

CD45.2 Monoclonal Antibody (104), PE,
 eBioscience™

Catalog Number 12-0454-83

Product data sheet

Details	
Size	200 µg
Host/Isotope	Mouse / IgG2a, kappa
Class	Monoclonal
Type	Antibody
Clone	104
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	
Flow Cytometry (Flow)	0.5 µg/test
Published Applications	
Flow Cytometry (Flow)	See 77 publications below
Immunohistochemistry (IHC)	See 1 publications below
Immunohistochemistry (Frozen) (IHC (F))	See 1 publications below
Miscellaneous PubMed (Misc)	See 1 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 104 monoclonal antibody reacts with the mouse CD45 molecule, the leukocyte common antigen (LCA) in CD45.2-expressing mouse strains. The strains that express CD45.2 include the most commonly used mouse strains C57BL/6, BALB/c, C58, DBA/1, DBA/2, C3H/He, CBA, 129, A and AKR. CD45.2 is expressed by all leukocytes in these strains. Applications Reported: The 104 antibody has been reported for use in flow cytometric analysis. Applications Tested: The 104 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

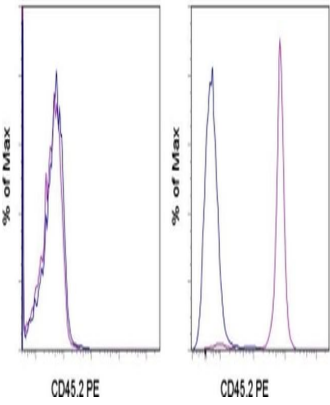
CD45.2 (LCA, leukocyte common antigen) is a receptor-type protein tyrosine phosphatase ubiquitously expressed in all nucleated hematopoietic cells, comprising approximately 10% of all surface proteins in lymphocytes. CD45.2 glycoprotein is crucial in lymphocyte development and antigen signaling, serving as an important regulator of Src-family kinases. CD45.2 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 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, CD45.2 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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CD45.2 Antibody (12-0454-83) in Flow

Staining of SJL (left) and BALB/c (right) splenocytes with 0.25 µg of Mouse IgG2a K Isotype Control PE (Product # 12-4724-81) (blue histogram) or 0.25 µg of Anti-Mouse CD45-2 PE (purple histogram). Total lymphocytes were used for analysis.

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77 Flow Cytometry References

Species / Dilution	Summary
	<p>12-0454 was used in Flow cytometry/Cell sorting to investigate the potential of QDs for imaging of DCs and as a particle-based antigen-delivery system.</p>
Mouse / Not Cited	<p>PloS one (2008; 3:) "Quantum dots for tracking dendritic cells and priming an immune response in vitro and in vivo." Author(s):Sen D,Deerinck TJ,Ellisman MH,Parker I,Cahalan MD PubMed Article URL:http://dx.doi.org/10.1371/journal.pone.0003290</p>
	<p>12-0454 was used in Flow cytometry/Cell sorting to demonstrate that IL-4-signaling is a key determinant of mast cell expansion in food allergy.</p>
Mouse / Not Cited	<p>Mucosal immunology (2013; 6: 740) "Direct effects of IL-4 on mast cells drive their intestinal expansion and increase susceptibility to anaphylaxis in a murine model of food allergy." Author(s):Burton OT,Darling AR,Zhou JS,Noval-Rivas M,Jones TG,Gurish MF,Chatila TA,Oettgen HC PubMed Article URL:http://dx.doi.org/10.1038/mi.2012.112</p>
	<p>12-0454 was used in Flow cytometry/Cell sorting to establish ex vivo culture conditions to generate hybrid Th1/17 cells, which persist long-term in vivo while maintaining effector function.</p>
Mouse / Not Cited	<p>Cell metabolism (2018; 27: 85) "CD38-NAD<sup>+</sup>Axis Regulates Immunotherapeutic Anti-Tumor T Cell Response." Author(s):Chatterjee S,Daenthanasanmak A,Chakraborty P,Wyatt MW,Dhar P,Selvam SP,Fu J,Zhang J,Nguyen H,Kang I,Toth K,Al-Homrani M,Husain M,Beeson G,Ball L,Helke K,Husain S,Garrett-Mayer E,Hardiman G,Mehrotra M,Nishimura MI,Beeson CC,Bupp MG,Wu J,Ogretmen B,Paulos CM,Rathmell J,Yu XZ,Mehrotra S PubMed Article URL:http://dx.doi.org/10.1016/j.cmet.2017.10.006</p>
	<p>12-0454 was used in Flow cytometry/Cell sorting to further define the hierarchical organisation of the developing haematopoietic stem cell lineage.</p>
Mouse / Not Cited	<p>Stem cell reports (2014; 3: 489) "Tracing the origin of the HSC hierarchy reveals an SCF-dependent, IL-3-independent CD43(-) embryonic precursor." Author(s):Rybtsov S,Batsivari A,Bilotkach K,Paruzina D,Senserrick J,Nerushev O,Medvinsky A PubMed Article URL:http://dx.doi.org/10.1016/j.stemcr.2014.07.009</p>
	<p>12-0454 was used in Flow cytometry/Cell sorting to determine if lymphocytes, particularly natural killer cells, play a role in Interleukin-15 mediated weight loss.</p>
Mouse / Not Cited	<p>PloS one (2012; 7:) "Interleukin-15 treatment induces weight loss independent of lymphocytes." Author(s):Barra NG,Chew MV,Reid S,Ashkar AA PubMed Article URL:http://dx.doi.org/10.1371/journal.pone.0039553</p>
	<p>12-0454 was used in Flow cytometry/Cell sorting to show that targeted inhibition of DCs in EAE-infected mice leads to a decrease in CNS infiltration of pathogenic Ag-specific T cells.</p>
Mouse / Not Cited	<p>Journal of immunology (Baltimore, Md. : 1950) (2009; 182: 4192) "Signal transduction inhibition of APCs diminishes th17 and Th1 responses in experimental autoimmune encephalomyelitis." Author(s):Skarica M,Wang T,McCadden E,Kardian D,Calabresi PA,Small D,Whartenby KA PubMed Article URL:http://dx.doi.org/10.4049/jimmunol.0803631</p>
	<p>12-0454 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.</p>
Mouse / 1:100	<p>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</p>
	<p>12-0454 was used in Flow cytometry/Cell sorting to study the mechanisms governing haematopoietic progenitor cell mobilisation.</p>
Mouse / Not Cited	<p>The Journal of clinical investigation (2009; 119: 492) "MT1-MMP and RECK are involved in human CD34+ progenitor cell retention, egress, and mobilization." Author(s):Vagima Y,Avigdor A,Goichberg P,Shivtiel S,Tesio M,Kalinkovich A,Golan K,Dar A,Kollet O,Petit I,Perl O,Rosenthal E,Resnick I,Hardan I,Gellman YN,Naor D,Nagler A,Lapidot T PubMed Article URL:http://dx.doi.org/10.1172/JCI36541</p>

