Matthew S Macauley

List of Publications by Citations

84 papers	4,779 citations	34 h-index	68 g-index
96 ext. papers	5,777 ext. citations	8.8 avg, IF	5.75 L-index

#	Paper	IF	Citations
84	Siglec-mediated regulation of immune cell function in disease. *Nature Reviews Immunology*, **2014**, 14, 653-66	36.5	571
83	A potent mechanism-inspired O-GlcNAcase inhibitor that blocks phosphorylation of tau in vivo. *Nature Chemical Biology*, **2008**, 4, 483-90	11.7	464
82	Increasing O-GlcNAc slows neurodegeneration and stabilizes tau against aggregation. *Nature Chemical Biology*, **2012**, 8, 393-9	11.7	375
81	O-GlcNAcase uses substrate-assisted catalysis: kinetic analysis and development of highly selective mechanism-inspired inhibitors. *Journal of Biological Chemistry*, **2005**, 280, 25313-22	5.4	289
80	Drosophila O-GlcNAc transferase (OGT) is encoded by the Polycomb group (PcG) gene, super sex combs (sxc). *Proceedings of the National Academy of Sciences of the United States of America*, **2009**, 106, 13427-32	11.5	184
79	Structure and mechanism of a bacterial beta-glucosaminidase having O-GlcNAcase activity. *Nature Structural and Molecular Biology*, **2006**, 13, 365-71	17.6	164
78	Holes in the Glycan Shield of the Native HIV Envelope Are a Target of Trimer-Elicited Neutralizing Antibodies. *Cell Reports*, **2016**, 16, 2327-38	10.6	163
77	Analysis of PUGNAc and NAG-thiazoline as transition state analogues for human O-GlcNAcase: mechanistic and structural insights into inhibitor selectivity and transition state poise. *Journal of the American Chemical Society*, **2007**, 129, 635-44	16.4	142
76	Antigenic liposomes displaying CD22 ligands induce antigen-specific B cell apoptosis. *Journal of Clinical Investigation*, **2013**, 123, 3074-83	15.9	136
75	Transfection of microRNA Mimics Should Be Used with Caution. *Frontiers in Genetics*, **2015**, 6, 340	4.5	103
74	Identification of Asp174 and Asp175 as the key catalytic residues of human O-GlcNAcase by functional analysis of site-directed mutants. *Biochemistry*, **2006**, 45, 3835-44	3.2	100
73	Transcriptional programs of lymphoid tissue capillary and high endothelium reveal control mechanisms for lymphocyte homing. *Nature Immunology*, **2014**, 15, 982-95	19.1	99
72	Hypersialylation in Cancer: Modulation of Inflammation and Therapeutic Opportunities. *Cancers*, **2018**, 10,	6.6	95
71	Elevation of global O-GlcNAc levels in 3T3-L1 adipocytes by selective inhibition of O-GlcNAcase does not induce insulin resistance. *Journal of Biological Chemistry*, **2008**, 283, 34687-95	5.4	93
70	Increasing O-GlcNAc levels: An overview of small-molecule inhibitors of O-GlcNAcase. *Biochimica Et Biophysica Acta - General Subjects*, **2010**, 1800, 107-21	4	83
69	Structure of an O-GlcNAc transferase homolog provides insight into intracellular glycosylation. *Nature Structural and Molecular Biology*, **2008**, 15, 764-5	17.6	83
68	Streptococcus pneumoniae endohexosaminidase D, structural and mechanistic insight into substrate-assisted catalysis in family 85 glycoside hydrolases. *Journal of Biological Chemistry*, **2009**, 284, 11676-89	5.4	78

