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Supporting Information

for

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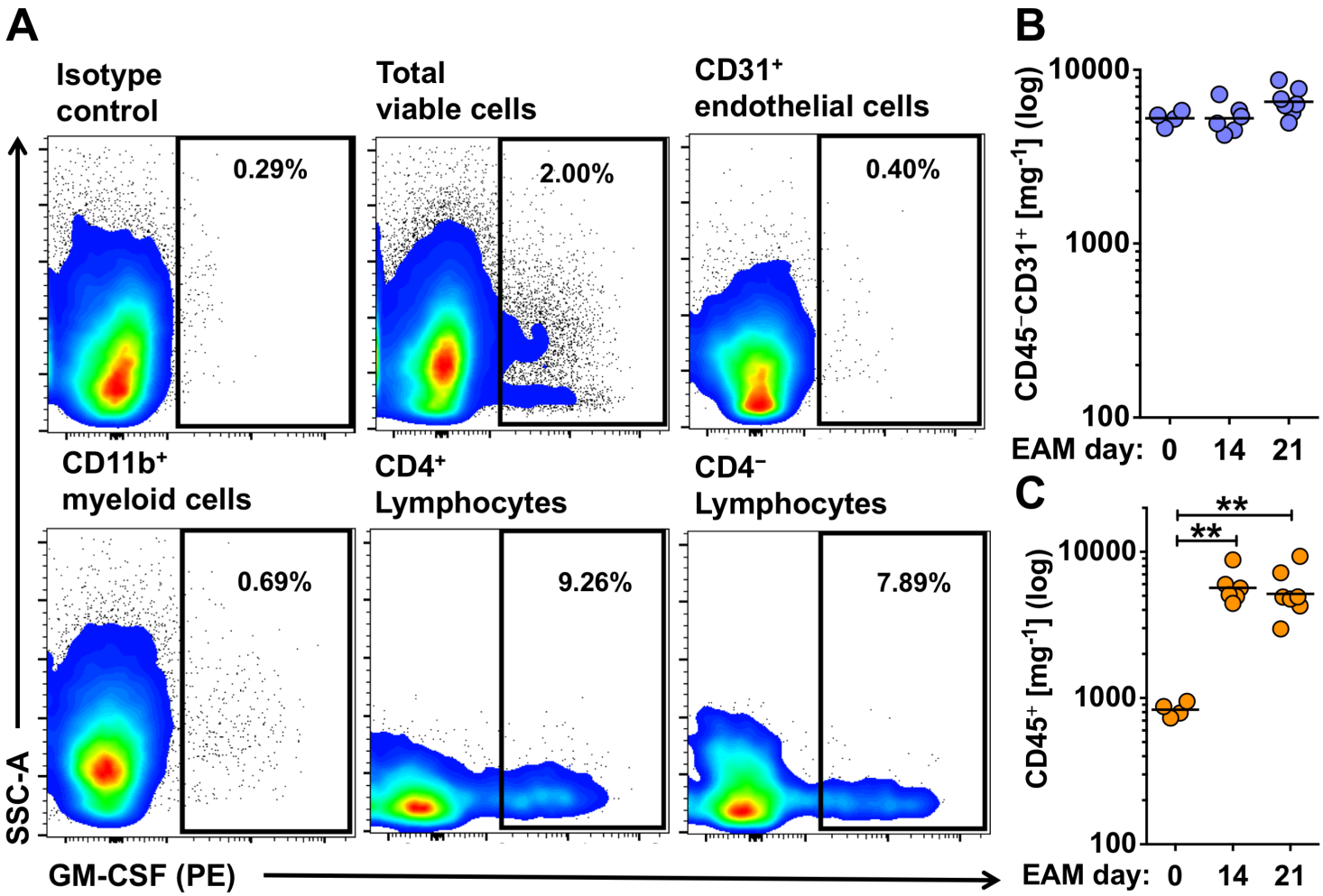
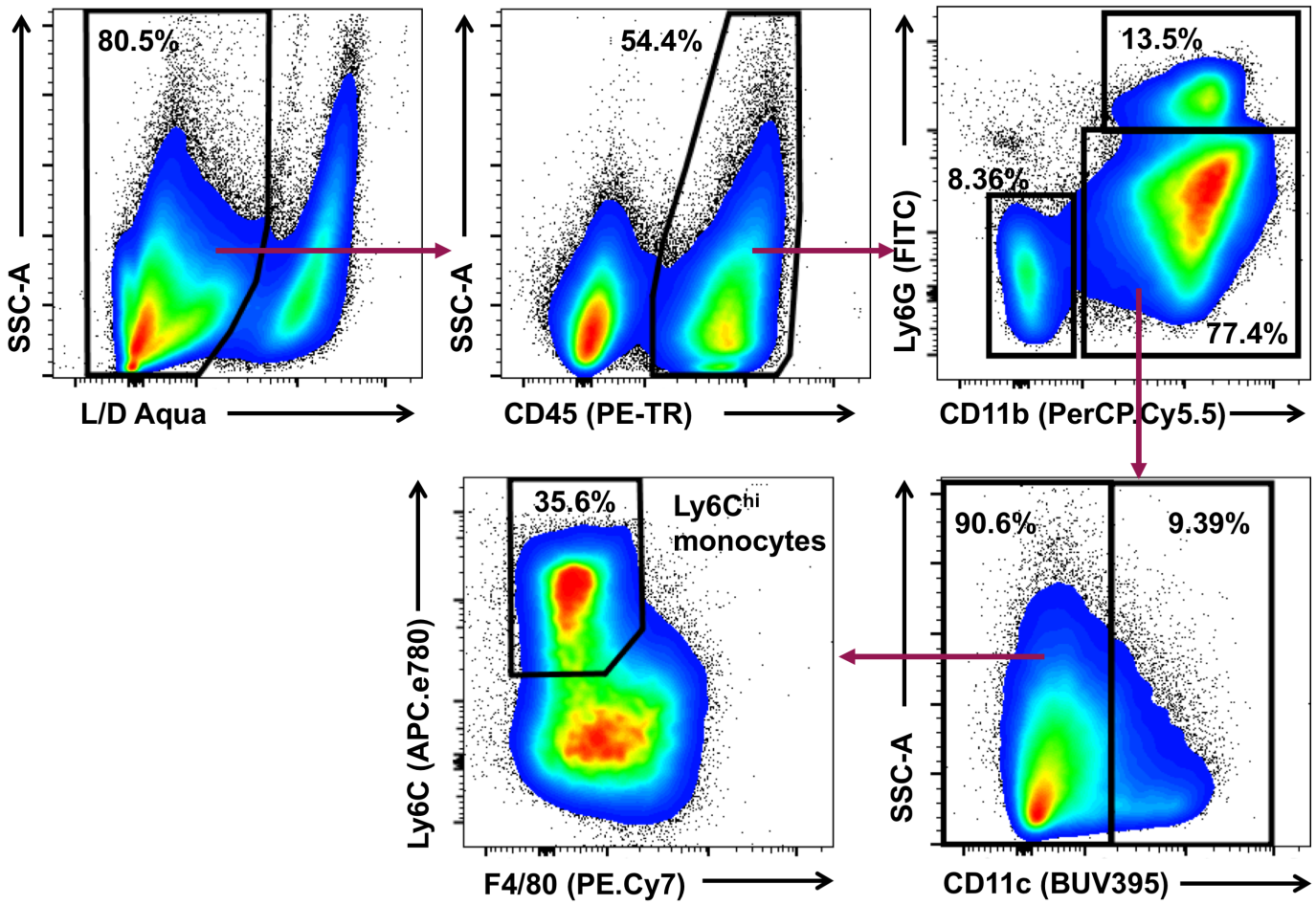
Sca-1$^+$ cardiac fibroblasts promote development of heart failure

