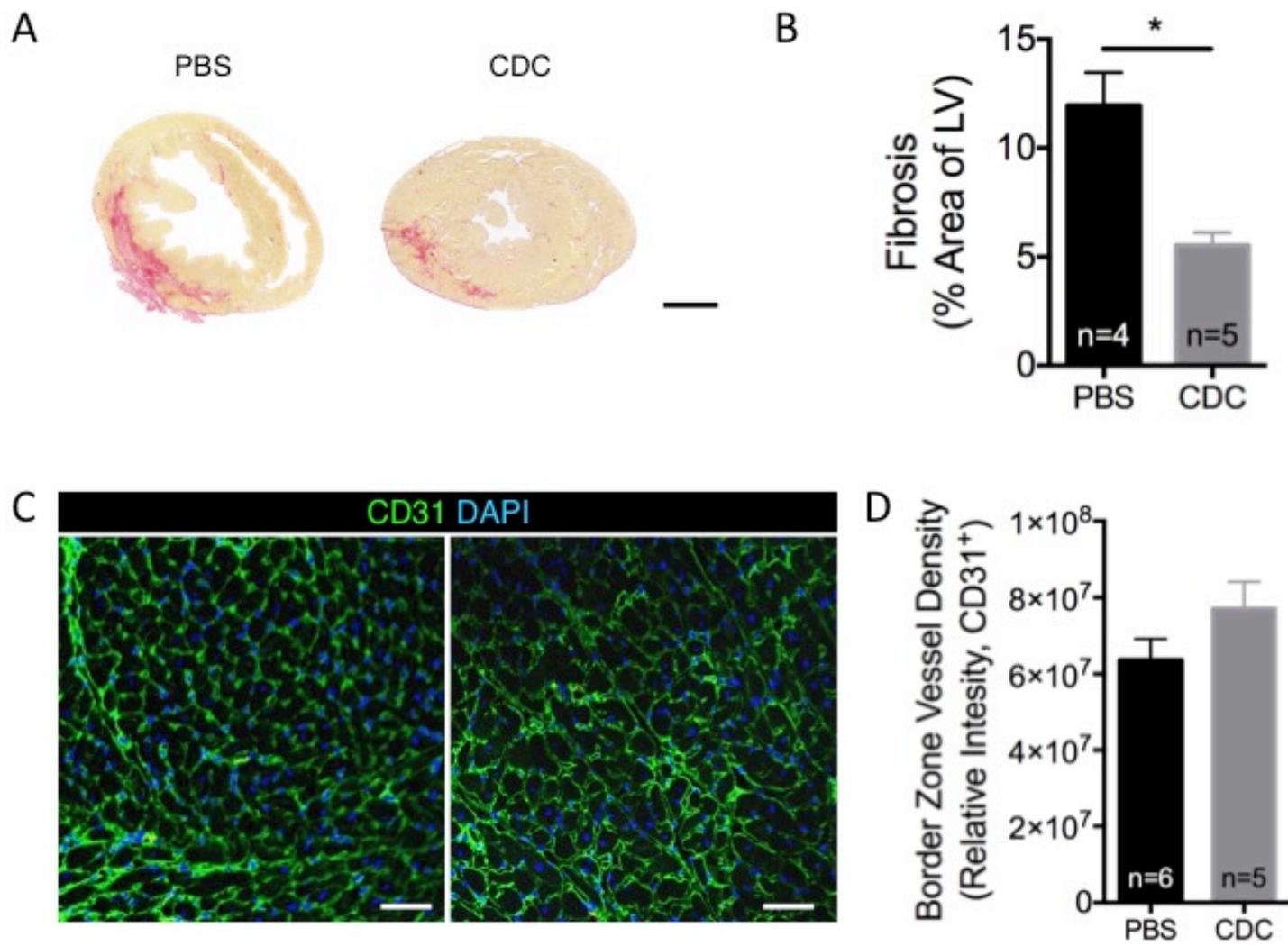
