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CD45.1 Monoclonal Antibody (A20), PE, eBioscience™

Catalog Number 12-0453-82

Product data sheet

Details	
Size	100 µg
Host/Isotope	Mouse / IgG2a, kappa
Class	Monoclonal
Type	Antibody
Clone	A20
Conjugate	PE
Form	Liquid
Concentration	0.2 mg/mL
Purification	Affinity chromatography
Storage buffer	PBS, pH 7.2
Contains	0.09% sodium azide
Storage Conditions	4° C, store in dark, DO NOT FREEZE!

Species Reactivity	
Species reactivity	Mouse
Published species	Fish, Mouse, Human, Not Applicable

Tested Applications	Dilution *
Flow Cytometry (Flow)	0.5 µg/test

Published Applications	
Flow Cytometry (Flow)	See 59 publications below
Western Blot (WB)	See 1 publications below
Immunohistochemistry (IHC)	See 1 publications below
Immunocytochemistry (ICC/IF)	See 3 publications below

* Suggested working dilutions are given as a guide only. It is recommended that the user titrate the product for use in their own experiment using appropriate negative and positive controls.

Product specific information

Description: The A20 monoclonal antibody reacts with the mouse CD45 molecule, the leukocyte common antigen (LCA) in CD45.1-expressing mouse strains. The strains that express CD45.1 include SJL/J, DA, STS/A and RIII. CD45.1 is expressed by all leukocytes in these strains. Applications Reported: The A20 antibody has been reported for use in flow cytometric analysis. Applications Tested: The A20 antibody has been tested by flow cytometric analysis of mouse splenocytes. This can be used at less than or equal to 0.5 µg per test. A test is defined as the amount (µg) of antibody that will stain a cell sample in a final volume of 100 µL. Cell number should be determined empirically but can range from 10^5 to 10^8 cells/test. It is recommended that the antibody be carefully titrated for optimal performance in the assay of interest. Excitation: 488-561 nm; Emission: 578 nm; Laser: Blue Laser, Green Laser, Yellow-Green Laser. Filtration: 0.2 µm post-manufacturing filtered.

Background/Target Information

CD45 (LCA, leukocyte common antigen) is a receptor-type protein tyrosine phosphatase ubiquitously expressed in all nucleated hematopoietic cells, comprising approximately 10% of all surface proteins in lymphocytes. CD45 glycoprotein is crucial in lymphocyte development and antigen signaling, serving as an important regulator of Src-family kinases. CD45 protein exists as multiple isoforms as a result of alternative splicing; these isoforms differ in their extracellular domains, whereas they share identical transmembrane and cytoplasmic domains. These CD45 isoforms differ in their ability to translocate into the glycosphingolipid-enriched membrane domains and their expression depends on cell type and physiological state of the cell. Besides the role in immunoreceptor signaling, CD45 is important in promoting cell survival by modulating integrin-mediated signal transduction pathway and is also involved in DNA fragmentation during apoptosis. CD45RA is an isoform of the CD45 complex and has restricted expression between different subtypes of lymphoid cells.

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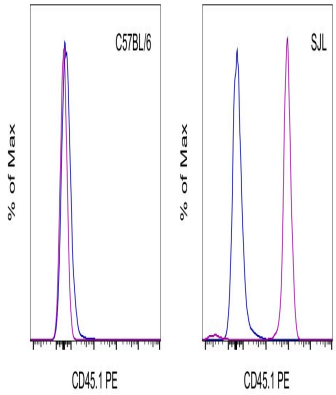
Product Images For CD45.1 Monoclonal Antibody (A20), PE, eBioscience™



CD45.1 Antibody (12-0453-82) in Flow

Staining of C57BL/6 (left) or SJL (right) mouse splenocytes with 0.25 µg of Mouse IgG2a kappa Isotype Control, PE (Product # 12-4724-82) (blue histogram) or 0.25 µg of CD45.1 Monoclonal Antibody, PE (purple histogram). Cells in the lymphocyte gate were used for analysis.

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PubMed References For CD45.1 Monoclonal Antibody (A20), PE, eBioscience™