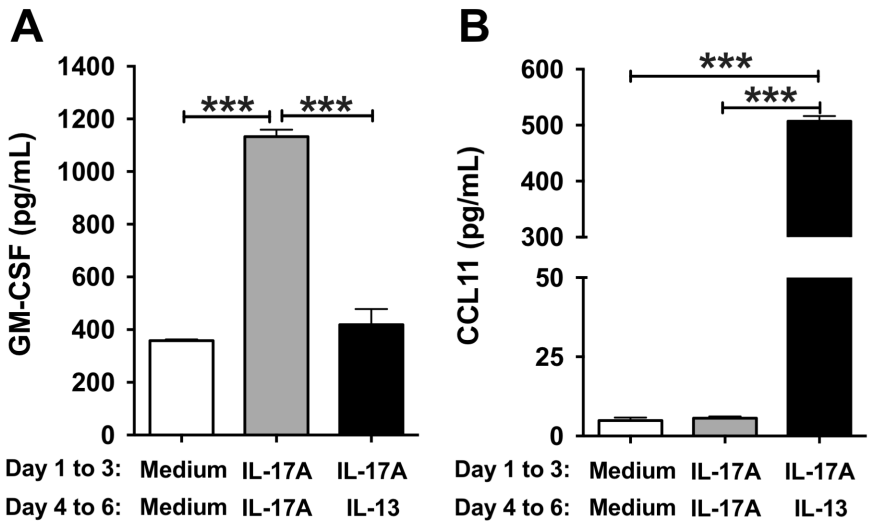


Supplementary Figure 1. GM-CSF production by other cardiac cells

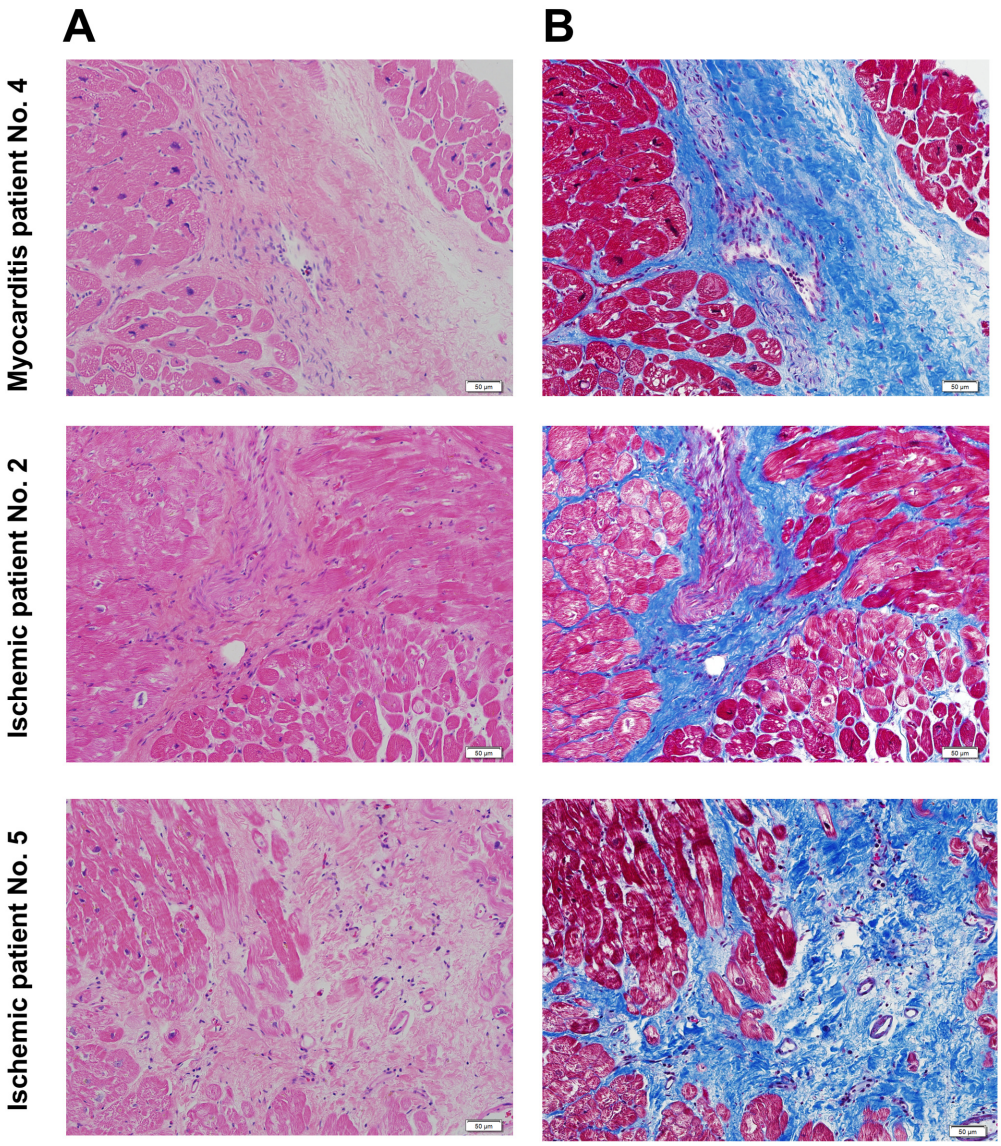
(**A**) Representative flow cytometry plots showing GM-CSF staining of all cardiac cells, CD31$^+$ endothelial cells, CD11b$^+$ myeloid cells, CD4$^+$ lymphocytes and CD4$^-$ lymphocytes from mouse hearts on day 21 of EAM. (**B-C**) Flow cytometric quantification of numbers of (**B**) CD45$^-$CD31$^+$ endothelial cells and (**C**) CD45$^+$ leukocytes per mg cardiac tissue at different time points after EAM induction (n = 4 for EAM day 0 group; n = 6 for EAM day 14 group; n = 7 for EAM day 21 group). Data are representative of three independent experiments. Groups were compared using one-way ANOVA followed by Tukey's post-test. **, $P < 0.01$.



Supplementary Figure 2. Gating strategies for inflammatory Ly6C^{hi} monocytes.
Representative flow cytometry plots showing the gating strategies for Ly6C^{hi} monocytes. Ly6C^{hi} monocytes were gated as viable CD45^{+}Ly6G^{-}CD11b^{+}CD11c^{-}F4/80^{-}Ly6C^{hi} cardiac cells.



