

Samuel K Lai

List of Publications by Year in descending order

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85
papers

8,010
citations

109321

35
h-index

58581

82
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89
all docs

89
docs citations

89
times ranked

9142
citing authors

#	ARTICLE	IF	CITATIONS
1	The biophysical principles underpinning muco-trapping functions of antibodies. <i>Human Vaccines and Immunotherapeutics</i> , 2022, 18, 1-10.	3.3	9
2	A PBPK model recapitulates early kinetics of anti-PEG antibody-mediated clearance of PEG-liposomes. <i>Journal of Controlled Release</i> , 2022, 343, 518-527.	9.9	5
3	Nano-trapping CXCL13 reduces regulatory B cells in tumor microenvironment and inhibits tumor growth. <i>Journal of Controlled Release</i> , 2022, 343, 303-313.	9.9	11
4	Modeling insights into SARS-CoV-2 respiratory tract infections prior to immune protection. <i>Biophysical Journal</i> , 2022, 121, 1619-1631.	0.5	17
5	Pre-treatment with high molecular weight free PEG effectively suppresses anti-PEG antibody induction by PEG-liposomes in mice. <i>Journal of Controlled Release</i> , 2021, 329, 774-781.	9.9	20
6	Learning from past failures: Challenges with monoclonal antibody therapies for COVID-19. <i>Journal of Controlled Release</i> , 2021, 329, 87-95.	9.9	21
7	Challenges and opportunities for antiviral monoclonal antibodies as COVID-19 therapy. <i>Advanced Drug Delivery Reviews</i> , 2021, 169, 100-117.	13.7	63
8	Engineering sperm-binding IgG antibodies for the development of an effective nonhormonal female contraception. <i>Science Translational Medicine</i> , 2021, 13, .	12.4	4
9	Bispecific binder redirected lentiviral vector enables in vivo engineering of CAR-T cells. , 2021, 9, e002737.		20
10	Anaphylaxis to Pfizer/BioNTech mRNA COVID-19 Vaccine in a Patient With Clinically Confirmed PEG Allergy. <i>Frontiers in Allergy</i> , 2021, 2, 715844.	2.8	38
11	High MW polyethylene glycol prolongs circulation of pegloticase in mice with anti-PEG antibodies. <i>Journal of Controlled Release</i> , 2021, 338, 804-812.	9.9	8
12	Experimental Data and PBPK Modeling Quantify Antibody Interference in PEGylated Drug Carrier Delivery. <i>Bulletin of Mathematical Biology</i> , 2021, 83, 123.	1.9	2
13	Hexavalent sperm-binding IgG antibody released from vaginal film for development of potent on-demand nonhormonal female contraception. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, .	7.1	7
14	Structure of an anti-PEG antibody reveals an open ring that captures highly flexible PEG polymers. <i>Communications Chemistry</i> , 2020, 3, .	4.5	40
15	Engineering tetravalent IgGs with enhanced agglutination potencies for trapping vigorously motile sperm in mucin matrix. <i>Acta Biomaterialia</i> , 2020, 117, 226-234.	8.3	4
16	Engineering monoclonal antibody-based contraception and multipurpose prevention technologies. <i>Biology of Reproduction</i> , 2020, 103, 275-285.	2.7	23
17	Challenges & opportunities for phage-based in situ microbiome engineering in the gut. <i>Journal of Controlled Release</i> , 2020, 326, 106-119.	9.9	27
18	Antibody-mediated trapping in biological hydrogels is governed by sugar-sugar hydrogen bonds. <i>Acta Biomaterialia</i> , 2020, 107, 91-101.	8.3	11