59 Flow Cytometry References

Species / Dilution	Summary
Mouse / Not Cited	12-0453 was used in Flow cytometry/Cell sorting to study the role of dendritic cells as antigen presenting cells and a source of type I interferons in acute lymphocytic choriomeningitis virus infection. Journal of immunology (Baltimore, Md. : 1950) (2016; 197: 2780) **"Dendritic Cells Are Dispensable for T Cell Priming and Control of Acute Lymphocytic Choriomeningitis Virus Infection."** Author(s):Hilpert C,Sitte S,Matthies A,Voehringer D PubMed Article URL:http://dx.doi.org/10.4049/jimmunol.1502582
Mouse / Not Cited	12-0453 was used in Flow cytometry/Cell sorting to show that in leukaemia, GMP clusters are constantly produced due to lack of termination cytokines that restore haematopoietic stem-cell quiescence. Nature (2017; 544: 53) **"Myeloid progenitor cluster formation drives emergency and leukaemic myelopoiesis."** Author(s):Hérault A,Binnewies M,Leong S,Calero-Nieto FJ,Zhang SY,Kang YA,Wang X,Pietras EM,Chu SH,Barry-Holson K,Armstrong S,Göttgens B,Passegué E PubMed Article URL:http://dx.doi.org/10.1038/nature21693
Mouse / Not Cited	12-0453 was used in Flow cytometry/Cell sorting to investigate the effects of loss of ld genes on adult endothelial cell. Cell reports (2020; 31:) **"Id1 and Id3 Maintain Steady-State Hematopoiesis by Promoting Sinusoidal Endothelial Cell Survival and Regeneration."** Author(s):Gadomski S,Singh SK,Singh S,Sarkar T,Klarmann KD,Berenschot M,Seaman S,Jakubison B,Gudmundsson KO,Lockett S,Keller JR PubMed Article URL:http://dx.doi.org/10.1016/j.celrep.2020.107572
Mouse / Not Cited	12-0453 was used in Flow cytometry/Cell sorting to specify the cellular identities of the adipogenic and osteogenic lineages of the bone. Cell stem cell (2017; 20: 771) **"Adipocyte Accumulation in the Bone Marrow during Obesity and Aging Impairs Stem Cell-Based Hematopoietic and Bone Regeneration."** Author(s):Ambrosi TH,Scialdone A,Graja A,Gohlke S,Jank AM,Bocian C,Woelk L,Fan H,Logan DW,Schürmann A,Saraiva LR,Schulz TJ PubMed Article URL:http://dx.doi.org/10.1016/j.stem.2017.02.009
Mouse / Not Cited	12-0453 was used in Flow cytometry/Cell sorting to describe a novel form of homeostatic proliferation that occurs when naive T cells encounter raised levels of IL-2 and IL-15 in vivo. The Journal of experimental medicine (2007; 204: 1787) **"An intense form of homeostatic proliferation of naive CD8+ cells driven by IL-2."** Author(s):Cho JH,Boyman O,Kim HO,Hahm B,Rubinstein MP,Ramsey C,Kim DM,Surh CD,Sprent J PubMed Article URL:http://dx.doi.org/10.1084/jem.20070740
Mouse / Not Cited	12-0453 was used in Flow cytometry/Cell sorting to show that targeting of interleukin-1 receptor accessory protein via RNA interference, genetic deletion, or antibodies inhibits acute myeloid leukaemia pathogenesis in vitro and in vivo. The Journal of experimental medicine (2018; 215: 1709) **"IL1RAP potentiates multiple oncogenic signaling pathways in AML."** Author(s):Mitchell K,Barreyro L,Todorova TI,Taylor SJ,Antony-Debré I,Narayanagari SR,Carvajal LA,Leite J,Piperdi Z,Pendurti G,Mantzaris I,Paietta E,Verma A,Gritsman K,Steidl U PubMed Article URL:http://dx.doi.org/10.1084/jem.20180147
Mouse / Not Cited	12-0453-82 was used in Miscellaneous, Western Blot to show Roquin-mediated control of PI3K-mTOR signaling prevents autoimmunity by restraining activation and differentiation of conventional T cells and specialization of Treg cells. Immunity (2017; 47: 1067) **"Roquin Suppresses the PI3K-mTOR Signaling Pathway to Inhibit T Helper Cell Differentiation and Conversion of Treg to Tfr Cells."** Author(s):Essig K,Hu D,Guimaraes JC,Alterauge D,Edelmann S,Raj T,Kranich J,Behrens G,Heiseke A,Floess S,Klein J,Maiser A,Marschall S,Hrab de Angelis M,Leonhardt H,Calkhoven CF,Noessner E,Brocker T,Huehn J,Krug AB,Zavolan M,Baumjohann D,Heissmeyer V PubMed Article URL:http://dx.doi.org/10.1016/j.immuni.2017.11.008

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	12-0453 was used in Flow cytometry/Cell sorting to elucidate the immunopathological contribution of Group A streptococci (GAS)-specific CD4+ T cells in the induced neuropathology following infection with GAS.
Mouse / Not Cited	The Journal of clinical investigation (2016; 126: 303) **"Group A Streptococcus intranasal infection promotes CNS infiltration by streptococcal-specific Th17 cells."** Author(s):Dileepan T,Smith ED,Knowland D,Hsu M,Platt M,Bittner-Eddy P,Cohen B,Southern P,Latimer E,Harley E,Agalliu D,Cleary PP PubMed Article URL:http://dx.doi.org/10.1172/JCI80792
	12-0453 was used in Flow cytometry/Cell sorting to show how FOXO3A directs a protective autophagy program in haematopoietic stem cells.
Mouse / Not Cited	Nature (2013; 494: 323) **"FOXO3A directs a protective autophagy program in haematopoietic stem cells."** Author(s):Warr MR,Binnewies M,Flach J,Reynaud D,Garg T,Malhotra R,Debnath J,Passegué E PubMed Article URL:http://dx.doi.org/10.1038/nature11895
	12-0453 was used in Flow cytometry/Cell sorting to assess the impact of dendritic cell immunisation on graft vs tumour reactions triggered by allogeneic bone marrow transplantation.
Mouse / Not Cited	British journal of cancer (2013; 108: 1092) **"Early immunisation with dendritic cells after allogeneic bone marrow transplantation elicits graft vs tumour reactivity."** Author(s):Gigi V,Stein J,Askenasy N,Yaniv I,Ash S PubMed Article URL:http://dx.doi.org/10.1038/bjc.2013.39
	12-0453 was used in Flow cytometry/Cell sorting to report that the small molecule YH250 stimulates hematopoiesis in lethally or sublethally irradiated mice.
Mouse / Not Cited	PloS one (2017; 12:) **"Small molecule p300/catenin antagonist enhances hematopoietic recovery after radiation."** Author(s):Zhao Y,Wu K,Nguyen C,Smbatyan G,Melendez E,Higuchi Y,Chen Y,Kahn M PubMed Article URL:http://dx.doi.org/10.1371/journal.pone.0177245
	12-0453 was used in Flow cytometry/Cell sorting to examine whether recognition of -GalCer presented on CD1d-expressing DCs and B cells in vivo elicits the cytotoxic activity of iNKT cells.
Mouse / Not Cited	Journal of leukocyte biology (2011; 89: 753) **"Administration of alpha-galactosylceramide impairs the survival of dendritic cell subpopulations in vivo."** Author(s):Simkins HM,Hyde E,Farrand KJ,Ong ML,Degli-Esposti MA,Hermans IF,Ronchese F PubMed Article URL:http://dx.doi.org/10.1189/jlb.0910480
	12-0453-82 was used in Flow Cytometry to provide insights into the role of adipocyte- and macrophage-derived proteoglycans in adipose tissue inflammation in obesity.
Mouse / Not Cited	Cell reports (2020; 31:) **"Adipocyte-Derived Versican and Macrophage-Derived Biglycan Control Adipose Tissue Inflammation in Obesity."** Author(s):Han CY,Kang I,Harten IA,Gebe JA,Chan CK,Omer M,Alonge KM,den Hartigh LJ,Gomes Kjerulf D,Goodspeed L,Subramanian S,Wang S,Kim F,Birk DE,Wight TN,Chait A PubMed Article URL:http://dx.doi.org/10.1016/j.celrep.2020.107818
	12-0453 was used in Flow cytometry/Cell sorting to elucidate the contribution of MII-AF4 in B cell acute lymphoblastic leukaemia early development in the mouse embryo.
Mouse / Not Cited	Cell reports (2016; 16: 1039) **"Mll-AF4 Confers Enhanced Self-Renewal and Lymphoid Potential during a Restricted Window in Development."** Author(s):Barrett NA,Malouf C,Kapeni C,Bacon WA,Giotopoulos G,Jacobsen SEW,Huntly BJ,Ottersbach K PubMed Article URL:http://dx.doi.org/10.1016/j.celrep.2016.06.046
	12-0453 was used in Flow cytometry/Cell sorting to delineate how the brain endothelium maintains lactate homeostasis and contributes to adult hippocampal neurogenesis and cognitive functions.
Mouse / Not Cited	Cell stem cell (2019; 25: 754) **"Brain Endothelial Cells Maintain Lactate Homeostasis and Control Adult Hippocampal Neurogenesis."** Author(s):Wang J,Cui Y,Yu Z,Wang W,Cheng X,Ji W,Guo S,Zhou Q,Wu N,Chen Y,Chen Y,Song X,Jiang H,Wang Y,Lan Y,Zhou B,Mao L,Li J,Yang H,Guo W,Yang X PubMed Article URL:http://dx.doi.org/10.1016/j.stem.2019.09.009