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	12-0454 was used in Flow cytometry/Cell sorting to examine the effect of transforming growth factor 1 on haematopoietic stem cell function.
Mouse / Not Cited	Stem cell reports (2018; 11: 274) "TGF-1 Negatively Regulates the Number and Function of Hematopoietic Stem Cells." Author(s):Wang X,Dong F,Zhang S,Yang W,Yu W,Wang Z,Zhang S,Wang J,Ma S,Wu P,Gao Y,Dong J,Tang F,Cheng T, Ema H PubMed Article URL: http://dx.doi.org/10.1016/j.stemcr.2018.05.017
	12-0454 was used in Flow cytometry/Cell sorting to demonstrate a unique function for lamina propria-derived CD103(+) mesenteric lymph node dendritic cells in the generation of gut-tropic effector T cells.
Mouse / Not Cited	The Journal of experimental medicine (2005; 202: 1063) "Functional specialization of gut CD103+ dendritic cells in the regulation of tissue-selective T cell homing." Author(s):Johansson-Lindbom B,Svensson M,Pabst O,Palmqvist C,Marquez G,Förster R,Agace WW PubMed Article URL: http://dx.doi.org/10.1084/jem.20051100
	12-0454 was used in Flow cytometry/Cell sorting to study the distribution and dynamics of natural killer T cells within the spleen.
Mouse / Not Cited	The EMBO journal (2012; 31: 2378) "The location of splenic NKT cells favours their rapid activation by blood-borne antigen." Author(s):Barral P,Sánchez-Niño MD,van Rooijen N,Cerundolo V,Batista FD PubMed Article URL: http://dx.doi.org/10.1038/emboj.2012.87
	12-0454 was used in Flow cytometry/Cell sorting to demonstrate that imprinting of CD103(+) DCs is itself critically dependent on vitamin A and occurs locally within the small intestine (SI).
Mouse / Not Cited	Mucosal immunology (2011; 4: 438) "Bile retinoids imprint intestinal CD103+ dendritic cells with the ability to generate gut-tropic T cells." Author(s):Jaensson-Gyllenbäck E,Kotarsky K,Zapata F,Persson EK,Gundersen TE,Blomhoff R,Agace WW PubMed Article URL: http://dx.doi.org/10.1038/mi.2010.91
	12-0454-82 was used in Flow Cytometry to identify the role for CD8+ T cells in infection-associated cachexia.
Mouse / Not Cited	Nature immunology (2019; 20: 701) "CD8<sup>+</sup> T cells induce cachexia during chronic viral infection." Author(s):Baazim H,Schweiger M,Moschinger M,Xu H,Scherer T,Popa A,Gallage S,Ali A,Khamina K,Kosack L,Vilagós B, Smyth M,Lercher A,Friske J,Merkler D,Aderem A,Helbich TH,Heikenwälder M,Lang PA,Zechner R,Bergthaler A PubMed Article URL: http://dx.doi.org/10.1038/s41590-019-0397-y
	12-0454 was used in Flow cytometry/Cell sorting to examine if the TGF1 inhibitor, SB431542, can mitigate ionizing radiation-induced bone marrow suppression, showing that inhibition has a protective effect.
Mouse / Not Cited	Journal of radiation research (2013; 54: 630) "Inhibiting TGF1 has a protective effect on mouse bone marrow suppression following ionizing radiation exposure in vitro." Author(s):Zhang H,Wang YA,Meng A,Yan H,Wang X,Niu J,Li J,Wang H PubMed Article URL: http://dx.doi.org/10.1093/jrr/rrs142
	12-0454 was used in Flow cytometry/Cell sorting to show that naive CD4 T cells with the highest avidity for self are prone to differentiate into regulatory T cells.
Mouse / Not Cited	Nature communications (2014; 4:) "Highly self-reactive naive CD4 T cells are prone to differentiate into regulatory T cells." Author(s):Martin B,Auffray C,Delpoux A,Pommier A,Durand A,Charvet C,Yakonowsky P,de Boysson H,Bonilla N, Audemard A,Sparwasser T,Salomon BL,Malissen B,Lucas B PubMed Article URL: http://dx.doi.org/10.1038/ncomms3209
	12-0454 was used in Flow cytometry/Cell sorting to identify novel roles for CCR7 during intrathymic T cell development, highlighting its importance in enabling multiple T cell lineages to access the thymic medulla.
Mouse / Not Cited	Journal of immunology (Baltimore, Md. : 1950) (2014; 193: 1204) "Differential requirement for CCR4 and CCR7 during the development of innate and adaptive T cells in the adult thymus." Author(s):Cowan JE,McCarthy NI,Parnell SM,White AJ,Bacon A,Serge A,Irla M,Lane PJ,Jenkinson EJ,Jenkinson WE, Anderson G PubMed Article URL: http://dx.doi.org/10.4049/jimmunol.1400993
	12-0454 was used in Flow cytometry/Cell sorting to conclude that during a limited window early in development, definitive MC precursors efficiently enter the skin, expand, and self-maintain, occupying stable territories.
Mouse / Not Cited	The Journal of investigative dermatology (2020; 140: 2433) "Mast Cells Occupy Stable Clonal Territories in Adult Steady-State Skin." Author(s):Weitzmann A,Naumann R,Dudeck A,Zerjatke T,Gerbaulet A,Roers A PubMed Article URL: http://dx.doi.org/10.1016/j.jid.2020.03.963