67	Siglecs as sensors of self in innate and adaptive immune responses. *Annals of the New York Academy of Sciences*, **2012**, 1253, 37-48	6.5	77
66	Systemic blockade of sialylation in mice with a global inhibitor of sialyltransferases. *Journal of Biological Chemistry*, **2014**, 289, 35149-58	5.4	67
65	Visualizing the reaction coordinate of an O-GlcNAc hydrolase. *Journal of the American Chemical Society*, **2010**, 132, 1807-9	16.4	66
64	Tools for Studying Glycans: Recent Advances in Chemoenzymatic Glycan Labeling. *ACS Chemical Biology*, **2017**, 12, 611-621	4.9	65
63	Targeting Selectins and Their Ligands in Cancer. *Frontiers in Oncology*, **2016**, 6, 93	5.3	65
62	Therapeutic Targeting of Siglecs using Antibody- and Glycan-Based Approaches. *Trends in Pharmacological Sciences*, **2015**, 36, 645-660	13.2	64
61	Cell-based glycan arrays for probing glycan-glycan binding protein interactions. *Nature Communications*, **2018**, 9, 880	17.4	64
60	Elevation of Global O-GlcNAc in rodents using a selective O-GlcNAcase inhibitor does not cause insulin resistance or perturb glucohomeostasis. *Chemistry and Biology*, **2010**, 17, 949-58		63
59	O-GlcNAcase catalyzes cleavage of thioglycosides without general acid catalysis. *Journal of the American Chemical Society*, **2005**, 127, 17202-3	16.4	63
58	Disubstituted Sialic Acid Ligands Targeting Siglecs CD33 and CD22 Associated with Myeloid Leukaemias and B Cell Lymphomas. *Chemical Science*, **2014**, 5, 2398-2406	9.4	60
57	Inhibition of O-GlcNAcase using a potent and cell-permeable inhibitor does not induce insulin resistance in 3T3-L1 adipocytes. *Chemistry and Biology*, **2010**, 17, 937-48		60
56	Copresentation of antigen and ligands of Siglec-G induces B cell tolerance independent of CD22. *Journal of Immunology*, **2013**, 191, 1724-31	5.3	57
55	CD33 recruitment inhibits IgE-mediated anaphylaxis and desensitizes mast cells to allergen. *Journal of Clinical Investigation*, **2019**, 129, 1387-1401	15.9	48
54	Targeted delivery of mycobacterial antigens to human dendritic cells via Siglec-7 induces robust T cell activation. *Journal of Immunology*, **2014**, 193, 1560-6	5.3	40
53	Siglecs induce tolerance to cell surface antigens by BIM-dependent deletion of the antigen-reactive B cells. *Journal of Immunology*, **2014**, 193, 4312-21	5.3	35
52	Unmasking of CD22 Co-receptor on Germinal Center B-cells Occurs by Alternative Mechanisms in Mouse and Man. *Journal of Biological Chemistry*, **2015**, 290, 30066-77	5.4	35
51	Repression of phagocytosis by human CD33 is not conserved with mouse CD33. *Communications Biology*, **2019**, 2, 450	6.7	34
50	Sialic acid-containing glycolipids mediate binding and viral entry of SARS-CoV-2. *Nature Chemical Biology*, **2021**,	11.7	33