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19	LPS-binding IgG arrests actively motile Salmonella Typhimurium in gastrointestinal mucus. <i>Mucosal Immunology</i> , 2020, 13, 814-823.	6.0	22
20	Efficient and Highly Specific Gene Transfer Using Mutated Lentiviral Vectors Redirected with Bispecific Antibodies. <i>MBio</i> , 2020, 11, .	4.1	4
21	Tuning Barrier Properties of Biological Hydrogels. <i>ACS Applied Bio Materials</i> , 2020, 3, 2875-2890.	4.6	13
22	The cervicovaginal mucus barrier to HIV-1 is diminished in bacterial vaginosis. <i>PLoS Pathogens</i> , 2020, 16, e1008236.	4.7	46
23	Immersive Research Experiences for High School Students Aimed at Promoting Diversity and Visibility in Pharmacy Education. <i>American Journal of Pharmaceutical Education</i> , 2020, 84, ajpe7589.	2.1	11
24	Pretargeted delivery of PEG-coated drug carriers to breast tumors using multivalent, bispecific antibody against polyethylene glycol and HER2. <i>Nanomedicine: Nanotechnology, Biology, and Medicine</i> , 2019, 21, 102076.	3.3	15
25	The Cervicovaginal Microbiota-Host Interaction Modulates Chlamydia trachomatis Infection. <i>MBio</i> , 2019, 10, .	4.1	107
26	Modeling Barrier Properties of Intestinal Mucus Reinforced with IgG and Secretory IgA against Motile Bacteria. <i>ACS Infectious Diseases</i> , 2019, 5, 1570-1580.	3.8	20
27	Antibody-Mediated Immobilization of Virions in Mucus. <i>Bulletin of Mathematical Biology</i> , 2019, 81, 4069-4099.	1.9	8
28	Limited processivity of single motors improves overall transport flux of self-assembled motor-cargo complexes. <i>Physical Review E</i> , 2019, 100, 022408.	2.1	2
29	Overcoming anti-PEG antibody mediated accelerated blood clearance of PEGylated liposomes by pre-infusion with high molecular weight free PEG. <i>Journal of Controlled Release</i> , 2019, 311-312, 138-146.	9.9	53
30	Robust antigen-specific tuning of the nanoscale barrier properties of biogels using matrix-associating IgG and IgM antibodies. <i>Acta Biomaterialia</i> , 2019, 89, 95-103.	8.3	5
31	Engineering Polymer-Binding Bispecific Antibodies for Enhanced Pretargeted Delivery of Nanoparticles to Mucus-Covered Epithelium. <i>Angewandte Chemie - International Edition</i> , 2019, 58, 5604-5608.	13.8	15
32	Engineering Polymer-Binding Bispecific Antibodies for Enhanced Pretargeted Delivery of Nanoparticles to Mucus-Covered Epithelium. <i>Angewandte Chemie</i> , 2019, 131, 5660-5664.	2.0	3
33	ZMapp Reinforces the Airway Mucosal Barrier Against Ebola Virus. <i>Journal of Infectious Diseases</i> , 2018, 218, 901-910.	4.0	26
34	Accelerated Clearance of Ultrasound Contrast Agents Containing Polyethylene Glycol is Associated with the Generation of Anti-Polyethylene Glycol Antibodies. <i>Ultrasound in Medicine and Biology</i> , 2018, 44, 1266-1280.	1.5	39
35	Physician Awareness of Immune Responses to Polyethylene Glycol-Drug Conjugates. <i>Clinical and Translational Science</i> , 2018, 11, 162-165.	3.1	37
36	PEGylation for enhancing nanoparticle diffusion in mucus. <i>Advanced Drug Delivery Reviews</i> , 2018, 124, 125-139.	13.7	273