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	12-0453 was used in Flow cytometry/Cell sorting to suggest that autoimmune arthritis develops in the setting of lymphopenia when Foxp3(+)CD4(+) regulatory T cells are insufficient to functionally inactivate all autoreactive CD4(+) T cells that encounter self-Ag.
Mouse / Not Cited	Journal of immunology (Baltimore, Md. : 1950) (2012; 188: 170) **"Arthritogenic self-reactive CD4+ T cells acquire an FR4hiCD73hi anergic state in the presence of Foxp3+ regulatory T cells."** Author(s):Martinez RJ,Zhang N,Thomas SR,Nandiwada SL,Jenkins MK,Binstadt BA,Mueller DL PubMed Article URL:http://dx.doi.org/10.4049/jimmunol.1101311
	12-0453-82 was used in Flow cytometry/Cell sorting to indicate that local fibroblast proliferation but not cellular influx is responsible for the synovial hyperplasia in CAIA.
Mouse / Not Cited	Biochemical and biophysical research communications (2016; 470: 504) **"Local fibroblast proliferation but not influx is responsible for synovial hyperplasia in a murine model of rheumatoid arthritis."** Author(s):Matsuo Y,Mizoguchi F,Saito T,Kawahata K,Ueha S,Matsushima K,Inagaki Y,Miyasaka N,Kohsaka H PubMed Article URL:http://dx.doi.org/10.1016/j.bbrc.2016.01.121
	12-0453 was used in Flow cytometry/Cell sorting to demonstrate adipose tissue macrophages participate in inflammatory pathways that are activated in obese individuals..
Mouse / Not Cited	The Journal of clinical investigation (2003; 112: 1796) **"Obesity is associated with macrophage accumulation in adipose tissue."** Author(s):Weisberg SP,McCann D,Desai M,Rosenbaum M,Leibel RL,Ferrante AW PubMed Article URL:http://dx.doi.org/10.1172/JCI19246
	12-0453 was used in Flow cytometry/Cell sorting to reveal that direct presentation by nonprofessional APCs can dramatically enhance accumulation of CD8(+) T cells during primary response.
Mouse / Not Cited	Journal of immunology (Baltimore, Md. : 1950) (2010; 185: 2763) **"Direct presentation regulates the magnitude of the CD8+ T cell response to cell-associated antigen through prolonged T cell proliferation."** Author(s):Tatum AM,Watson AM,Schell TD PubMed Article URL:http://dx.doi.org/10.4049/jimmunol.0903920
	12-0453 was used in Flow cytometry/Cell sorting to examine the signals required for the migration of tissue-resident memory T cells within the constrained epidermal environment.
Mouse / Not Cited	Journal of immunology (Baltimore, Md. : 1950) (2017; 199: 2451) **"Chemokine Receptor-Dependent Control of Skin Tissue-Resident Memory T Cell Formation."** Author(s):Zaid A,Hor JL,Christo SN,Groom JR,Heath WR,Mackay LK,Mueller SN PubMed Article URL:http://dx.doi.org/10.4049/jimmunol.1700571
	12-0453 was used in Flow cytometry/Cell sorting to study functional decline in ageing haematopoietic stem cells due to replicative stress.
Mouse / Not Cited	Nature (2014; 512: 198) **"Replication stress is a potent driver of functional decline in ageing haematopoietic stem cells."** Author(s):Flach J,Bakker ST,Mohrin M,Conroy PC,Pietras EM,Reynaud D,Alvarez S,Diolaiti ME,Ugarte F,Forsberg EC,Le Beau MM,Stohr BA,Méndez J,Morrison CG,Passegué E PubMed Article URL:http://dx.doi.org/10.1038/nature13619
	12-0453 was used in Flow cytometry/Cell sorting to investigate the impact of depleting langerin+ CD8+ dendritic cells in a murine model of intravenous infection with Mycobacterium bovis bacille Calmette-Guerin.
Mouse / Not Cited	Frontiers in immunology (2019; 9:) **"Langerin⁺ CD8⁺ Dendritic Cells Drive Early CD8⁺ T Cell Activation and IL-12 Production During Systemic Bacterial Infection."** Author(s):Prendergast KA,Daniels NJ,Petersen TR,Hermans IF,Kirman JR PubMed Article URL:http://dx.doi.org/10.3389/fimmu.2018.00953
	12-0453 was used in Flow cytometry/Cell sorting to highlight cytokine gene transfer-based methods as a potential platform for natural killer cell recovery after bone marrow transplantation in mice.
Mouse / Not Cited	Biology of blood and marrow transplantation : journal of the American Society for Blood and Marrow Transplantation (2011; 17: 1754) **"Hydrodynamic delivery of human IL-15 cDNA increases murine natural killer cell recovery after syngeneic bone marrow transplantation."** Author(s):Barao I,Alvarez M,Redelman D,Weiss JM,Ortaldo JR,Wiltrout RH,Murphy WJ PubMed Article URL:http://dx.doi.org/10.1016/j.bbmt.2011.08.023