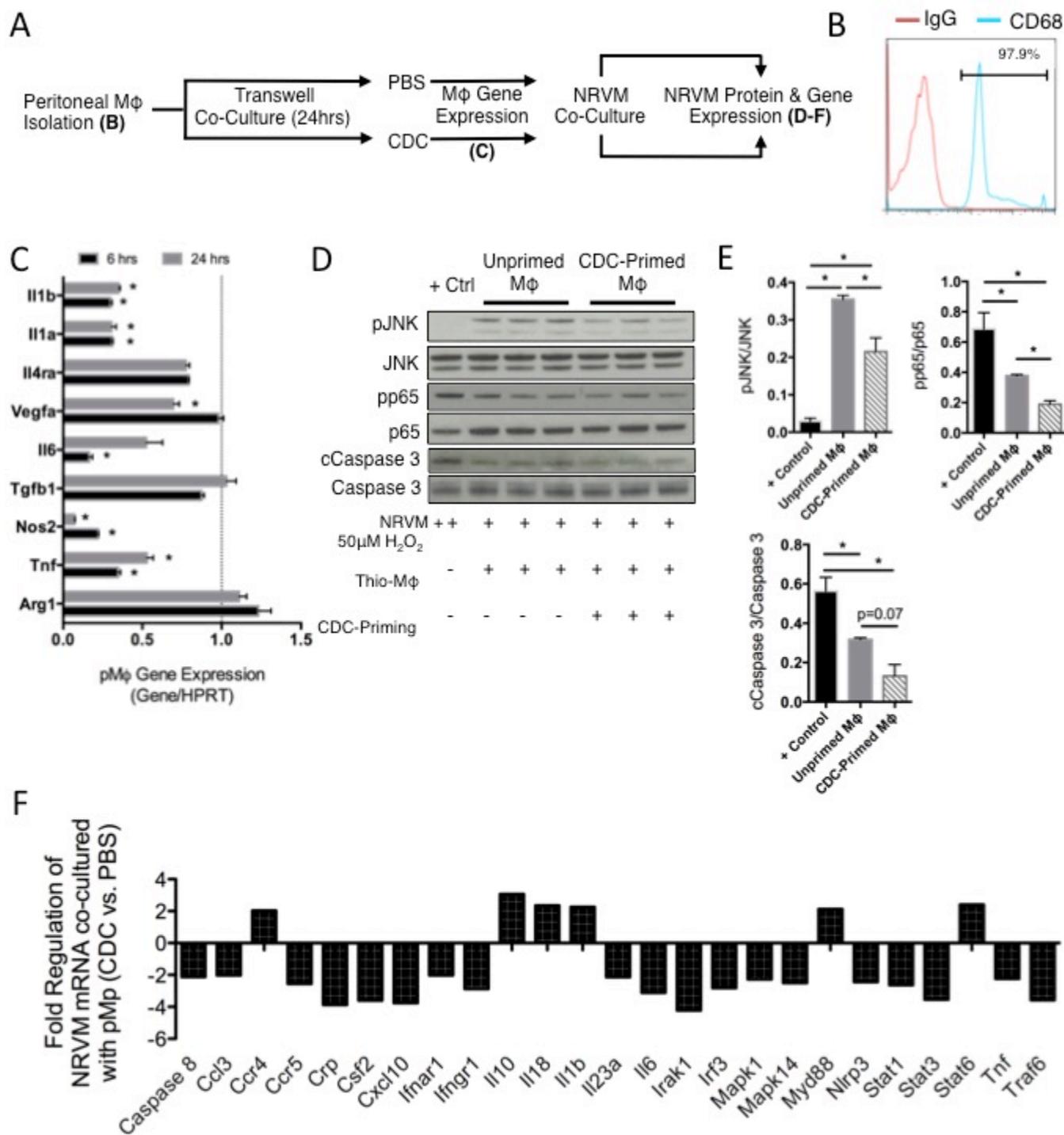