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	<p>12-0454 was used in Flow cytometry/Cell sorting to identify BATF as a regulator of tissue regulatory T cells and suggest that sequence-specific perturbations of Foxp3-DNA interactions can influence specific facets of Treg physiology and the immunopathologies.</p>
Human / Not Cited	<p>Immunity (2017; 47: 268) "Analyses of a Mutant Foxp3 Allele Reveal BATF as a Critical Transcription Factor in the Differentiation and Accumulation of Tissue Regulatory T Cells." Author(s):Hayatsu N,Miyao T,Tachibana M,Murakami R,Kimura A,Kato T,Kawakami E,Endo TA,Setoguchi R,Watarai H,Nishikawa T,Yasuda T,Yoshida H,Hori S PubMed Article URL:http://dx.doi.org/10.1016/j.immuni.2017.07.008</p>
	<p>12-0454 was used in Flow cytometry/Cell sorting to investigate the role of the peripheral B cell pro-survival cytokine BAFF /BLyS in the regulation of immunological tolerance and autoreactive cells.</p>
Mouse / Not Cited	<p>Journal of immunology (Baltimore, Md. : 1950) (2011; 187: 37) "Cellular competition independent of BAFF/B lymphocyte stimulator results in low frequency of an autoreactive clonotype in mature polyclonal B cell compartments." Author(s):Nikbakht N,Migone TS,Ward CP,Manser T PubMed Article URL:http://dx.doi.org/10.4049/jimmunol.1003924</p>
	<p>12-0454-82 was used in Flow cytometry/Cell sorting to reveal a crucial role for PTBP1 in regulating CD8 T-cell activation.</p>
Mouse / Not Cited	<p>European journal of immunology (2022; 52: 1058) "Polypyrimidine tract binding protein 1 regulates the activation of mouse CD8 T cells." Author(s):D'Angeli V,Monzón-Casanova E,Matheson LS,Gizlenci Ö,Petkau G,Gooding C,Berrens RV,Smith CWJ,Turner M PubMed Article URL:http://dx.doi.org/10.1002/eji.202149781</p>
	<p>12-0454 was used in Flow cytometry/Cell sorting to show that the trimeric transcription factor NF-Y is critical for the survival of cycling, but not quiescent hematopoietic stem cells.</p>
Mouse / Not Cited	<p>Blood (2012; 119: 1380) "NF-Y is necessary for hematopoietic stem cell proliferation and survival." Author(s):Bungartz G,Land H,Scadden DT,Emerson SG PubMed Article URL:http://dx.doi.org/10.1182/blood-2011-06-359406</p>
	<p>12-0454-82 was used in Flow cytometry/Cell sorting to investigate whether inflammasomes provide sufficient signals to activate adaptive immunity.</p>
Mouse / 1:300	<p>eLife (2021; 10:) "Inflammasome activation leads to cDC1-independent cross-priming of CD8 T cells by epithelial cell-derived antigen." Author(s):Deets KA,Nichols Doyle R,Rauch I,Vance RE PubMed Article URL:http://dx.doi.org/10.7554/eLife.72082</p>
	<p>12-0454 was used in Flow cytometry/Cell sorting to provide a framework for effective vaccination against cancer-associated herpesviruses through the elimination of latency and key immune evasion mechanisms from the pathogen.</p>
Mouse / 1:200	<p>NPJ vaccines (2020; 5:) "Deletion of immune evasion genes provides an effective vaccine design for tumor-associated herpesviruses." Author(s):Brar G,Farhat NA,Sukhina A,Lam AK,Kim YH,Hsu T,Tong L,Lin WW,Ware CF,Blackman MA,Sun R,Wu TT PubMed Article URL:http://dx.doi.org/10.1038/s41541-020-00251-x</p>
	<p>12-0454 was used in Flow cytometry/Cell sorting to highlight the importance of analysing metabolism in effector lymphocytes within in vivo inflammatory contexts.</p>
Mouse / 1:500	<p>Journal of immunology (Baltimore, Md. : 1950) (2017; 198: 2735) "Inhibiting Oxidative Phosphorylation In Vivo Restrains Th17 Effector Responses and Ameliorates Murine Colitis." Author(s):Franchi L,Monteleone I,Hao LY,Spahr MA,Zhao W,Liu X,Demock K,Kulkarni A,Lesch CA,Sanchez B,Carter L,Marafini I,Hu X,Mashadova O,Yuan M,Asara JM,Singh H,Lyssiotis CA,Monteleone G,Opipari AW,Glick GD PubMed Article URL:http://dx.doi.org/10.4049/jimmunol.1600810</p>
	<p>12-0454 was used in Flow cytometry/Cell sorting to identify secreted signals underlying human HSC development, combining spatial transcriptomics analysis of dorsoventral polarized signaling in the aorta with gene expression profiling of sorted cell populations and single cells.</p>
Mouse / Not Cited	<p>Cell stem cell (2020; 27: 822) "Multi-layered Spatial Transcriptomics Identify Secretory Factors Promoting Human Hematopoietic Stem Cell Development." Author(s):Crosse EI,Gordon-Keylock S,Rybtsov S,Binagui-Casas A,Felchle H,Nnadi NC,Kirschner K,Chandra T,Tamagno S,Webb DJ,Rossi F,Anderson RA,Medvinsky A PubMed Article URL:http://dx.doi.org/10.1016/j.stem.2020.08.004</p>

