Major Resources Table

In order to allow validation and replication of experiments, all essential research materials listed in the Methods should be included in the Major Resources Table below. Authors are encouraged to use public repositories for protocols, data, code, and other materials and provide persistent identifiers and/or links to repositories when available. Authors may add or delete rows as needed.

Animals (in vivo studies)

Species	Vendor or Source	Background Strain	Sex	Persistent ID / URL
Mouse	TACONIC Bioscience, Inc.	C57BL/6Ntac	Male	
Mouse	Bred from genetically modified	CARMN ^{-/-}	Male	
	mouse lines described below			

Genetically Modified Animals

	Species	Vendor or	Background Strain	Other	Persistent ID / URL
		Source		Information	
Parent - Male	Mouse	TACONIC	CARMN ^{-/+}		
		Bioscience, Inc.			
Parent - Female	Mouse	TACONIC	CARMN ^{-/+}		
		Bioscience, Inc.			

Antibodies

Target antigen	Vendor or Source	Catalog #	Working concentration	Lot # (preferred but not required)	Persistent ID / URL
PerCP anti- mouse CD45 Antibody, clone 30-F11	Biolegend	103129	1:100 (FACs)		https://www.biolegend.com/en- us/products/percp-anti-mouse-cd45-antibody- 4265
V500 Rat anti- Mouse CD45R/B220 Clone RA3- 6B2	BD Horizon	561227	1:50 (FACs)		https://www.bdbiosciences.com/eu/applications/research/stem-cell-research/hematopoietic-stem-cell-markers/mouse/negative-markers/v500-rat-anti-mouse-cd45rb220-ra3-6b2/p/561227
CD3 Monoclonal Antibody (17A2), eFluor 450	eBioscience	48-0032-80	1:100 (FACs)		https://www.thermofisher.com/antibody/product/ CD3-Antibody-clone-17A2-Monoclonal/48-0032-80
APC-H7 Rat anti-Mouse CD4 Clone GK1.5	BD Bioscience	560246	1:100 (FACs)		https://www.bdbiosciences.com/us/applications/research/t-cell-immunology/th-1-cells/surfacemarkers/mouse/apc-h7-rat-anti-mouse-cd4-gk15/p/560246
APC anti- mouse CD8a Antibody, Clone 53-6.7	eBioScience	100711	1:50 (FACs)		https://www.biolegend.com/en-us/products/apc- anti-mouse-cd8a-antibody-150
PE Mouse Anti- Mouse NK-1.1, Clone PK136	BD Pharmingen	561046	1:100 (FACs)		https://www.bdbiosciences.com/in/reagents/rese arch/antibodies-buffers/immunology- reagents/anti-mouse-antibodies/cell-surface- antigens/pe-mouse-anti-mouse-nk-11- pk136/p/561046
Ly-6C APC	Miltenyi	130-102-	1:10 (FACs)		https://www.miltenyibiotec.com/US-

DOI [to be added]