49	A selective inhibitor Gal-PUGNAc of human lysosomal beta-hexosaminidases modulates levels of the ganglioside GM2 in neuroblastoma cells. *Angewandte Chemie - International Edition*, **2009**, 48, 1300-3	16.4	31
48	Probing synergy between two catalytic strategies in the glycoside hydrolase O-GlcNAcase using multiple linear free energy relationships. *Journal of the American Chemical Society*, **2009**, 131, 13415-22	16.4	31
47	Beads-on-a-string, characterization of ETS-1 sumoylated within its flexible N-terminal sequence. *Journal of Biological Chemistry*, **2006**, 281, 4164-72	5.4	31
46	Functional analysis of a group A streptococcal glycoside hydrolase Spy1600 from family 84 reveals it is a beta-N-acetylglucosaminidase and not a hyaluronidase. *Biochemical Journal*, **2006**, 399, 241-7	3.8	30
45	Exploiting CD22 on antigen-specific B cells to prevent allergy to the major peanut allergen Ara h 2. *Journal of Allergy and Clinical Immunology*, **2017**, 139, 366-369.e2	11.5	29
44	Enzymatic characterization and inhibition of the nuclear variant of human O-GlcNAcase. *Carbohydrate Research*, **2009**, 344, 1079-84	2.9	28
43	Human CD22 Inhibits Murine B Cell Receptor Activation in a Human CD22 Transgenic Mouse Model. *Journal of Immunology*, **2017**, 199, 3116-3128	5.3	24
42	Structural and dynamic independence of isopeptide-linked RanGAP1 and SUMO-1. *Journal of Biological Chemistry*, **2004**, 279, 49131-7	5.4	24
41	Encapsulating an Immunosuppressant Enhances Tolerance Induction by Siglec-Engaging Tolerogenic Liposomes. *ChemBioChem*, **2017**, 18, 1226-1233	3.8	23
40	Siglec-F is a novel intestinal M cell marker. *Biochemical and Biophysical Research Communications*, **2016**, 479, 1-4	3.4	23
39	Metabolism of vertebrate amino sugars with N-glycolyl groups: intracellular O-linked N-glycolylglucosamine (GlcNGc), UDP-GlcNGc, and the biochemical and structural rationale for the substrate tolerance of O-linked N-acetylglucosaminidase. *Journal of Biological Chemistry*, **2012**, 287, 28882-97	5.4	20
38	A versatile soluble siglec scaffold for sensitive and quantitative detection of glycan ligands. *Nature Communications*, **2020**, 11, 5091	17.4	20
37	Sialyltransferase inhibition leads to inhibition of tumor cell interactions with E-selectin, VCAM1, and MADCAM1, and improves survival in a human multiple myeloma mouse model. *Haematologica*, **2020**, 105, 457-467	6.6	18
36	The CD33 short isoform is a gain-of-function variant that enhances A phagocytosis in microglia. *Molecular Neurodegeneration*, **2021**, 16, 19	19	17
35	Exploiting CD22 To Selectively Tolerize Autoantibody Producing B-Cells in Rheumatoid Arthritis. *ACS Chemical Biology*, **2019**, 14, 644-654	4.9	16
34	A quantitative, high-throughput method identifies protein-glycan interactions via mass spectrometry. *Communications Biology*, **2019**, 2, 268	6.7	15
33	Structural advances of Siglecs: insight into synthetic glycan ligands for immunomodulation. *Organic and Biomolecular Chemistry*, **2020**, 18, 5784-5797	3.9	13
32	Glycoengineering of NK Cells with Glycan Ligands of CD22 and Selectins for B-Cell Lymphoma Therapy. *Angewandte Chemie - International Edition*, **2021**, 60, 3603-3610	16.4	13