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Mouse / Not Cited	<p>Journal of leukocyte biology (2016; 99: 659) "Recruited monocytes modulate malaria-induced lung injury through CD36-mediated clearance of sequestered infected erythrocytes." Author(s):Lagassé HA,Anidi IU,Craig JM,Limjunyawong N,Poupore AK,Mitzner W,Scott AL PubMed Article URL:http://dx.doi.org/10.1189/jlb.4HI0315-130RRR</p>
	<p>12-0454 was used in Flow cytometry/Cell sorting to analyse the heterogenous proliferative response of T cell clones to lymphopenia using in vivo and mathematical models.</p>
Mouse / Not Cited	<p>Journal of immunology (Baltimore, Md. : 1950) (2013; 190: 3985) "Clonally diverse T cell homeostasis is maintained by a common program of cell-cycle control." Author(s):Hogan T,Shuvaev A,Commenges D,Yates A,Callard R,Thiebaut R,Seddon B PubMed Article URL:http://dx.doi.org/10.4049/jimmunol.1203213</p>
	<p>12-0454 was used in Flow cytometry/Cell sorting to propose a model in which T cells undergoing lymphopenia-induced proliferation upregulate STAT1 protein, switching on an alternate IL-7-dependent program.</p>
Mouse / Not Cited	<p>JCI insight (2017; 2:) "IL-7-dependent STAT1 activation limits homeostatic CD4+ T cell expansion." Author(s):Le Saout C,Luckey MA,Villarino AV,Smith M,Hasley RB,Myers TG,Imamichi H,Park JH,O'Shea JJ,Lane HC,Catalfamo M PubMed Article URL:http://dx.doi.org/10.1172/jci.insight.96228</p>
	<p>12-0454 was used in Flow cytometry/Cell sorting to reveal the selective upregulation of Helios during Th2 and TFh responses to alum-protein vaccines.</p>
Mouse / Not Cited	<p>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,MacIennan IC,Mohr E PubMed Article URL:http://dx.doi.org/10.1371/journal.pone.0020731</p>
	<p>12-0454 was used in Flow cytometry/Cell sorting to show that keratinocyte-produced IL-23 is sufficient to cause a chronic skin inflammation with an IL-17 profile in mice.</p>
Mouse / 1:100	<p>Nature communications (2018; 9:) "Epigenetic control of IL-23 expression in keratinocytes is important for chronic skin inflammation." Author(s):Li H,Yao Q,Mariscal AG,Wu X,Hülse J,Pedersen E,Helin K,Waisman A,Vinkel C,Thomsen SF,Avgustinova A,Benitah SA,Lovato P,Norsgaard H,Mortensen MS,Veng L,Rozell B,Brakebusch C PubMed Article URL:http://dx.doi.org/10.1038/s41467-018-03704-z</p>
	<p>12-0454 was used in Flow cytometry/Cell sorting to study the role of c-Maf as a regulator of the expression of cytokine-encoding genes.</p>
Mouse / Not Cited	<p>Nature immunology (2018; 19: 497) "c-Maf controls immune responses by regulating disease-specific gene networks and repressing IL-2 in CD4<sup>+</sup> T cells." Author(s):Gabryšová L,Alvarez-Martinez M,Luisier R,Cox LS,Sodenkamp J,Hosking C,Pérez-Mazliah D,Whicher C,Kannan Y,Potempa K,Wu X,Bhaw L,Wende H,Sieweke MH,Elgar G,Wilson M,Briscoe J,Metzis V,Langhorne J,Luscombe NM,O'Garra A PubMed Article URL:http://dx.doi.org/10.1038/s41590-018-0083-5</p>
	<p>12-0454 was used in Flow cytometry/Cell sorting to investigate the effects of loss of Id genes on adult endothelial cell.</p>
Mouse / Not Cited	<p>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</p>
	<p>12-0454 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.</p>
Human / 1:100	
Mouse / 1:100	<p>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</p>

