2014**, 22, 79-84	9.7	37
39	Engineering and application of polymerases for synthetic genetics. *Current Opinion in Biotechnology* , **2017**, 48, 168-179	11.4	32

38	Directed evolution of artificial enzymes (XNAzymes) from diverse repertoires of synthetic genetic polymers. *Nature Protocols*, **2015**, 10, 1625-42	18.8	31
37	Synthetic polymers and their potential as genetic materials. *BioEssays*, **2013**, 35, 113-22	4.1	31
36	A novel emulsion mixture for in vitro compartmentalization of transcription and translation in the rabbit reticulocyte system. *Protein Engineering, Design and Selection*, **2004**, 17, 201-4	1.9	31
35	A synthetic approach to abiogenesis. *Nature Methods*, **2014**, 11, 495-8	21.6	29
34	Subunit disassembly and inhibition of TNF by a semi-synthetic bicyclic peptide. *Protein Engineering, Design and Selection*, **2015**, 28, 45-52	1.9	27
33	Beyond DNA and RNA: The Expanding Toolbox of Synthetic Genetics. *Cold Spring Harbor Perspectives in Biology*, **2019**, 11,	10.2	25
32	Isoguanine and 5-methyl-isocytosine bases, in vitro and in vivo. *Chemistry - A European Journal*, **2015** , 21, 5009-22	4.8	25
31	Structures of an apo and a binary complex of an evolved archeal B family DNA polymerase capable of synthesising highly cy-dye labelled DNA. *PLoS ONE*, **2013**, 8, e70892	3.7	25
30	Isolation of receptor-ligand pairs by capture of long-lived multivalent interaction complexes. *Proceedings of the National Academy of Sciences of the United States of America*, **2002**, 99, 8530-5	11.5	25
29	Modified nucleic acids: replication, evolution, and next-generation therapeutics. *BMC Biology*, **2020**, 18, 112	7.3	25
28	Darwinian chemistry: towards the synthesis of a simple cell. *Molecular BioSystems*, **2009**, 5, 686-94		23
27	Chemical fidelity of an RNA polymerase ribozyme. *Chemical Science*, **2013**, 4, 2804	9.4	22
26	Random-sequence genetic oligomer pools display an innate potential for ligation and recombination. *ELife*, **2018**, 7,	8.9	22
25	Discovery and evolution of RNA and XNA reverse transcriptase function and fidelity. *Nature Chemistry*, **2020**, 12, 683-690	17.6	22
24	Non-canonical 3′5′extension of RNA with prebiotically plausible ribonucleoside 2′3′cyclic phosphates. *Journal of the American Chemical Society*, **2014**, 136, 5193-6	16.4	21
23	Enzymatic Synthesis of Nucleic Acids with Defined Regioisomeric 2′5′Linkages. *Angewandte Chemie - International Edition*, **2015**, 54, 15570-3	16.4	18
22	Engineering high affinity superantigens by phage display. *Journal of Molecular Biology*, **2005**, 347, 107-20	6.5	18
21	Compartmentalized Self-Tagging for In Vitro-Directed Evolution of XNA Polymerases. *Current Protocols in Nucleic Acid Chemistry*, **2014**, 57, 9.9.1-18	0.5	17

20	Methods for generating multivalent and bispecific antibody fragments. *Methods in Enzymology*, **2000**, 326, 461-79	1.7	17
19	Selection of 2′-Deoxy-2′-Fluoroarabino Nucleic Acid (FANA) Aptamers That Bind HIV-1 Integrase with Picomolar Affinity. *ACS Chemical Biology*, **2019**, 14, 2166-2175	4.9	16
18	Compartmentalized self-replication: a novel method for the directed evolution of polymerases and other enzymes. *Methods in Molecular Biology*, **2007**, 352, 237-48	1.4	15
17	Non-Enzymatic Assembly of a Minimized RNA Polymerase Ribozyme. *ChemSystemsChem*, **2019**, 1, 1-4	3.1	14
16	Selecting Fully-Modified XNA Aptamers Using Synthetic Genetics. *Current Protocols in Chemical Biology*, **2018**, 10, e44	1.8	14
15	Engineering antibodies for the clinic. *Cancer and Metastasis Reviews*, **1999**, 18, 411-9	9.6	13
14	Autocrine costimulation: tumor-specific CD28-mediated costimulation of T cells by in situ production of a bifunctional B7-anti-CEA diabody fusion protein. *Cancer Gene Therapy*, **2002**, 9, 275-81	5.4	12
13	Reversible fluorescence photoswitching in DNA. *Journal of Physical Chemistry B*, **2012**, 116, 10290-3	3.4	11
12	CD3X anti-nitrophenyl bispecific diabodies: universal immunotherapeutic tools for retargeting T cells to tumors. *International Journal of Cancer*, **1999**, 82, 700-8	7.5	11
11	Effect of a Hydrogen Bonding Carboxamide Group on Universal Bases. *Collection of Czechoslovak Chemical Communications*, **2006**, 71, 899-911		9
10	A polymerase engineered for bisulfite sequencing. *Nucleic Acids Research*, **2015**, 43, e155	20.1	7
9	New chemistries and enzymes for synthetic genetics. *Current Opinion in Biotechnology*, **2021**, 74, 129-136	11.4	5
8	Structural Studies of HNA Substrate Specificity in Mutants of an Archaeal DNA Polymerase Obtained by Directed Evolution. *Biomolecules*, **2020**, 10,	5.9	4
7	Direct Mapping of Higher-Order RNA Interactions by SHAPE-JuMP. *Biochemistry*, **2021**, 60, 1971-1982	3.2	3
6	Expression of antibody fragments in Pichia pastoris. *Methods in Molecular Biology*, **2002**, 178, 349-57	1.4	2
5	Hydrophobic-cationic peptides enhance RNA polymerase ribozyme activity by accretion		2
4	Enzymatische Synthese von Nukleinsäuren mit definierten regioisomeren 2′-5′-Verknüpfungen. *Angewandte Chemie*, **2015**, 127, 15791-15794	3.6	1
3	Innate potential of random genetic oligomer pools for recombination		1

2 RNA Replication and the RNA Polymerase Ribozyme **2021**, 359-386 0

1 Self-Replication in Chemistry and Biology439-466