Antibody, anti- mouse, Clone 1G7.G10	Biotec	899		en/products/ly-6c-antibody-anti-mouse-1g7-g10.html#gref
PE-Cy™7 Rat Anti-CD11b Clone, M1/70	BD Pharmingen	561098	1:300 (FACs)	https://www.bdbiosciences.com/us/applications/research/stem-cell-research/mesenchymal-stem-cell-markers-bone-marrow/mouse/negative-markers/pe-cy7-rat-anti-cd11b-m170/p/561098
PE Rat Anti- Mouse Siglec- F Clone. E50- 2440	BD Pharmingen	562068	1:100 (FACs)	https://www.bdbiosciences.com/eu/applications/research/b-cell-research/surface-markers/mouse/pe-rat-anti-mouse-siglec-f-e50-2440/p/562068
CD16/CD32 Monoclonal Antibody (93)	eBioScience	14-0161-82	1:100 (FACs)	https://www.thermofisher.com/antibody/product/ CD16-CD32-Antibody-clone-93-Monoclonal/14- 0161-82
APC-H7 Rat Anti-Mouse Ly- 6G, Clone 1A8	BD BioScience	565369	1:100 (FACs)	https://www.bdbiosciences.com/us/reagents/rese arch/antibodies-buffers/immunology- reagents/anti-mouse-antibodies/cell-surface- antigens/apc-h7-rat-anti-mouse-ly-6g- 1a8/p/565369
F4/80 Monoclonal Antibody (BM8), FITC,	eBioScience	11-4801-81	1:50 (FACs)	https://www.thermofisher.com/antibody/product/ F4-80-Antibody-clone-BM8-Monoclonal/11-4801- 81
CD45R (B220) Monoclonal Antibody (RA3- 6B2), PerCP- Cyanine5.5,	eBioscience	45-0452-80	1:100 (FACs)	https://www.thermofisher.com/antibody/product/ CD45R-B220-Antibody-clone-RA3-6B2- Monoclonal/45-0452-82
CD3e Monoclonal Antibody (145- 2C11), PerCP- Cyanine5.5	eBioscience	45-0031-80	1:50 (FACs)	https://www.thermofisher.com/antibody/product/ CD3e-Antibody-clone-145-2C11-Monoclonal/45- 0031-82
PerCP-Cy™5.5 Rat Anti- CD11b Clone M1/70	BD Pharmingen	561114	1:500 (FACs)	https://www.bdbiosciences.com/eu/applications/research/stem-cell-research/mesenchymal-stem-cell-markers-bone-marrow/mouse/negative-markers/percp-cy55-rat-anti-cd11b-m170/p/561114
PerCP-Cy [™] 5.5 Rat Anti- Mouse Ly-6G Clone 1A8	BD Pharmingen	560602	1:100 (FACs)	https://www.bdbiosciences.com/us/reagents/rese arch/antibodies-buffers/immunology- reagents/anti-mouse-antibodies/cell-surface- antigens/percp-cy55-rat-anti-mouse-ly-6g- 1a8/p/560602
NK1.1 Monoclonal Antibody (PK136), PerCP- Cyanine5.5	eBioscience	45-5941-80	1:200 (FACs)	https://www.thermofisher.com/order/genome-database/generatePdf?productName=NK1.1&assayType=ANTIBODY&productId=45-5941-80&detailed=true
TER-119 Monoclonal Antibody (TER- 119), PerCP- Cyanine5.5	eBioscience	45-5921-80	1:400 (FACs)	https://www.thermofisher.com/antibody/product/ TER-119-Antibody-clone-TER-119-Monoclonal/45- 5921-82

CD117 (c-Kit) Monoclonal Antibody (2B8), APC- eFluor 780	eBioscience	47-1171-80	1:200 (FACs)	https://www.thermofisher.com/antibody/product/ CD117-c-Kit-Antibody-clone-2B8-Monoclonal/47- 1171-82
Ly-6A/E (Sca-1) Monoclonal Antibody (D7), APC	eBioscience	17-5981-81	1:500 (FACs)	https://www.thermofisher.com/antibody/product/ Ly-6A-E-Sca-1-Antibody-clone-D7-Monoclonal/17- 5981-82
CD16/CD32 Monoclonal Antibody (93), PE-Cyanine7	eBioscience	25-0161-81	1:1000 (FACs)	https://www.thermofisher.com/antibody/product/ CD16-CD32-Antibody-clone-93-Monoclonal/25- 0161-82
CD34 Monoclonal Antibody (RAM34), eFluor 450	eBioscience	48-0341-80	1:50 (FACs)	https://www.thermofisher.com/antibody/product/ CD34-Antibody-clone-RAM34-Monoclonal/48- 0341-82
Monoclonal Anti-Actin, α- Smooth Muscle - FITC antibody produced in mouse	Sigma Aldrich	F3777	1:300 (IHC)	https://www.sigmaaldrich.com/catalog/product/sigma/f3777?lang=en®ion=GB
Anti- Mouse/Human Mac-2 (Galectin-3), Purified (Clone M3/38)	Cedarlane	CL8942AP	1:4000 (IHC)	https://www.cedarlanelabs.com/products/detail?code=CL8942AP
Anti-smooth muscle Myosin heavy chain 11 antibody	Abcam	Ab53219	1:100 (IHC)	https://www.abcam.com/smooth-muscle-myosin-heavy-chain-11-antibody-ab53219.html
Anti- Digoxigenin- AP, Fab fragments	Roche	110932749 10	1:500 (in situ)	https://www.sigmaaldrich.com/catalog/product/roche/11093274910?lang=en®ion=GB
Monoclonal mouse anti- human Actin (Smooth Muscle) (Concentrate) Clone 1A4	Agilent Dako	M085129	1:2500 (in situ)	https://www.agilent.com/en/product/immunohist ochemistry/antibodies-controls/primary- antibodies/actin-(smooth-muscle)-(concentrate)- 76542
Monoclonal mouse anti- human CD68 (Concentrate) Clone KP1	Agilent Dako	M081401	1:250 (in situ)	https://www.agilent.com/en/product/immunohist ochemistry/antibodies-controls/primary- antibodies/cd68-(concentrate)-76535