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	12-0454 was used in Flow cytometry/Cell sorting to suggest a potential for treating haematological cancers harbouring U2AF1 mutations with pre-mRNA splicing modulators like sudemycins.
Mouse / Not Cited	<p>Nature communications (2017; 8:)</p> <p>"Mutant U2AF1-expressing cells are sensitive to pharmacological modulation of the spliceosome."</p> <p>Author(s):Shirai CL,White BS,Tripathi M,Tapia R,Ley JN,Ndonwi M,Kim S,Shao J,Carver A,Saez B,Fulton RS,Fronick C,O'Laughlin M,Lagiseti C,Webb TR,Graubert TA,Walter MJ</p> <p>PubMed Article URL:http://dx.doi.org/10.1038/ncomms14060</p>
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Mouse / Not Cited	<p>Nature (2013; 502: 637)</p> <p>"Arteriolar niches maintain haematopoietic stem cell quiescence."</p> <p>Author(s):Kunisaki Y,Bruns I,Scheiermann C,Ahmed J,Pinho S,Zhang D,Mizoguchi T,Wei Q,Lucas D,Ito K,Mar JC,Bergman A,Frenette PS</p> <p>PubMed Article URL:http://dx.doi.org/10.1038/nature12612</p>
	12-0454 was used in Flow cytometry/Cell sorting to provide molecular insights into the role of Rho GTPases in TGF signalling and understanding of mesenchymal stem cells in fibrosis.
Mouse / Not Cited	<p>The Journal of biological chemistry (2018; 293: 9358)</p> <p>"RhoA, Rac1, and Cdc42 differentially regulate SMA and collagen I expression in mesenchymal stem cells."</p> <p>Author(s):Ge J,Burnier L,Adamopoulou M,Kwa MQ,Schaks M,Rottner K,Brakebusch C</p> <p>PubMed Article URL:http://dx.doi.org/10.1074/jbc.RA117.001113</p>
	12-0454 was used in Flow cytometry/Cell sorting to examine if isorhapontigenin and heyneanol-A, two analogues of resveratrol, could mitigate IR-induced BM suppression.
Mouse / Not Cited	<p>BioMed research international (2015; 2014:)</p> <p>"Administration of the resveratrol analogues isorhapontigenin and heyneanol-A protects mice hematopoietic cells against irradiation injuries."</p> <p>Author(s):Wang H,Yang YL,Zhang H,Yan H,Wu XJ,Zhang CZ</p> <p>PubMed Article URL:http://dx.doi.org/10.1155/2014/282657</p>
	12-0454 was used in Flow cytometry/Cell sorting to investigate how Notch signalling regulates hematopoietic stem cell (HSC) formation in the embryo, showing that HSCs become Notch independent by the end of maturation in the aorta-gonad-mesonephros region.
Mouse / Not Cited	<p>Blood (2016; 128: 1567)</p> <p>"Developing HSCs become Notch independent by the end of maturation in the AGM region."</p> <p>Author(s):Souilhol C,Lendinez JG,Rybtsov S,Murphy F,Wilson H,Hills D,Batsivari A,Binagui-Casas A,McGarvey AC,MacDonald HR,Kageyama R,Siebel C,Zhao S,Medvinsky A</p> <p>PubMed Article URL:http://dx.doi.org/10.1182/blood-2016-03-708164</p>
	12-0454 was used in Flow cytometry/Cell sorting to investigate the mechanism of capture and follicular delivery of blood-borne antigens in the splenic marginal zone, showing that it is mediated by follicular shuttling of B cells.
Mouse / Not Cited	<p>Nature immunology (2008; 9: 54)</p> <p>"Follicular shuttling of marginal zone B cells facilitates antigen transport."</p> <p>Author(s):Cinamon G,Zachariah MA,Lam OM,Foss FW,Cyster JG</p> <p>PubMed Article URL:http://dx.doi.org/10.1038/ni1542</p>
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Mouse / Not Cited	<p>The Journal of clinical investigation (2003; 112: 1796)</p> <p>"Obesity is associated with macrophage accumulation in adipose tissue."</p> <p>Author(s):Weisberg SP,McCann D,Desai M,Rosenbaum M,Leibel RL,Ferrante AW</p> <p>PubMed Article URL:http://dx.doi.org/10.1172/JCI19246</p>
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Mouse / Not Cited	<p>Mucosal immunology (2008; 1: 38)</p> <p>"Retinoic acid receptor signaling levels and antigen dose regulate gut homing receptor expression on CD8+ T cells."</p> <p>Author(s):Svensson M,Johansson-Lindbom B,Zapata F,Jaensson E,Austenaa LM,Blomhoff R,Agace WW</p> <p>PubMed Article URL:http://dx.doi.org/10.1038/mi.2007.4</p>
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Mouse / Not Cited	<p>Journal of immunology (Baltimore, Md. : 1950) (2008; 181: 4580)</p> <p>"Donor deficiency of decay-accelerating factor accelerates murine T cell-mediated cardiac allograft rejection."</p> <p>Author(s):Pavlov V,Raedler H,Yuan S,Leisman S,Kwan WH,Lalli PN,Medof ME,Heeger PS</p> <p>PubMed Article URL:http://dx.doi.org/10.4049/jimmunol.181.7.4580</p>