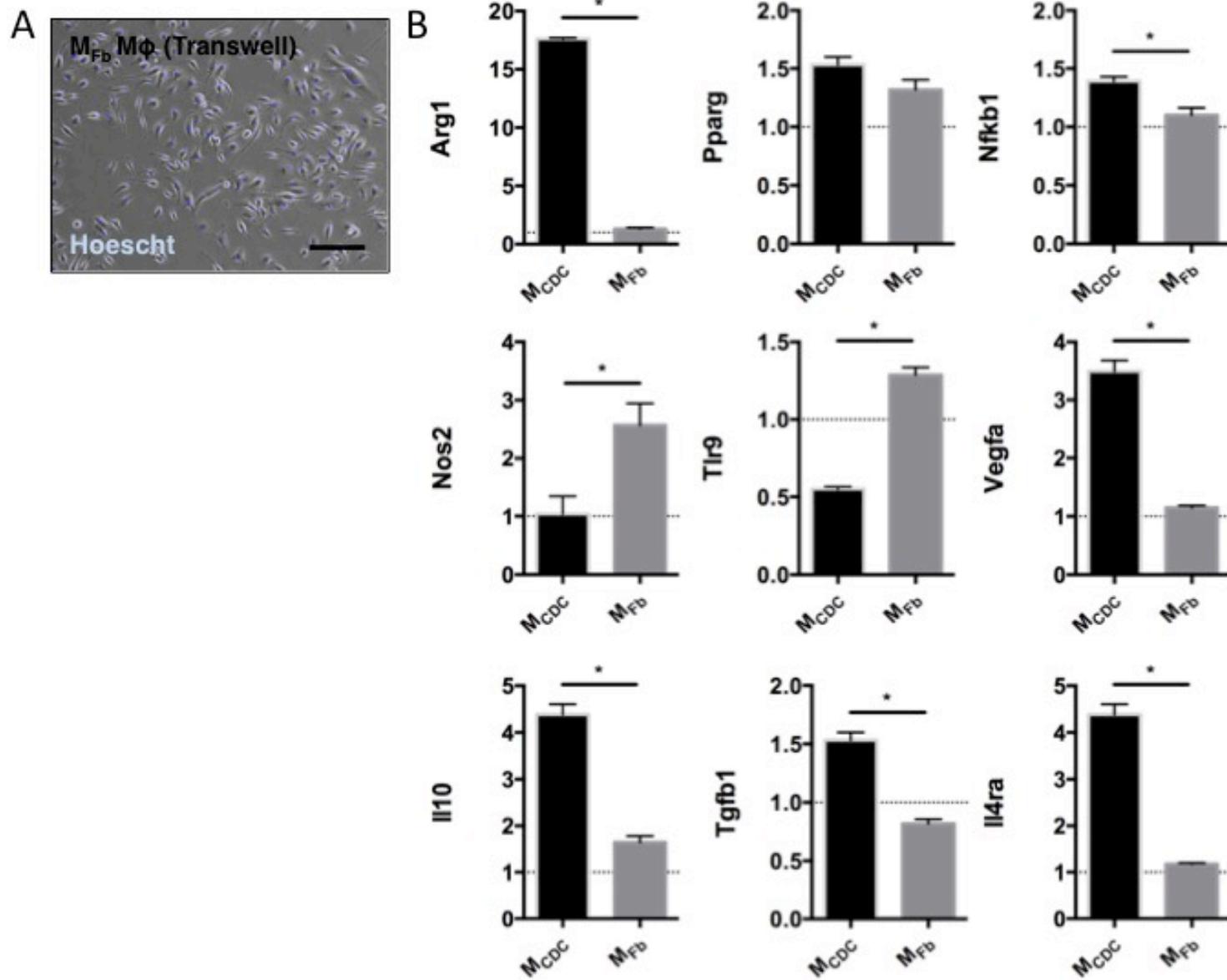
# Supplemental Figure 1.