Monoclonal	Agilent Dako	GA75161	1:400 (in situ)	https://www.agilent.com/en/product/immunohist
mouse anti-				ochemistry/antibodies-controls/primary-
human CD45,				antibodies/cd45-leucocyte-common-antigen-
Leucocyte				(dako-omnis)-76270
Common				
Antigen (Dako				
Omnis)				
Clone 2B11 +				
PD7/26				
-				

Cultured Cells

Name	Vendor or Source	Sex (F, M, or unknown)	Persistent ID / URL
Coronary Artery Smooth	Lonza	Male	CC-2583
Muscle Cells (human)			

Data & Code Availability

Description	Source / Repository	Persistent ID / URL
The loss of CARMN regulates vascular smooth muscle cell phenotype and accelerates the development of atherosclerosis in mice	GEO database	GSE158972 / https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE158972

Other

Description	Source / Repository	Persistent ID / URL
Smooth Muscle Cells	Promo Cell	https://www.promocell.com/product/smooth-muscle-cell-growth-medium-2/
Growth Medium 2 and		
Supplement		
Penicillin-Streptomycin	Gibco	https://www.fishersci.co.uk/shop/products/gibco-penicillin-streptomycin-10-000-u-ml-
(P/S)		<u>3/11548876</u>
PDGF-BB	R&D Systems	https://www.rndsystems.com/products/recombinant-human-pdgf-bb-protein-cf 220-bb
Lipofectamine RNAiMAX	Life Technologies	https://www.thermofisher.com/uk/en/home/brands/product- brand/lipofectamine/lipofectamine-rnaimx.html
Transfection Reagent		
Opti-MEM Reduced	Gibco	https://www.thermofisher.com/uk/en/home/life-science/cell-culture/mammalian-cell-
Serum Media		culture/classical-media/opti-mem.html
Liberase TM	Sigma Aldrich	https://www.sigmaaldrich.com/catalog/product/roche/libtmro?lang=en®ion=GB&gclid=EAla
		IQobChMI64Lz1sO-7QIVDxoGAB24Zg27EAAYASAAEgK_RPD_BwE
ACK Lysing Buffer (not in	ThermoFisher	https://www.thermofisher.com/order/catalog/product/A1049201#/A1049201
your methods but		
presume you have used		
this?		
QIAzol Lysis Reagent	Qiagen	https://www.qiagen.com/gb/products/discovery-and-translational-research/lab-
, -		essentials/buffers-reagents/qiazol-lysis-reagent/?clear=true#orderinginformation https://www.sigmaaldrich.com/catalog/product/sigma/c4951?lang=en®ion=GB
Water soluble	Sigma Aldrich	irrhz:\\\max.sikiiiaaini.cii:roiii\raraiok\hi.onncr\sikiiia\r432Ti!aiik-eiix(6ki0ii=0R
cholesterol-methyl- β -		
cyclodextrin (CMBCD)		