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37	Technological strategies to estimate and control diffusive passage times through the mucus barrier in mucosal drug delivery. <i>Advanced Drug Delivery Reviews</i> , 2018, 124, 64-81.	13.7	38
38	Herpes simplex virus-binding IgG traps HSV in human cervicovaginal mucus across the menstrual cycle and diverse vaginal microbial composition. <i>Mucosal Immunology</i> , 2018, 11, 1477-1486.	6.0	29
39	Convolutional neural networks automate detection for tracking of submicron-scale particles in 2D and 3D. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2018, 115, 9026-9031.	7.1	138
40	A minimal physiologically based pharmacokinetic model that predicts anti-PEG IgG-mediated clearance of PEGylated drugs in human and mouse. <i>Journal of Controlled Release</i> , 2018, 284, 171-178.	9.9	49
41	Influenza-binding antibodies immobilise influenza viruses in fresh human airway mucus. <i>European Respiratory Journal</i> , 2017, 49, 1601709.	6.7	45
42	Engineering Well-Characterized PEG-Coated Nanoparticles for Elucidating Biological Barriers to Drug Delivery. <i>Methods in Molecular Biology</i> , 2017, 1530, 125-137.	0.9	14
43	Stereolithography-Based 3D Printed "Pillar Plates" that Minimizes Fluid Transfers During Enzyme Linked Immunosorbent Assays. <i>Annals of Biomedical Engineering</i> , 2017, 45, 982-989.	2.5	1
44	Cross-Reactivity of Select PEG-Binding Antibodies to Other Polymers Containing a C-C-O Backbone. <i>ACS Biomaterials Science and Engineering</i> , 2017, 3, 1605-1615.	5.2	17
45	Pretargeting with bispecific fusion proteins facilitates delivery of nanoparticles to tumor cells with distinct surface antigens. <i>Journal of Controlled Release</i> , 2017, 255, 73-80.	9.9	15
46	A blueprint for robust crosslinking of mobile species in biogels with weakly adhesive molecular anchors. <i>Nature Communications</i> , 2017, 8, 833.	12.8	29
47	Multivalent interactions between streptavidin-based pretargeting fusion proteins and cell receptors impede efficient internalization of biotinylated nanoparticles. <i>Acta Biomaterialia</i> , 2017, 63, 181-189.	8.3	5
48	Notice of Removal: Accelerated clearance of ultrasound contrast agents containing polyethylene glycol (PEG) is associated with a PEG-specific immune response. , 2017, , .		0
49	The Young Innovators Program at the Eshelman Institute for Innovation: a case study examining the role of a professional pharmacy school in enhancing STEM pursuits among secondary school students. <i>International Journal of STEM Education</i> , 2017, 4, 17.	5.0	7
50	Mucus-Penetrating Nanosuspensions for Enhanced Delivery of Poorly Soluble Drugs to Mucosal Surfaces. <i>Advanced Healthcare Materials</i> , 2016, 5, 2745-2750.	7.6	31
51	The Binding Site Barrier Elicited by Tumor-Associated Fibroblasts Interferes Disposition of Nanoparticles in Stroma-Vessel Type Tumors. <i>ACS Nano</i> , 2016, 10, 9243-9258.	14.6	161
52	Anti-PEG antibodies alter the mobility and biodistribution of densely PEGylated nanoparticles in mucus. <i>Acta Biomaterialia</i> , 2016, 43, 61-70.	8.3	50
53	Analysis of Pre-existing IgG and IgM Antibodies against Polyethylene Glycol (PEG) in the General Population. <i>Analytical Chemistry</i> , 2016, 88, 11804-11812.	6.5	240
54	Using Computational Modeling To Optimize the Design of Antibodies That Trap Viruses in Mucus. <i>ACS Infectious Diseases</i> , 2016, 2, 82-92.	3.8	29