31	Migration-based selections of antibodies that convert bone marrow into trafficking microglia-like cells that reduce brain amyloid □*Proceedings of the National Academy of Sciences of the United States of America*, **2018**, 115, E372-E381	11.5	12
30	Nanoparticles Displaying Allergen and Siglec-8 Ligands Suppress IgE-FcεRI-Mediated Anaphylaxis and Desensitize Mast Cells to Subsequent Antigen Challenge. *Journal of Immunology*, **2021**, 206, 2290-2300	5.3	11
29	Genetically encoded multivalent liquid glycan array displayed on M13 bacteriophage. *Nature Chemical Biology*, **2021**, 17, 806-816	11.7	11
28	Pre-treatment with high molecular weight free PEG effectively suppresses anti-PEG antibody induction by PEG-liposomes in mice. *Journal of Controlled Release*, **2021**, 329, 774-781	11.7	10
27	Mass Spectrometry-Based Shotgun Glycomics for Discovery of Natural Ligands of Glycan-Binding Proteins. *Analytical Chemistry*, **2020**, 92, 14012-14020	7.8	9
26	Murine Red Blood Cells Lack Ligands for B Cell Siglecs, Allowing Strong Activation by Erythrocyte Surface Antigens. *Journal of Immunology*, **2018**, 200, 949-956	5.3	8
25	Coordinated roles for glycans in regulating the inhibitory function of CD22 on B cells. *Biomedical Journal*, **2019**, 42, 218-232	7.1	7
24	Modulation of Siglec-7 Signaling Via In Situ-Created High-Affinity -Ligands. *ACS Central Science*, **2021**, 7, 1338-1346	16.8	7
23	Reproducing SIV□ef vaccine correlates of protection: trimeric gp41 antibody concentrated at mucosal front lines. *Aids*, **2016**, 30, 2427-2438	3.5	6
22	A highly concise preparation of O-deacetylated arylthioglycosides of N-acetyl-D-glucosamine from 2-acetamido-3,4,6-tri-O-acetyl-2-deoxy-alpha-D-glucopyranosyl chloride and aryl thiols or disulfides. *Carbohydrate Research*, **2006**, 341, 1764-9	2.9	6
21	Regulation of microglia population dynamics throughout development, health, and disease. *Glia*, **2021**, 69, 2771-2797	9	6
20	A CD22-Shp1 phosphatase axis controls integrin □display and B cell function in mucosal immunity. *Nature Immunology*, **2021**, 22, 381-390	19.1	6
19	Sialic acid-Dependent Binding and Viral Entry of SARS-CoV-2		6
18	Carbohydrate Sulfation As a Mechanism for Fine-Tuning Siglec Ligands. *ACS Chemical Biology*, **2021**, 16, 2673-2689	4.9	5
17	Antigenic Liposomes for Generation of Disease-specific Antibodies. *Journal of Visualized Experiments*, **2018**,	1.6	5
16	CUPRA-ZYME: An Assay for Measuring Carbohydrate-Active Enzyme Activities, Pathways, and Substrate Specificities. *Analytical Chemistry*, **2020**, 92, 3228-3236	7.8	4
15	Sialic acid-Dependent Binding and Viral Entry of SARS-CoV-2		4
14	Assessing Retinal Microglial Phagocytic Function In Vivo Using a Flow Cytometry-based Assay. *Journal of Visualized Experiments*, **2016**,	1.6	3

13	Anti-inflammatory role of GM1 and other gangliosides on microglia.. *Journal of Neuroinflammation*, **2022**, 19, 9	10.1	3
12	Glycoengineering of NK cells with glycan ligands of CD22 and selectins for B-cell lymphoma therapy		2
11	Genetically Encoded, Multivalent Liquid Glycan Array (LiGA)		2
10	Targeted self-destruction. *Nature Chemical Biology*, **2020**, 16, 1281-1283	11.7	2
9	Neuraminidase inhibitors rewire neutrophil function in murine sepsis and in COVID-19 **2021**,		1
8	Modulation of Siglec-7 Signaling via in situ Created High-affinity cis-Ligands		1
7	Carbohydrate sulfation as a mechanism for fine-tuning Siglec ligands		1
6	Increasing phagocytosis of microglia by targeting CD33 with liposomes displaying glycan ligands. *Journal of Controlled Release*, **2021**, 338, 680-693	11.7	1
5	DNA-Encoded Multivalent Display of Chemically Modified Protein Tetramers on Phage: Synthesis and Applications.. *ACS Chemical Biology*, **2021**,	4.9	1
4	Glycoengineering of NK Cells with Glycan Ligands of CD22 and Selectins for B-Cell Lymphoma Therapy. *Angewandte Chemie*, **2021**, 133, 3647-3654	3.6	0
3	Siglec-7 Mediates Immunomodulation by Colorectal Cancer-Associated ssp.. *Frontiers in Immunology*, **2021**, 12, 744184	8.4	0
2	Coordinated changes in glycosylation regulate the germinal center through CD22.. *Cell Reports*, **2022**, 38, 110512	10.6	0
1	Quantifying Carbohydrate-Active Enzyme Activity with Glycoprotein Substrates Using Electrospray Ionization Mass Spectrometry and Center-of-Mass Monitoring. *Analytical Chemistry*, **2021**, 93, 15262-15270	7.8	