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	<p>12-0454-82 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.</p>
Mouse / Not Cited	<p>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</p>
Mouse / Not Cited	<p>12-0454 was used in Flow cytometry/Cell sorting to investigate whether CD8+ T cells play a non-redundant role in driving bone marrow failure.</p>
Mouse / Not Cited	<p>Journal of autoimmunity (2016; 75: 58) "CD8⁺ T cells drive autoimmune hematopoietic stem cell dysfunction and bone marrow failure." Author(s):Gravano DM,AI-Kuhlani M,Davini D,Sanders PD,Manilay JO,Hoyer KK PubMed Article URL:http://dx.doi.org/10.1016/j.jaut.2016.07.007</p>
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Mouse / Not Cited	<p>12-0454 was used in Flow cytometry/Cell sorting to show that pre-HSCs are broadly distributed through the wall of the dorsal aorta, and propose a simple model for HSC development in the AGM region.</p>
Mouse / Not Cited	<p>The Journal of experimental medicine (2011; 208: 1305) "Hierarchical organization and early hematopoietic specification of the developing HSC lineage in the AGM region." Author(s):Rybtsov S,Sobiesiak M,Taoudi S,Souilhol C,Senserrich J,Liakhovitskaia A,Ivanovs A,Frampton J,Zhao S,Medvinsky A PubMed Article URL:http://dx.doi.org/10.1084/jem.20102419</p>
Mouse / Not Cited	<p>12-0454 was used in Flow cytometry/Cell sorting to identify a significant defect in macrophage proliferation in mice lacking leukocyte transmembrane protease, ADAM17.</p>
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Mouse / 1:40	<p>12-0454-82 was used in Flow Cytometry to study the biological mechanisms that drive hypomethylating agent therapy failure at the stem-cell level to uncover vulnerabilities in the disease and halt its evolution.</p> <p>Nature medicine (2022; 28: 557)</p> <p>"Stem cell architecture drives myelodysplastic syndrome progression and predicts response to venetoclax-based therapy."</p> <p>Author(s):Ganan-Gomez I,Yang H,Ma F,Montalban-Bravo G,Thongon N,Marchica V,Richard-Carpentier G,Chien K, Manyam G,Wang F,Alfonso A,Chen S,Class C,Kanagal-Shamanna R,Ingram JP,Ogoti Y,Rose A,Loghavi S,Lockyer P, Cambo B,Muftuoglu M,Schneider S,Adema V,McLellan M,Garza J,Marchesini M,Giuliani N,Pellegrini M,Wang J,Walker J, Li Z,Takahashi K,Leverson JD,Bueso-Ramos C,Andreeff M,Clise-Dwyer K,Garcia-Manero G,Colla S</p> <p>PubMed Article URL:http://dx.doi.org/10.1038/s41591-022-01696-4</p>
Mouse / Not Cited	<p>12-0454 was used in Flow cytometry/Cell sorting to provide further insights into vaccine-induced multifaceted mucosal T cell immunity with implications in the development of vaccines against respiratory pathogens, including influenza virus and SARS-CoV-2.</p> <p>Cell reports. Medicine (2020; 1:)</p> <p>"Programming Multifaceted Pulmonary T Cell Immunity by Combination Adjuvants."</p> <p>Author(s):Marinaik CB,Kingstad-Bakke B,Lee W,Hatta M,Sonsalla M,Larsen A,Neldner B,Gasper DJ,Kedl RM,Kawaoka Y, Suresh M</p> <p>PubMed Article URL:http://dx.doi.org/10.1016/j.xcrm.2020.100095</p>
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Mouse / Not Cited	<p>12-0454 was used in Flow cytometry/Cell sorting to study how several signalling pathways interact to regulate the emergence of haematopoietic stem cells in the aorta.</p> <p>Nature communications (2016; 7:)</p> <p>"Inductive interactions mediated by interplay of asymmetric signalling underlie development of adult haematopoietic stem cells."</p> <p>Author(s):Souilhol C,Gonneau C,Lendinez JG,Batsivari A,Rybtsov S,Wilson H,Morgado-Palacin L,Hills D,Taoudi S, Antonchuk J,Zhao S,Medvinsky A</p> <p>PubMed Article URL:http://dx.doi.org/10.1038/ncomms10784</p>

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Mouse / Not Cited	Nature metabolism (2020; 2: 1265) "Senescent cells promote tissue NAD<sup>+</sup> decline during ageing via the activation of CD38<sup>+</sup> macrophages." Author(s):Covarrubias AJ,Kale A,Perrone R,Lopez-Dominguez JA,Pisco AO,Kasler HG,Schmidt MS,Heckenbach I,Kwok R,Wiley CD,Wong HS,Gibbs E,Iyer SS,Basisty N,Wu Q,Kim IJ,Silva E,Vitangcol K,Shin KO,Lee YM,Riley R,Ben-Sahra I,Ott M,Schilling B,Scheibye-Knudsen M,Ishihara K,Quake SR,Newman J,Brenner C,Campisi J,Verdin E PubMed Article URL:http://dx.doi.org/10.1038/s42255-020-00305-3
Mouse / Not Cited	12-0454 was used in Flow cytometry/Cell sorting to investigate the role of CD4(+) T cells in priming CD8(+) memory T cells, showing that autocrine IL-2 is required for secondary population expansion.
Mouse / Not Cited	Nature immunology (2011; 12: 908) "Autocrine IL-2 is required for secondary population expansion of CD8(+) memory T cells." Author(s):Feau S,Arens R,Togher S,Schoenberger SP PubMed Article URL:http://dx.doi.org/10.1038/ni.2079