# Supplemental Figure 2.



# Supplemental Figure 3.



## SUPPLEMENTAL DATA

**Supplemental Figure 1. CDCs reduce fibrosis but do not alter the vessel density following IR.** (A) Representative picrosirius red stain of infarcted hearts 2 weeks following IR injury. Scale bar: 2mm (B) Quantification of fibrosis within the ischemic heart (average value of apex, mid, and base; n=4-5 rats/group). (C) Representative immunohistochemical staining of CD31<sup>+</sup> vessels within the border zone 48hrs following IR injury. Scale bar: 50 $\mu$ m (D) Quantification of vessel density (n=5-6 rats/group). Graphs depict mean  $\pm$  SEM. Statistical significance was determined using Student's T-test. \*p<0.05

**Supplemental Figure 2. CDC polarization of thioglycollate-elicited peritoneal M $\phi$  (pM $\phi$ ).** (A) Schematic depicting the duration of transwell coculture prior to gene expression analysis of isolated pM $\phi$  and subsequent co-culture with NRVMs. (B) Representative flow plot depicting the purity of CD68<sup>+</sup> pM $\phi$  following peritoneal lavage. (C) Pooled changes in gene expression of M1 and M2 markers observed in pM $\phi$  cocultured in transwell with CDC after 6 or 24 hours (relative to PBS control). NRVMs were then treated with H<sub>2</sub>O<sub>2</sub> (50 $\mu$ M), prior to transwell coculture with pM $\phi$ . After 6 hours, NRVMs were collected for protein and gene expression analyses (n = 3 rats/group). (D) Immunoblots depicting the reduction in stress (pJNK, pp65) and apoptosis (caspase 3) marker expression in CDC-primed M $\phi$  (n = 3 rats/group). (E) Pooled changes in protein expression of immunoblots in (D). (F) Changes in cardiomyocyte stress-associated gene expression of CDC-primed versus PBS-primed pM $\phi$  (pooled n=3/group). Graphs depict mean  $\pm$  SEM. Statistical significance was determined using 1-way ANOVA followed by Tukey's multiple comparisons test. \*p<0.05

**Supplemental Figure 3. Co-culture of CDCs, but not fibroblasts, with BM-derived M $\phi$  elicit a distinct gene expression profile.** (A) Representative phase contrast image of BM-derived M $\phi$  following co-culture with fibroblasts (M<sub>Fb</sub>). Scale bar: 100 $\mu$ m (B) Gene expression profiles of M $\phi$  polarized toward M<sub>Fb</sub> and M<sub>CDC</sub> (n = 3/group). Graphs depict mean  $\pm$  SEM. Statistical significance was determined using 1-way ANOVA followed by Tukey's multiple comparisons test. \*p<0.05.

**Supplemental Table 1. Echocardiographic measurements 2 weeks following IR.**

|   | Baseline     |             | 2 weeks                  |                          |
|---|--------------|-------------|--------------------------|--------------------------|
|   | PBS          | CDC         | PBS                      | CDC                      |
| <b>Sample number (n)</b>                  | 4            | 4           | 7                        | 8                        |
| <b>Ejection Fraction (EF; %)</b>          | 69.7 ± 1.3   | 68.9 ± 1.8  | 49.3 ± 6.1 <sup>A</sup>  | 63.5 ± 5.1 <sup>AB</sup> |
| <b>Fractional Area of Change (FAC; %)</b> | 47.4 ± 2.9   | 46.7 ± 1.6  | 30.23 ± 5.1 <sup>A</sup> | 42.8 ± 4.0 <sup>AB</sup> |
| <b>End Systolic Volume (ESV; μL)</b>      | 35.8 ± 8.4   | 42.3 ± 4.2  | 67.5 ± 10.2 <sup>A</sup> | 50.0 ± 19.9 <sup>A</sup> |
| <b>End Diastolic Volume (EDV; μL)</b>     | 119.2 ± 23.8 | 136.1 ± 7.6 | 132.5 ± 17.2             | 138.2 ± 49.8             |

<sup>A</sup> p<0.05 versus equivalent baseline control; <sup>B</sup> p<0.05 versus PBS 2 week treatment. Statistical significance was determined using 2-way ANOVA followed by Sidak's multiple comparisons test.