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	12-0453 was used in Flow cytometry/Cell sorting to study the role of type I interferons during intestinal homeostasis regulation in a T cell-induced colitis mouse model.
Mouse / Not Cited	Gastroenterology (2012; 143: 145) **"Type I interferons maintain Foxp3 expression and T-regulatory cell functions under inflammatory conditions in mice."** Author(s):Lee SE,Li X,Kim JC,Lee J,González-Navajas JM,Hong SH,Park IK,Rhee JH,Raz E PubMed Article URL:http://dx.doi.org/10.1053/j.gastro.2012.03.042
	12-0453 was used in Flow cytometry/Cell sorting to show that combined biallelic Cebpa and Gata2 zinc finger-1 (ZnF1) mutations cooperatively induce bilineage AEL, and that the major leukemia-initiating cell (LIC) population has a neutrophil-monocyte progenitor (NMP) phenotype.
Mouse / Not Cited	Cancer cell (2020; 37: 690) **"C/EBP and GATA-2 Mutations Induce Bilineage Acute Erythroid Leukemia through Transformation of a Neomorphic Neutrophil-Erythroid Progenitor."** Author(s):Di Genua C,Valletta S,Buono M,Stoilova B,Sweeney C,Rodriguez-Meira A,Grover A,Drissen R,Meng Y, Beveridge R,Aboukhalil Z,Karamitros D,Belderbos ME,Bystrykh L,Thongjuea S,Vyas P,Nerlov C PubMed Article URL:http://dx.doi.org/10.1016/j.ccell.2020.03.022
	12-0453 was used in Western Blotting to investigate the role of dendritic cell sphingosine-1-phosphate lyase in thymic egress.
Mouse / Not Cited	The Journal of experimental medicine (2016; 213: 2773) **"Dendritic cell sphingosine-1-phosphate lyase regulates thymic egress."** Author(s):Zamora-Pineda J,Kumar A,Suh JH,Zhang M,Saba JD PubMed Article URL:http://dx.doi.org/10.1084/jem.20160287
	12-0453 was used in Flow cytometry/Cell sorting to determine that haematopoietic progenitors are particularly sensitive to replication stress.
Mouse / 1:50	Nature communications (2015; 6:) **"Replication stress caused by low MCM expression limits fetal erythropoiesis and hematopoietic stem cell functionality."** Author(s):Alvarez S,Díaz M,Flach J,Rodriguez-Acebes S,López-Contreras AJ,Martínez D,Cañamero M,Fernández-Capetillo O,Isern J,Passegué E,Méndez J PubMed Article URL:http://dx.doi.org/10.1038/ncomms9548
	12-0453 was used in Flow cytometry/Cell sorting to investigate the role of the Nod/Rip2 pathway in responses to Chlamydophila pneumoniae infection, showing that it is essential for host defences against pneumonia.
Mouse / Not Cited	PLoS pathogens (2009; 5:) **"The NOD/RIP2 pathway is essential for host defenses against Chlamydophila pneumoniae lung infection."** Author(s):Shimada K,Chen S,Dempsey PW,Sorrentino R,Alsabeh R,Slepenkin AV,Peterson E,Doherty TM,Underhill D, Crother TR,Arditi M PubMed Article URL:http://dx.doi.org/10.1371/journal.ppat.1000379
	12-0453 was used in Flow cytometry/Cell sorting to investigate Foxp3 as the master switch for Tregs, showing that expression is regulated by DNA methylation in Tregs.
Mouse / Not Cited	Journal of immunology (Baltimore, Md. : 1950) (2009; 182: 259) **"Epigenetic regulation of Foxp3 expression in regulatory T cells by DNA methylation."** Author(s):Lal G,Zhang N,van der Touw W,Ding Y,Ju W,Bottinger EP,Reid SP,Levy DE,Bromberg JS PubMed Article URL:http://dx.doi.org/10.4049/jimmunol.182.1.259
	12-0453 was used in Flow cytometry/Cell sorting to identify essential components of a regulatory circuit important for the migration of TH2 cells.
Mouse / Not Cited	Nature immunology (2013; 14: 1190) **"Expression and regulation of intergenic long noncoding RNAs during T cell development and differentiation."** Author(s):Hu G,Tang Q,Sharma S,Yu F,Escobar TM,Muljo SA,Zhu J,Zhao K PubMed Article URL:http://dx.doi.org/10.1038/ni.2712
	12-0453 was used in Flow cytometry/Cell sorting to assess lncRNA function via an in vivo RNAi screen in a model of acute myeloid leukemia.
Mouse / Not Cited	eLife (2017; 6:) **"lncRNA requirements for mouse acute myeloid leukemia and normal differentiation."** Author(s):Delás MJ,Sabin LR,Dolzhenko E,Knott SR,Munera Maravilla E,Jackson BT,Wild SA,Kovacevic T,Stork EM, Zhou M,Erard N,Lee E,Kelley DR,Roth M,Barbosa IA,Zuber J,Rinn JL,Smith AD,Hannon GJ PubMed Article URL:http://dx.doi.org/10.7554/eLife.25607