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	12-0454 was used in Flow cytometry/Cell sorting to demonstrate that the atypical activation of Langerhans cells by human papillomavirus may contribute to an immune suppressive microenvironment.
Mouse / Not Cited	<p>PloS one (2016; 10:)</p> <p>"Langerhans cell homeostasis and activation is altered in hyperplastic human papillomavirus type 16 E7 expressing epidermis."</p> <p>Author(s):Abd Warif NM,Stoitzner P,Leggatt GR,Mattarollo SR,Frazer IH,Hibma MH</p> <p>PubMed Article URL:http://dx.doi.org/10.1371/journal.pone.0127155</p>
	12-0454 was used in Flow cytometry/Cell sorting to support a role for cyclin E1 in controlling the exit from quiescence in hematopoietic stem cells.
Mouse / Not Cited	<p>Cell cycle (Georgetown, Tex.) (2013; 12: 3663)</p> <p>"A non-redundant function of cyclin E1 in hematopoietic stem cells."</p> <p>Author(s):Campaner S,Viale A,De Fazio S,Doni M,De Franco F,D'Artista L,Sardella D,Pelicci PG,Amati B</p> <p>PubMed Article URL:http://dx.doi.org/10.4161/cc.26584</p>
	12-0454 was used in Flow cytometry/Cell sorting to define the mechanisms behind immune cell maintenance in HIV infected individuals.
Mouse / Not Cited	<p>PLoS pathogens (2014; 10:)</p> <p>"Chronic exposure to type-I IFN under lymphopenic conditions alters CD4 T cell homeostasis."</p> <p>Author(s):Le Saout C,Hasley RB,Imamichi H,Tcheung L,Hu Z,Luckey MA,Park JH,Durum SK,Smith M,Rupert AW,Sneller MC,Lane HC,Catalfamo M</p> <p>PubMed Article URL:http://dx.doi.org/10.1371/journal.ppat.1003976</p>
	12-0454 was used in Flow cytometry/Cell sorting to study tamoxifen-inducible Runx1 inactivation in vivo.
Mouse / Not Cited	<p>Stem cell reports (2018; 11: 784)</p> <p>"Analysis of Runx1 Using Induced Gene Ablation Reveals Its Essential Role in Pre-liver HSC Development and Limitations of an In Vivo Approach."</p> <p>Author(s):Senserrick J,Batsivari A,Rybtsov S,Gordon-Keylock S,Souilhol C,Buchholz F,Hills D,Zhao S,Medvinsky A</p> <p>PubMed Article URL:http://dx.doi.org/10.1016/j.stemcr.2018.08.004</p>
	12-0454-82 was used in Flow cytometry/Cell sorting to reveal proteolysis of non-canonical RAS proteins as novel regulators of HSC self-renewal, define the function of RIT1 and LZTR1 mutations in leukemia, and identify means to overcome drug resistance due to LZTR1 downregulation.
Human / 1:200	<p>Cancer discovery (2022; 12: 2434)</p> <p>"Impaired Proteolysis of Noncanonical RAS Proteins Drives Clonal Hematopoietic Transformation."</p> <p>Author(s):Chen S,Vedula RS,Cuevas-Navarro A,Lu B,Hogg SJ,Wang E,Benbarche S,Knorr K,Kim WJ,Stanley RF,Cho H,Erickson C,Singer M,Cui D,Tittley S,Durham BH,Pavletich TS,Fiala E,Walsh MF,Inoue D,Monette S,Taylor J,Rosen N,McCormick F,Lindsley RC,Castel P,Abdel-Wahab O</p> <p>PubMed Article URL:http://dx.doi.org/10.1158/2159-8290.CD-21-1631</p>
	12-0454-82 was used in Flow Cytometry to demonstrate if fat mass and obesity-associated protein plays critical roles in cancer stem cell self-renewal and immune evasion.
Human / Not Cited	<p>Cancer cell (2020; 38: 79)</p> <p>"Targeting FTO Suppresses Cancer Stem Cell Maintenance and Immune Evasion."</p> <p>Author(s):Su R,Dong L,Li Y,Gao M,Han L,Wunderlich M,Deng X,Li H,Huang Y,Gao L,Li C,Zhao Z,Robinson S,Tan B,Qing Y,Qin X,Prince E,Xie J,Qin H,Li W,Shen C,Sun J,Kulkarni P,Weng H,Huang H,Chen Z,Zhang B,Wu X,Olsen MJ,Muschen M,Marcucci G,Salgia R,Li L,Fathi AT,Li Z,Mulloy JC,Wei M,Horne D,Chen J</p> <p>PubMed Article URL:http://dx.doi.org/10.1016/j.ccell.2020.04.017</p>
	12-0454 was used in Flow cytometry/Cell sorting to study the mutations in IDH2 and SRSF2 that together promote leukaemogenesis through coordinated effects on the epigenome and RNA splicing.
Mouse / 1:200	<p>Nature (2019; 574: 273)</p> <p>"Coordinated alterations in RNA splicing and epigenetic regulation drive leukaemogenesis."</p> <p>Author(s):Yoshimi A,Lin KT,Wiseman DH,Rahman MA,Pastore A,Wang B,Lee SC,Micol JB,Zhang XJ,de Botton S,Penard-Lacronique V,Stein EM,Cho H,Miles RE,Inoue D,Albrecht TR,Somervaille TCP,Batta K,Amaral F,Simeoni F,Wilks DP,Cargo C,Intlekofer AM,Levine RL,Dvinge H,Bradley RK,Wagner EJ,Krainer AR,Abdel-Wahab O</p> <p>PubMed Article URL:http://dx.doi.org/10.1038/s41586-019-1618-0</p>
	12-0454 was used in Flow cytometry/Cell sorting to test the role of BCR expression plays in receptor editing in an polyclonal, in vivo population of B cells.
Mouse / Not Cited	<p>Journal of immunology (Baltimore, Md. : 1950) (2012; 188: 47)</p> <p>"Direct reduction of antigen receptor expression in polyclonal B cell populations developing in vivo results in light chain receptor editing."</p> <p>Author(s):Shen S,Manser T</p> <p>PubMed Article URL:http://dx.doi.org/10.4049/jimmunol.1102109</p>

