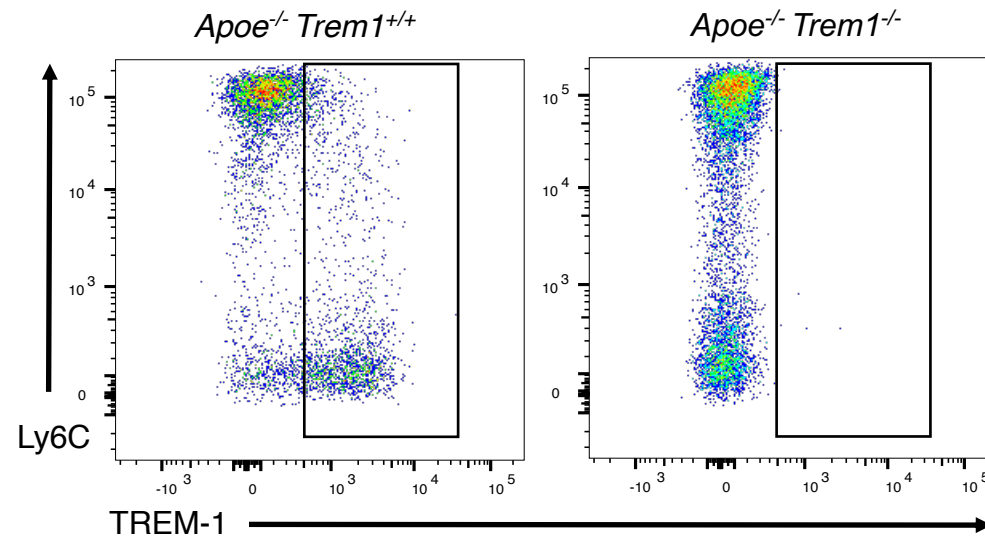
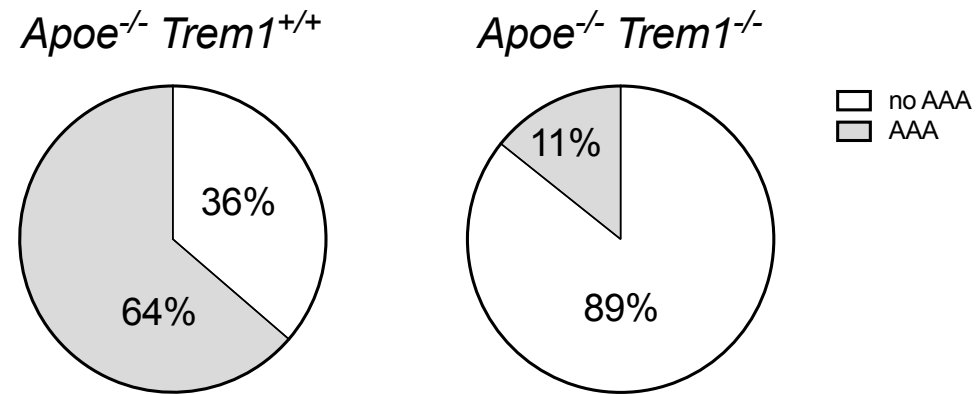


## Supplemental figure 1



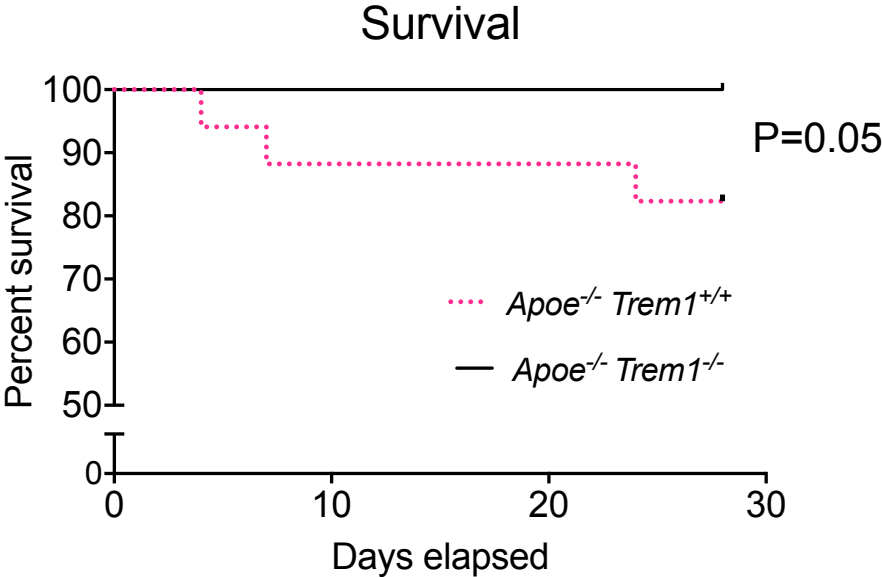
Flow cytometry analysis of TREM-1 expression on circulating monocytes after 3 days of AngII infusion in *Apoe*<sup>-/-</sup> *Trem1*<sup>+/+</sup> and *Apoe*<sup>-/-</sup> *Trem1*<sup>-/-</sup> mice.