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Mouse / 1:100	12-0453 was used in Flow cytometry/Cell sorting to indicate that a terminally differentiated cell type derived from HSCs contributes to the HSC niche, directly regulating HSC behavior. Nature medicine (2014; 20: 1315) **"Megakaryocytes regulate hematopoietic stem cell quiescence through CXCL4 secretion."** Author(s):Bruns I,Lucas D,Pinho S,Ahmed J,Lambert MP,Kunisaki Y,Scheiermann C,Schiff L,Poncz M,Bergman A, Frenette PS PubMed Article URL:http://dx.doi.org/10.1038/nm.3707
Mouse / Not Cited	12-0453 was used in Flow cytometry/Cell sorting to assess whether treprostinil, a prostacyclin analog, could be repurposed to improve hematopoietic stem cell transplantation. Molecular pharmacology (2016; 89: 630) **"Repurposing Treprostinil for Enhancing Hematopoietic Progenitor Cell Transplantation."** Author(s):Kazemi Z,Bergmayr C,Prchal-Murphy M,Javaheri T,Themanns M,Pham HT,Strohmaier W,Sexl V,Freissmuth M, Zebedin-Brandl E PubMed Article URL:http://dx.doi.org/10.1124/mol.116.103267
Mouse / Not Cited	12-0453 was used in Flow cytometry/Cell sorting to demonstrate an essential function for autophagy in removing activated mitochondria and controlling oxidative metabolism, thereby maintaining HSC stemness and regenerative potential. Nature (2017; 543: 205) **"Autophagy maintains the metabolism and function of young and old stem cells."** Author(s):Ho TT,Warr MR,Adelman ER,Lansinger OM,Flach J,Verovskaya EV,Figueroa ME,Passegué E PubMed Article URL:http://dx.doi.org/10.1038/nature21388
Mouse / Not Cited	12-0453-82 was used in Flow Cytometry to suggest that inhibiting glycolysis by targeting Gpi1 could be an effective therapeutic strategy with minimum toxicity for Th17-mediated autoimmune diseases, and, more generally, that metabolic redundancies can be exploited for selective targeting of disease processes. Cell (2020; 182: 641) **"Niche-Selective Inhibition of Pathogenic Th17 Cells by Targeting Metabolic Redundancy."** Author(s):Wu L,Hollinshead KER,Hao Y,Au C,Kroehling L,Ng C,Lin WY,Li D,Silva HM,Shin J,Lafaille JJ,Possemato R, Pacold ME,Papagiannakopoulos T,Kimmelman AC,Satija R,Littman DR PubMed Article URL:http://dx.doi.org/10.1016/j.cell.2020.06.014
Mouse / Not Cited	12-0453 was used in Flow cytometry/Cell sorting to determine whether memory-like T cells can efficiently respond to foreign antigen and participate in antiviral immunity. Frontiers in immunology (2019; 7:) **"CD4 T Helper Cells Instruct Lymphopenia-Induced Memory-Like CD8 T Cells for Control of Acute LCMV Infection."** Author(s):Schmitt ME,Sitte S,Voehringer D PubMed Article URL:http://dx.doi.org/10.3389/fimmu.2016.00622
Mouse / Not Cited	12-0453-82 was used in Flow Cytometry to reveal the essential physiological function of the PTEN/AKT/NEDD4-2 /MFSD2A axis in the regulation of BBB permeability. Cell reports (2021; 36:) **"Brain endothelial PTEN/AKT/NEDD4-2/MFSD2A axis regulates blood-brain barrier permeability."** Author(s):Cui Y,Wang Y,Song X,Ning H,Zhang Y,Teng Y,Wang J,Yang X PubMed Article URL:http://dx.doi.org/10.1016/j.celrep.2021.109327
Mouse / Not Cited	12-0453 was used in Flow cytometry/Cell sorting to assess the potential for development of single naive T cells into different subsets. The Journal of experimental medicine (2010; 207: 1235) **"One naive T cell, multiple fates in CD8+ T cell differentiation."** Author(s):Gerlach C,van Heijst JW,Swart E,Sie D,Armstrong N,Kerkhoven RM,Zehn D,Bevan MJ,Schepers K, Schumacher TN PubMed Article URL:http://dx.doi.org/10.1084/jem.20091175
Mouse / 1:200	12-0453 was used in Flow cytometry/Cell sorting to show that greater control of established autochthonous tumours is associated with the early accumulation of adoptively transferred T cells. Cancer immunology, immunotherapy : CII (2008; 57: 883) **"Rapid accumulation of adoptively transferred CD8+ T cells at the tumor site is associated with long-term control of SV40 T antigen-induced tumors."** Author(s):Yorty JL,Tevethia SS,Schell TD PubMed Article URL:http://dx.doi.org/10.1007/s00262-007-0424-y