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55	Diffusion of Immunoglobulin G in Shed Vaginal Epithelial Cells and in Cell-Free Regions of Human Cervicovaginal Mucus. <i>PLoS ONE</i> , 2016, 11, e0158338.	2.5	17
56	Modeling of Virion Collisions in Cervicovaginal Mucus Reveals Limits on Agglutination as the Protective Mechanism of Secretory Immunoglobulin A. <i>PLoS ONE</i> , 2015, 10, e0131351.	2.5	13
57	Anti-PEG immunity: emergence, characteristics, and unaddressed questions. <i>Wiley Interdisciplinary Reviews: Nanomedicine and Nanobiotechnology</i> , 2015, 7, 655-677.	6.1	425
58	Addressing challenges of heterogeneous tumor treatment through bispecific protein-mediated pretargeted drug delivery. <i>Journal of Controlled Release</i> , 2015, 220, 715-726.	9.9	19
59	Minimizing biases associated with tracking analysis of submicron particles in heterogeneous biological fluids. <i>Journal of Controlled Release</i> , 2015, 220, 37-43.	9.9	18
60	Enhanced Trapping of HIV-1 by Human Cervicovaginal Mucus Is Associated with <i>Lactobacillus crispatus</i> -Dominant Microbiota. <i>MBio</i> , 2015, 6, e01084-15.	4.1	141
61	Modeling Neutralization Kinetics of HIV by Broadly Neutralizing Monoclonal Antibodies in Genital Secretions Coating the Cervicovaginal Mucosa. <i>PLoS ONE</i> , 2014, 9, e100598.	2.5	27
62	Cancer Therapy: Vaginal Delivery of Paclitaxel via Nanoparticles with Non-Mucoadhesive Surfaces Suppresses Cervical Tumor Growth (<i>Adv. Healthcare Mater.</i> 7/2014). <i>Advanced Healthcare Materials</i> , 2014, 3, 1120-1120.	7.6	0
63	Transient Antibody-Mucin Interactions Produce a Dynamic Molecular Shield against Viral Invasion. <i>Biophysical Journal</i> , 2014, 106, 2028-2036.	0.5	49
64	Influence of Vaginal Microbiota on the Diffusional Barrier Properties of Cervicovaginal Mucus. <i>AIDS Research and Human Retroviruses</i> , 2014, 30, A234-A234.	1.1	3
65	Evading Immune Cell Uptake and Clearance Requires PEG Grafting at Densities Substantially Exceeding the Minimum for Brush Conformation. <i>Molecular Pharmaceutics</i> , 2014, 11, 1250-1258.	4.6	216
66	Nanoparticle penetration of human cervicovaginal mucus: The effect of polyvinyl alcohol. <i>Journal of Controlled Release</i> , 2014, 192, 202-208.	9.9	99
67	Intraperitoneal delivery of paclitaxel by poly(ether-anhydride) microspheres effectively suppresses tumor growth in a murine metastatic ovarian cancer model. <i>Drug Delivery and Translational Research</i> , 2014, 4, 203-209.	5.8	12
68	Lung gene therapy with highly compacted DNA nanoparticles that overcome the mucus barrier. <i>Journal of Controlled Release</i> , 2014, 178, 8-17.	9.9	160
69	The Microstructure and Bulk Rheology of Human Cervicovaginal Mucus Are Remarkably Resistant to Changes in pH. <i>Biomacromolecules</i> , 2013, 14, 4429-4435.	5.4	48
70	Non-degradative intracellular trafficking of highly compacted polymeric DNA nanoparticles. <i>Journal of Controlled Release</i> , 2012, 158, 102-107.	9.9	40
71	Mucoadhesive Nanoparticles May Disrupt the Protective Human Mucus Barrier by Altering Its Microstructure. <i>PLoS ONE</i> , 2011, 6, e21547.	2.5	90
72	Drug carrier nanoparticles that penetrate human chronic rhinosinusitis mucus. <i>Biomaterials</i> , 2011, 32, 6285-6290.	11.4	117

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73	Rapid transport of muco-inert nanoparticles in cystic fibrosis sputum treated with N-acetyl cysteine. <i>Nanomedicine</i> , 2011, 6, 365-375.	3.3	147
74	Nanoparticles reveal that human cervicovaginal mucus is riddled with pores larger than viruses. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2010, 107, 598-603.	7.1	321
75	Human Immunodeficiency Virus Type 1 Is Trapped by Acidic but Not by Neutralized Human Cervicovaginal Mucus. <i>Journal of Virology</i> , 2009, 83, 11196-11200.	3.4	217
76	Micro- and macrorheology of mucus. <i>Advanced Drug Delivery Reviews</i> , 2009, 61, 86-100.	13.7	919
77	Mucus-penetrating nanoparticles for drug and gene delivery to mucosal tissues. <i>Advanced Drug Delivery Reviews</i> , 2009, 61, 158-171.	13.7	1,432
78	Altering Mucus Rheology to "Solidify" Human Mucus at the Nanoscale. <i>PLoS ONE</i> , 2009, 4, e4294.	2.5	120
79	Characterization of the intracellular dynamics of a non-degradative pathway accessed by polymer nanoparticles. <i>Journal of Controlled Release</i> , 2008, 125, 107-111.	9.9	63
80	Real-Time Multiple Particle Tracking of Gene Nanocarriers in Complex Biological Environments. , 2008, 434, 81-97.		22
81	Rapid transport of large polymeric nanoparticles in fresh undiluted human mucus. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2007, 104, 1482-1487.	7.1	875
82	Privileged delivery of polymer nanoparticles to the perinuclear region of live cells via a non-clathrin, non-degradative pathway. <i>Biomaterials</i> , 2007, 28, 2876-2884.	11.4	237
83	Quantifying the intracellular transport of viral and nonviral gene vectors in primary neurons. <i>Experimental Biology and Medicine</i> , 2007, 232, 461-9.	2.4	37
84	Gene delivery to differentiated neurotypic cells with RGD and HIV Tat peptide functionalized polymeric nanoparticles. <i>Biomaterials</i> , 2006, 27, 5143-5150.	11.4	144
85	Characterization of polydimethylsiloxane elastomer degradation via cross-linker hydrolysis. <i>Polymer</i> , 2005, 46, 4204-4211.	3.8	27