**Supplemental Table 2. Peripherally-Circulating Inflammatory Cells from Blood (48hrs post-AMI).**

|   | <b>CDC</b>      |            |          | <b>PBS</b>      |            |          | <b>p-value</b> |
|---|-----------------|------------|----------|-----------------|------------|----------|----------------|
|   | <b>Mean (%)</b> | <b>SEM</b> | <b>n</b> | <b>Mean (%)</b> | <b>SEM</b> | <b>n</b> |                |
| <b>CD45<sup>+</sup>CD68<sup>+</sup></b>                   | 6.84            | 0.61       | 4        | 6.20            | 0.49       | 4        | 0.50           |
| <b>CD45<sup>+</sup>CD11b<sup>+</sup></b>                  | 8.98            | 0.86       | 4        | 10.08           | 0.38       | 4        | 0.29           |
| <b>CD45<sup>+</sup>Gran<sup>+</sup></b>                   | 5.77            | 1.24       | 4        | 7.49            | 1.18       | 4        | 0.35           |
| <b>CD45<sup>+</sup>CD11b<sup>+</sup>CD11c<sup>+</sup></b> | 11.91           | 0.87       | 4        | 11.26           | 1.11       | 4        | 0.66           |
| <b>CD45<sup>+</sup>CD3<sup>+</sup>CD4<sup>+</sup></b>     | 26.61           | 1.56       | 4        | 27.75           | 3.23       | 4        | 0.76           |
| <b>CD45<sup>+</sup>CD161a<sup>+</sup></b>                 | 0.73            | 0.17       | 4        | 0.74            | 0.02       | 4        | 0.96           |
| <b>CD4<sup>+</sup>CD25<sup>+</sup>Foxp3<sup>+</sup></b>   | 1.21            | 0.18       | 4        | 1.20            | 0.13       | 4        | 0.97           |

**Supplemental Table 3. Infiltrating Inflammatory Cells within the Ischemic Myocardium (48hrs post-AMI)**

|   | CDC      |      |   | PBS      |      |   | p-value |
|---|----------|------|---|----------|------|---|---------|
|   | Mean (%) | SEM  | N | Mean (%) | SEM  | n |         |
| <b>CD45<sup>+</sup>CD11b<sup>+</sup></b>                  | 27.53    | 1.29 | 4 | 16.95    | 2.31 | 4 | *<0.01  |
| <b>CD45<sup>+</sup>Gran<sup>+</sup></b>                   | 46.88    | 0.67 | 4 | 47.33    | 1.41 | 4 | 0.78    |
| <b>CD45<sup>+</sup>CD11b<sup>+</sup>CD11c<sup>+</sup></b> | 19.73    | 1.14 | 4 | 16.70    | 0.67 | 4 | *0.05   |
| <b>CD45<sup>+</sup>CD3<sup>+</sup>CD4<sup>+</sup></b>     | 7.74     | 0.90 | 4 | 8.34     | 0.81 | 4 | 0.64    |
| <b>CD45<sup>+</sup>CD3<sup>+</sup>CD8<sup>+</sup></b>     | 7.30     | 0.92 | 4 | 7.35     | 1.36 | 4 | 0.98    |

**Supplemental Table 4. Antibodies used for flow cytometry.**

| <b>Antibody</b> | <b>Fluorophore</b> | <b>Clone</b> | <b>Catalog No.</b> | <b>Supplier</b> |
|-----------------|--------------------|--------------|--------------------|-----------------|
| CD45            | FITC               | OX-1         | 554877             | BD Biosciences  |
| CD45            | PE-Cy7             | OX-1         | 561588             | BD Biosciences  |
| CD11b           | APC                | WT.5         | 562102             | BD Biosciences  |
| CD11c           | FITC               | 8A2          | MCA1441F           | AbD Serotec     |
| CD3             | APC                | 1F4          | 557030             | BD Biosciences  |
| CD4             | FITC               | OX-35        | 554837             | BD Biosciences  |
| CD8a            | PE                 | OX-8         | 554857             | BD Biosciences  |
| CD68            | PE                 | ED1          | MCA341PE           | AbD Serotec     |
| Granulocyte     | FITC               | HIS48        | 554907             | BD Biosciences  |
| CD161a          | PE                 | 10/78        | 555009             | BD Biosciences  |
| CD80            | PE                 | 3H5          | 555014             | BD Biosciences  |
| CD86            | FITC               | 24F          | 555018             | BD Biosciences  |