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<u></u>	https://www.abcam.com/oil-red-o-stain-kit-lipid-stain-ab150678.html
	https://www.promega.co.uk/products/cell-health-assays/cell-viability-and-cytotoxicity-
aga	assays/celltiter-96-aqueous-one-solution-cell-proliferation-assay- mts /?catNum=G3582
ogen	https://www.thermofisher.com/order/catalog/product/L34358?uk&en#/L34358?uk&en
n	https://www.qiagen.com/gb/products/discovery-and-translational-research/dna-rna-purification/rna-purification/mirna/mirneasy-mini-kit/?clear=true#orderinginformation
echnologies	https://www.thermofisher.com/order/catalog/product/4311235?SID=srch-srp-
	4311235#/4311235?SID=srch-srp-4311235
n	https://www.abcam.com/mtt-assay-kit-cell-proliferation-ab211091.html
chnologies	https://www.thermofisher.com/uk/en/home/life-science/pcr/real-time-pcr/real-time-pcr-
	reagents/sybr-green-real-time-master-mixes/power-sybr-green-master-mix.html
no Fisher	https://www.thermofisher.com/order/catalog/product/4305719#/4305719
10 1 1311C1	
	https://www.thermofisher.com/order/catalog/product/C10420?uk&en#/C10420?uk&en
אבוו	
	https://www.thermofisher.com/order/catalog/product/AM1921?uk&en#/AM1921?uk&en
noFisher	https://www.thermofisher.com/order/catalog/product/P10144#/P10144
ıt	https://www.agilent.com/en/product/automated-electrophoresis/bioanalyzer-systems/bioanalyzer-rna-analysis-228256
	systems/ bloanaryzer-ma-kits-reagents/ bloanaryzer-ma-anarysis-220230
noFisher	https://www.thermofisher.com/uk/en/home/life-science/cell-analysis/cellular-imaging/in-situ-
	hybridization-ish/rna-fish/viewrna-cell-assays.html#:~:text=ViewRNA%20ISH%20Cell%20and%20Cell,with%20protein%20in%20individu
	al%20cells.
n, 339450	https://www.qiagen.com/gb/products/discovery-and-translational-research/detection/ish-and-northern-blotting/mirna-detection/mircury-lna-mirna-ish-optimization-
	kits/#orderinginformation
Ingland Biolabs	https://international.neb.com/products/p8107-proteinase-k-molecular-biology-
11585762001	grade?cnum=P8107S#Product%20Information https://www.sigmaaldrich.com/catalog/product/ROCHE/11585762001?lang=en®ion=GB
•	https://www.sigmaaldrich.com/catalog/product/roche/11093274910?lang=en®ion=GB
	https://www.sigmaaldrich.com/catalog/product/roche/11697471001?lang=en®ion=GB
•	https://www.thermofisher.com/order/catalog/product/15575020?SID=srch-hj-
ogen	15575020#/15575020?SID=srch-hj-15575020
ogen	https://www.thermofisher.com/order/catalog/product/AM2239?SID=srch-hj-AM2239#/AM2239?SID=srch-hj-AM2239
ngland Biolabs	https://international.neb.com/products/m0314-rnase-inhibitor- murine?cnum=M0314L#Product%20Information
ega	https://www.promega.co.uk/products/cloning-and-dna-markers/molecular-biology-enzymes- and-reagents/rq1-rnase free-dnase/?catNum=M6101
	https://www.qiagen.com/us/products/discovery-and-translational-research/functional-and-cell-
"	analysis/rna-silencing/antisense-lna-gapmers/antisense-lna-gapmers/#orderinginformation
	https://www.qiagen.com/us/products/discovery-and-translational-research/functional-and-cell-
П	analysis/mirna-functional-analysis/mircury-lna-mirna-inhibitors/mircury-lna-mirna-
	inhibitors/?clear=true#orderinginformation
	http://www.aurafinggopomics.gu/on/acom/alignus/actides/austers des alignus/austers
	https://www.eurofinsgenomics.eu/en/ecom/oligonucleotides/custom-dna-oligos/custom-dna-oligos/
າo Fisher	https://www.thermofisher.com/uk/en/home/life-science/pcr/real-time-pcr/real-time-pcr-assays/tagman-gene-expression/single-tube-tagman-gene-expression-analysis.html
	assays/ radinan-gene-expression/ single-rape-radinan-gene-expression-analysis in (III)
Scientific	https://www.fishersci.co.uk/shop/products/tagman-microrna-reverse-transcription-kit-3/10146854
	ega ogen ogen echnologies no Fisher ogen noFisher noFisher noFisher nt noFisher noFisher ogen ogen ogen ogen ogen ogen on Fisher no Fisher

MicroRNA Reverse		
Transcription Kit		
Cholestrol FS Assay	Diagnostic Systems	https://www.diasys-diagnostics.com/products/kit-lines/kits-for-respons/product-details/185-cholesterol-fs-10/product.show