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	12-0454 was used in Flow cytometry/Cell sorting to study how CD19 CAR immune pressure induces a B-precursor acute lymphoblastic leukaemia lineage switch.
Mouse / Not Cited	<p>Nature communications (2016; 7:)</p> <p>"CD19 CAR immune pressure induces B-precursor acute lymphoblastic leukaemia lineage switch exposing inherent leukaemic plasticity."</p> <p>Author(s):Jacob y E,Nguyen SM,Fontaine TJ,Welp K,Gryder B,Qin H,Yang Y,Chien CD,Seif AE,Lei H,Song YK,Khan J, Lee DW,Mackall CL,Gardner RA,Jensen MC,Shern JF,Fry TJ</p> <p>PubMed Article URL:http://dx.doi.org/10.1038/ncomms12320</p>
Mouse / Not Cited	<p>12-0454 was used in Flow cytometry/Cell sorting to demonstrate a differential requirement for the thymic medulla in relation to CD4 conventional and Foxp3(+) thymocyte lineages.</p> <p>The Journal of experimental medicine (2013; 210: 675)</p> <p>"The thymic medulla is required for Foxp3+ regulatory but not conventional CD4+ thymocyte development."</p> <p>Author(s):Cowan JE,Parnell SM,Nakamura K,Caamano JH,Lane PJ,Jenkinson EJ,Jenkinson WE,Anderson G</p> <p>PubMed Article URL:http://dx.doi.org/10.1084/jem.20122070</p>
Mouse / Not Cited	<p>12-0454 was used in Flow cytometry/Cell sorting to identify additional therapeutic chemokine targets for immune-mediated nephritis.</p> <p>Journal of the American Society of Nephrology : JASN (2008; 19: 1177)</p> <p>"CXCL9, but not CXCL10, promotes CXCR3-dependent immune-mediated kidney disease."</p> <p>Author(s):Menke J,Zeller GC,Kikawada E,Means TK,Huang XR,Lan HY,Lu B,Farber J,Luster AD,Kelley VR</p> <p>PubMed Article URL:http://dx.doi.org/10.1681/ASN.2007111179</p>
1 Immunohistochemistry References	
Species / Dilution	Summary
Mouse / Not Cited	<p>12-0454-82 was used in Immunohistochemistry to conclude that SNAI2 is a critical regulator of the transcriptional network maintaining MSPCs by the suppression of osteopontin expression.</p> <p>Developmental cell (2020; 53: 503)</p> <p>"Snai2 Maintains Bone Marrow Niche Cells by Repressing Osteopontin Expression."</p> <p>Author(s):Wei Q,Nakahara F,Asada N,Zhang D,Gao X,Xu C,Alfieri A,Brodin NP,Zimmerman SE,Mar JC,Guha C,Guo W, Frenette PS</p> <p>PubMed Article URL:http://dx.doi.org/10.1016/j.devcel.2020.04.012</p>
1 Immunohistochemistry (Frozen) References	
Species / Dilution	Summary
Mouse / Not Cited	<p>12-0454 was used in Immunofluorescence on frozen tissues to study the proliferation, differentiation, and microenvironmental locale in populations of pre-germinal centre B cells responding to antigen.</p> <p>Immunity (2009; 30: 599)</p> <p>"Initial clonal expansion of germinal center B cells takes place at the perimeter of follicles."</p> <p>Author(s):Coffey F,Alabyev B,Manser T</p> <p>PubMed Article URL:http://dx.doi.org/10.1016/j.immuni.2009.01.011</p>
1 Miscellaneous PubMed References	
Species / Dilution	Summary
Mouse / Not Cited	<p>12-0454 was used in Magnetic cell separation to show that Sle1 perturbs the action of peripheral tolerance checkpoints operative on antinuclear Ag B cells in both the AFC and GC pathways in a cell autonomous fashion.</p> <p>Journal of immunology (Baltimore, Md. : 1950) (2009; 183: 5716)</p> <p>"The lupus susceptibility locus Sle1 breaches peripheral B cell tolerance at the antibody-forming cell and germinal center checkpoints."</p> <p>Author(s):Vuyyuru R,Mohan C,Manser T,Rahman ZS</p> <p>PubMed Article URL:http://dx.doi.org/10.4049/jimmunol.0804215</p>

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