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Mouse / Not Cited	12-0453 was used in Flow cytometry/Cell sorting to identify the genes encoding miR-21 and miR-196b as transcriptional targets of HOX-based leukaemia oncoproteins. The Journal of clinical investigation (2014; 124: 222) **"Therapeutic antagonists of microRNAs deplete leukemia-initiating cell activity."** Author(s):Velu CS,Chaubey A,Phelan JD,Horman SR,Wunderlich M,Guzman ML,Jegga AG,Zeleznik-Le NJ,Chen J,Mulloy JC,Cancelas JA,Jordan CT,Aronow BJ,Marcucci G,Bhat B,Gebelein B,Grimes HL PubMed Article URL:http://dx.doi.org/10.1172/JCI66005
Human / 1:100 Mouse / 1:100	12-0453 was used in Flow cytometry/Cell sorting to demonstrate that immunosuppressive defects in XIAP-deficient regulatory T cells can be corrected by treatment with autologous induced Treg cells and IL-6 Receptor blockade. Nature communications (2018; 9:) **"IL-6 receptor blockade corrects defects of XIAP-deficient regulatory T cells."** Author(s):Hsieh WC,Hsu TS,Chang YJ,Lai MZ PubMed Article URL:http://dx.doi.org/10.1038/s41467-018-02862-4
Mouse / Not Cited	12-0453 was used in Flow cytometry/Cell sorting to demonstrate that a lack of signalling can convert CD4(+) cells to Foxp3(+) iT(reg) cells, amongst other effects. Nature immunology (2013; 14: 162) **"Absence of signaling into CD4 cells via C3aR and C5aR enables autoinductive TGF-1 signaling and induction of Foxp3 regulatory T cells."** Author(s):Strainic MG,Shevach EM,An F,Lin F,Medof ME PubMed Article URL:http://dx.doi.org/10.1038/ni.2499
Mouse / Not Cited	12-0453 was used in Flow cytometry/Cell sorting to study the prognostic impact of the four members of the miR-181 family in patients with CA-AML. Blood (2012; 119: 2314) **"Up-regulation of a HOXA-PBX3 homeobox-gene signature following down-regulation of miR-181 is associated with adverse prognosis in patients with cytogenetically abnormal AML."** Author(s):Li Z,Huang H,Li Y,Jiang X,Chen P,Arnovitz S,Radmacher MD,Maharry K,Elkahloun A,Yang X,He C,He M,Zhang Z,Dohner K,Neilly MB,Price C,Lussier YA,Zhang Y,Larson RA,Le Beau MM,Caligiuri MA,Bullinger L,Valk PJ,Delwel R,Lowenberg B,Liu PP,Marcucci G,Bloomfield CD,Rowley JD,Chen J PubMed Article URL:http://dx.doi.org/10.1182/blood-2011-10-386235
Mouse / Not Cited	12-0453 was used in Flow cytometry/Cell sorting to demonstrate a role for USP16 in antagonising the self-renewal and senescence pathways in Down's syndrome. Nature (2013; 501: 380) **"Usp16 contributes to somatic stem-cell defects in Down's syndrome."** Author(s):Adorno M,Sikandar S,Mitra SS,Kuo A,Nicolis Di Robilant B,Haro-Acosta V,Ouadah Y,Quarta M,Rodriguez J,Qian D,Reddy VM,Cheshier S,Garner CC,Clarke MF PubMed Article URL:http://dx.doi.org/10.1038/nature12530
Mouse / Not Cited	12-0453 was used in Flow cytometry/Cell sorting to investigate the extent to which MyD88 signaling is required to control S. pneumoniae infection, showing that lung epithelium and myeloid cells cooperate to clear infection. Mucosal immunology (2016; 9: 1288) **"Lung epithelium and myeloid cells cooperate to clear acute pneumococcal infection."** Author(s):Dudek M,Puttur F,Arnold-Schrauf C,Kühl AA,Holzmann B,Henriques-Normark B,Berod L,Sparwasser T PubMed Article URL:http://dx.doi.org/10.1038/mi.2015.128
Mouse / 1:50	12-0453-82 was used in Flow Cytometry to show that lipocalin-2 confers a growth advantage on Mycobacterium tuberculosis in the early stages of infection. Frontiers in immunology (2019; 9:) **"Lipocalin-2 Functions as Inhibitor of Innate Resistance to Mycobacterium tuberculosis."** Author(s):Dahl SL,Woodworth JS,Lerche CJ,Cramer EP,Nielsen PR,Moser C,Thomsen AR,Borregaard N,Cowland JB PubMed Article URL:http://dx.doi.org/10.3389/fimmu.2018.02717
Mouse / Not Cited	12-0453 was used in Flow cytometry/Cell sorting to reveal the selective upregulation of Helios during Th2 and TFh responses to alum-protein vaccines. PloS one (2011; 6:) **"Helios is associated with CD4 T cells differentiating to T helper 2 and follicular helper T cells in vivo independently of Foxp3 expression."** Author(s):Serre K,Bénézech C,Desanti G,Bobat S,Toellner KM,Bird R,Chan S,Kastner P,Cunningham AF,Maclennan IC,Mohr E PubMed Article URL:http://dx.doi.org/10.1371/journal.pone.0020731