Supplementary Figure 3. Cultured human primary cardiac fibroblasts exhibit functional plasticity.
Secreted GM-CSF (**A**) and CCL11 (**B**) protein levels in the supernatants of cultured human primary cardiac fibroblasts under IL-17A, IL-13 or unstimulated (control) for three days and washed and new medium was added with/without change of stimuli for another three days. Supernatants were harvested on day 6, GM-CSF and CCL11 concentrations were measured by ELISA. Data are shown as mean ± SD of technical triplicates and are representative of three independent experiments. Groups were compared using one-way ANOVA followed by Tukey's post-test. ***, $P < 0.001$.



Supplementary Figure 4. Both fibrosis and infiltration are present in chronic heart failure patient biopsy samples.
Representative histology slides with H&E staining (Scalebar, 50 µm) (**A**) or Masson's trichrome staining (Scalebar, 50 µm) (**B**) of consecutive cuts of the cardiac biopsy samples from myocarditis patient No. 4, Ischemic patient No. 2 and No. 5.

Supplementary Table 1. List of antibodies

	Antigen	Clone#/Cat#	Company	Usage
Human	CCL2	24822	R&D Systems	Flow cytometry
	CD105	266	BD Biosciences	Flow cytometry
	CD29	TS2/16	BioLegend	Flow cytometry
	CD31	WM59	BioLegend	Flow cytometry
	CD45	HI30	BD Biosciences	Flow cytometry
	CD73	AD2	BioLegend	Flow cytometry
	CD90	5E10	BioLegend	Flow cytometry
	cKit	104D2	BioLegend	Flow cytometry
	DDR2	290804	R&D Systems	Flow cytometry
	GM-CSF	BVD2-21C11	BioLegend	Flow cytometry
	PDGFRα	16A1	BioLegend	Flow cytometry
Mouse	CCL2	2H5	BioLegend	Flow cytometry
	CD11b	M1/70	BioLegend	Flow cytometry
	CD11c	HL3	BD Biosciences	Flow cytometry
	CD29	HMb1-1	eBioscience	Flow cytometry
	CD31	390	BioLegend	Flow cytometry
	CD34	HM34	BioLegend	Flow cytometry
	CD4	GK1.5	BioLegend	Flow cytometry
	CD45	30-F11	Invitrogen	Flow cytometry
	CD90.2	30-H12	BioLegend	Flow cytometry
	Collagen I	600-402-103	Rockland antibodies	Flow cytometry
	F4/80	BM8	eBioscience	Flow cytometry
	Feeder	mEF-SK4	Miltenyi Biotec	Flow cytometry
	GM-CSF	MP1-22E9	BioLegend	Flow cytometry
	Ly6C	HK1.4	eBioscience	Flow cytometry
	Ly6G	1A8	BioLegend	Flow cytometry
	NFAT2	7A6	BioLegend	Flow cytometry
	p-p65	93H1	Cell Signaling	Flow cytometry
	PDGFRα	APA5	eBioscience	Flow cytometry
	Sca-1	D7	BioLegend	Flow cytometry
	Actin	A5316	Sigma	Immunoblot
	Erk1/2	4695T	Cell Signaling	Immunoblot
	NFAT2	8032S	Cell Signaling	Immunoblot
	p-Erk1/2	4370T	Cell Signaling	Immunoblot
	p-p65	3037	Cell Signaling	Immunoblot
	p-Stat3	9145T	Cell Signaling	Immunoblot
	p-Stat6	9361T	Cell Signaling	Immunoblot
	p65	sc-372	Santa Cruz	Immunoblot
	Parp1	sc-7150	Santa Cruz	Immunoblot
	pro-Casp3	9622	Cell Signaling	Immunoblot
	Stat3	9139T	Cell Signaling	Immunoblot
	Stat6	9362S	Cell Signaling	Immunoblot

Supplementary Table 2. List of mouse primers

Gene	Forward primer	Reverse primer
Ccl2	GTCGGAGAGCTACAAGAGGATCA	AGCTTGGTGACAAAAACTACAGCTT
Ccl11	GAATCACCAACAACAGATGCAC	TCCTGGACCCACTTCTTCTT
Cxcl10	CCAAGTGCTGCCGTCATTTTC	TCCCTATGGCCCTCATTCTCA
Csf2	CCGTAGACCCTGCTCGAATA	TGCCTGTCACATTGAATGAA
Gapdh	TCCTCCTCAGACCGCTTTT	TCTGCTGGAGTCCCCTTG
Postn	CCTGCCCTTATATGCTCTGCT	AAACATGGTCAATAGGCATCACT