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	12-0453 was used in Flow cytometry/Cell sorting to study IL-7 and IL-15 regulation of CD8+ T-cell subsets during contraction of the immune response.
Mouse / Not Cited	Blood (2008; 112: 3704) **"IL-7 and IL-15 differentially regulate CD8+ T-cell subsets during contraction of the immune response."** Author(s):Rubinstein MP,Lind NA,Purton JF,Filippou P,Best JA,McGhee PA,Surh CD,Goldrath AW PubMed Article URL:http://dx.doi.org/10.1182/blood-2008-06-160945
	12-0453 was used in Flow cytometry/Cell sorting to demonstrate a direct pathogenic role of suPAR as a circulating mediator of kidney disease, such as focal segmental glomerulosclerosis.
Mouse / Not Cited	Nature medicine (2017; 23: 100) **"Bone marrow-derived immature myeloid cells are a main source of circulating suPAR contributing to proteinuric kidney disease."** Author(s):Hahm E,Wei C,Fernandez I,Li J,Tardi NJ,Tracy M,Wadhwani S,Cao Y,Peev V,Zloza A,Lusciks J,Hayek SS, O'Connor C,Bitzer M,Gupta V,Sever S,Sykes DB,Scadden DT,Reiser J PubMed Article URL:http://dx.doi.org/10.1038/nm.4242
	12-0453 was used in Flow cytometry/Cell sorting to investigate the role of the transcriptional repressor Snai3 protein in the derivation of cells of the haematopoietic system.
Mouse / Not Cited	European journal of immunology (2012; 42: 1038) **"Overexpression of Snai3 suppresses lymphoid- and enhances myeloid-cell differentiation."** Author(s):Dahlem T,Cho S,Spangrude GJ,Weis JJ,Weis JH PubMed Article URL:http://dx.doi.org/10.1002/eji.201142193
	12-0453 was used in Flow cytometry/Cell sorting to identify a critical regulatory circuit that tailors HSC responses to acute needs, and is likely to underlie deregulated blood homeostasis in chronic inflammation conditions.
Mouse / Not Cited	Nature cell biology (2016; 18: 607) **"Chronic interleukin-1 exposure drives haematopoietic stem cells towards precocious myeloid differentiation at the expense of self-renewal."** Author(s):Pietras EM,Mirantes-Barbeito C,Fong S,Loeffler D,Kovtonyuk LV,Zhang S,Lakshminarasimhan R,Chin CP, Techner JM,Will B,Nerlov C,Steidl U,Manz MG,Schroeder T,Passegué E PubMed Article URL:http://dx.doi.org/10.1038/ncb3346
	12-0453 was used in Flow cytometry/Cell sorting to evaluate whether the biological activity of G-CSF can be improved by pre-association with anti-G-CSF monoclonal antibodies prior to injection.
Mouse / Not Cited	Journal of hematology & oncology (2013; 6:) **"G-CSF/anti-G-CSF antibody complexes drive the potent recovery and expansion of CD11b+Gr-1+ myeloid cells without compromising CD8+ T cell immune responses."** Author(s):Rubinstein MP,Salem ML,Doedens AL,Moore CJ,Chiuzan C,Rivell GL,Cole DJ,Goldrath AW PubMed Article URL:http://dx.doi.org/10.1186/1756-8722-6-75
	12-0453 was used in Flow cytometry/Cell sorting to show that Ptpn21 maintains cellular mechanics, which is correlated with its important functions in HSC niche retention and preservation of hematopoietic regeneration capacity.
Mouse / Not Cited	Cell stem cell (2019; 24: 608) **"Ptpn21 Controls Hematopoietic Stem Cell Homeostasis and Biomechanics."** Author(s):Ni F,Yu WM,Wang X,Fay ME,Young KM,Qiu Y,Lam WA,Sulchek TA,Cheng T,Scadden DT,Qu CK PubMed Article URL:http://dx.doi.org/10.1016/j.stem.2019.02.009
	12-0453 was used in Flow cytometry/Cell sorting to delineate the postnatal development of dermal macrophages and their differentiation into subsets by adapting single-cell transcriptomics, fate mapping, and imaging.
Mouse / Not Cited	Immunity (2019; 50: 1482) **"A Subset of Skin Macrophages Contributes to the Surveillance and Regeneration of Local Nerves."** Author(s):Kolter J,Feuerstein R,Zeis P,Hagemeyer N,Paterson N,d'Errico P,Baasch S,Amann L,Masuda T,Lösslein A, Gharun K,Meyer-Luehmann M,Waskow C,Franzke CW,Grün D,Lämmermann T,Prinz M,Henneke P PubMed Article URL:http://dx.doi.org/10.1016/j.immuni.2019.05.009
	12-0453 was used in Flow cytometry/Cell sorting to study long-term repopulating hematopoietic stem cells, showing that PAR1 signaling regulates the retention and recruitment of EPCR-expressing hematopoietic stem cells.
Mouse / Not Cited	Nature medicine (2015; 21: 1307) **"PAR1 signaling regulates the retention and recruitment of EPCR-expressing bone marrow hematopoietic stem cells."** Author(s):Gur-Cohen S,Itkin T,Chakrabarty S,Graf C,Kollet O,Ludin A,Golan K,Kalinkovich A,Ledergor G,Wong E, Niemeyer E,Porat Z,Erez A,Sagi I,Esmon CT,Ruf W,Lapidot T PubMed Article URL:http://dx.doi.org/10.1038/nm.3960

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Mouse / Not Cited	12-0453 was used in Flow cytometry/Cell sorting to reveal several TNF--mediated pro-survival mechanisms unique to HSCs, highlight an important role for necroptosis in HSC killing, and establish TNF- as a major pro-survival and pro-regeneration factor for HSCs. Cell stem cell (2019; 25: 357) **"TNF- Coordinates Hematopoietic Stem Cell Survival and Myeloid Regeneration."** Author(s):Yamashita M,Passegué E PubMed Article URL:http://dx.doi.org/10.1016/j.stem.2019.05.019
Mouse / Not Cited	12-0453-82 was used in Flow Cytometry to reveal crucial functions of ALKBH5 in leukemogenesis and LSC/LIC self-renewal/maintenance and highlight the therapeutic potential of targeting the ALKBH5/m6A axis. Cell stem cell (2020; 27: 64) **"RNA Demethylase ALKBH5 Selectively Promotes Tumorigenesis and Cancer Stem Cell Self-Renewal in Acute Myeloid Leukemia."** Author(s):Shen C,Sheng Y,Zhu AC,Robinson S,Jiang X,Dong L,Chen H,Su R,Yin Z,Li W,Deng X,Chen Y,Hu YC,Weng H,Huang H,Prince E,Cogle CR,Sun M,Zhang B,Chen CW,Marcucci G,He C,Qian Z,Chen J PubMed Article URL:http://dx.doi.org/10.1016/j.stem.2020.04.009
Mouse / Not Cited	12-0453-82 was used in Flow Cytometry to report here that resting, previously antigen-stimulated CD4 T cells maintain a minimalist response to dendritic cells after their peak activation in vitro. Protein & cell (2020; 11: 108) **"Contact-dependent delivery of IL-2 by dendritic cells to CD4 T cells in the contraction phase promotes their long-term survival."** Author(s):Tong D,Zhang L,Ning F,Xu Y,Hu X,Shi Y PubMed Article URL:http://dx.doi.org/10.1007/s13238-019-00662-0
Mouse / Not Cited	12-0453-82 was used in Flow Cytometry to suggest that Ppef2 is crucial to support survival of immature CD8+ DCs, while Ppef2 down-regulation during DC-maturation limits T cell responses. Frontiers in immunology (2020; 10:) **"Expression of the Phosphatase Ppef2 Controls Survival and Function of CD8⁺ Dendritic Cells."** Author(s):Zwick M,Ulas T,Cho YL,Ried C,Grosse L,Simon C,Bernhard C,Busch DH,Schultze JL,Buchholz VR,Stutte S,Brocker T PubMed Article URL:http://dx.doi.org/10.3389/fimmu.2019.00222

1 Western Blot References

Species / Dilution	Summary
Mouse / Not Cited	12-0453-82 was used in Miscellaneous, Western Blot to show Roquin-mediated control of PI3K-mTOR signaling prevents autoimmunity by restraining activation and differentiation of conventional T cells and specialization of Treg cells. Immunity (2017; 47: 1067) **"Roquin Suppresses the PI3K-mTOR Signaling Pathway to Inhibit T Helper Cell Differentiation and Conversion of Treg to Tfr Cells."** Author(s):Essig K,Hu D,Guimaraes JC,Alterauge D,Edelmann S,Raj T,Kranich J,Behrens G,Heiseke A,Floess S,Klein J,Maiser A,Marschall S,Hrab de Angelis M,Leonhardt H,Calkhoven CF,Noessner E,Brocker T,Huehn J,Krug AB,Zavolan M,Baumjohann D,Heissmeyer V PubMed Article URL:http://dx.doi.org/10.1016/j.immuni.2017.11.008

1 Immunohistochemistry References

Species / Dilution	Summary
Mouse / Not Cited	Cell (2016; 167: 1264) **"DNA Damage Signaling Instructs Polyploid Macrophage Fate in Granulomas."** Author(s):Herrtwich L,Nanda I,Evangelou K,Nikolova T,Horn V,Erny D,Stefanowski J,Rogell L,Klein C,Gharun K,Follo M,Seidl M,Kremer B,Münke N,Senges J,Fliegauf M,Aschman T,Pfeifer D,Sarrazin S,Sieweke MH,Wagner D,Dierks C,Haaf T,Ness T,Zaiss MM,Voll RE,Deshmukh SD,Prinz M,Goldmann T,Hölscher C,Hauser AE,Lopez-Contreras AJ,Grün D,Gorgoulis V,Diefenbach A,Henneke P,Triantafyllopoulou A PubMed Article URL:http://dx.doi.org/10.1016/j.cell.2016.09.054

3 Immunocytochemistry References

Species / Dilution	Summary
Mouse / 1:100	12-0453 was used in Immunohistochemistry to provide strong evidence that links microglial STAT1 inactivation to vestibular dysfunction. Journal of neuroinflammation (2012; 9:) **"IFN-gamma signaling in the central nervous system controls the course of experimental autoimmune encephalomyelitis independently of the localization and composition of inflammatory foci."** Author(s):Lee E,Chanamara S,Pleasure D,Soulika AM PubMed Article URL:http://dx.doi.org/10.1186/1742-2094-9-7

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	12-0453 was used in Immunofluorescence to study how CD8 T cells are sufficient as a sole perforin-expressing cell type to cause BBB disruption in the PIFS model.
Mouse / 1:100	PloS one (2015; 9:) **"Perforin competent CD8 T cells are sufficient to cause immune-mediated blood-brain barrier disruption."** Author(s):Johnson HL,Willenbring RC,Jin F,Manhart WA,LaFrance SJ,Pirko I,Johnson AJ PubMed Article URL:http://dx.doi.org/10.1371/journal.pone.0111401
	12-0453 was used in Immunocytochemistry to examine whether the migration and rapid proliferation of antigen-specific B cells at the T cell zone boundaries in the spleen occurs without splenic macrophages present.
Mouse / Not Cited	Journal of immunology (Baltimore, Md. : 1950) (2013; 190: 4923) **"Cutting edge: Macrophages are required for localization of antigen-activated B cells to the follicular perimeter and the subsequent germinal center response."** Author(s):Nikbakht N,Shen S,Manser T PubMed Article URL:http://dx.doi.org/10.4049/jimmunol.1300350

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