## Supplemental figure 2



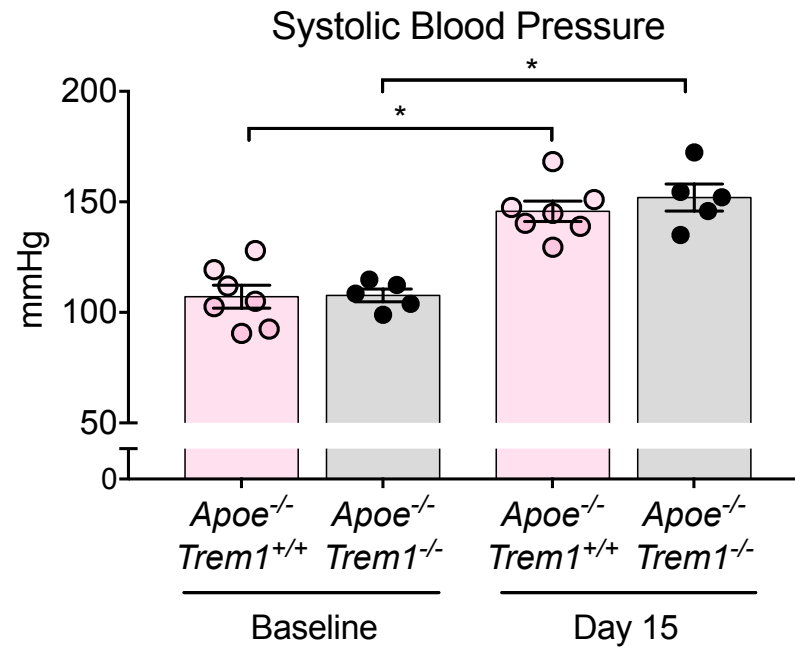
AAA incidence at day 28 after AngII infusion in *Apoe*<sup>-/-</sup>*Trem1*<sup>+/+</sup> (left) and *Apoe*<sup>-/-</sup>*Trem1*<sup>-/-</sup> mice (right).

Supplemental figure 3



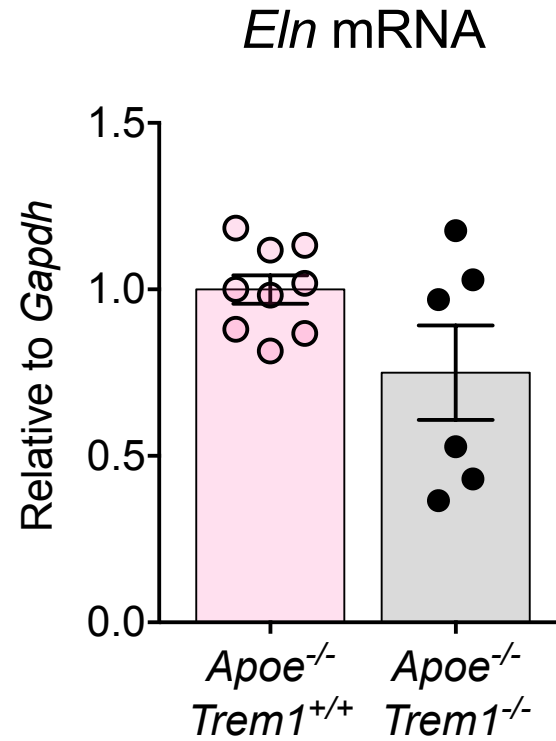
Survival curve of AngII-infused *Apoe*<sup>-/-</sup>*Trem1*<sup>+/+</sup> (pink) and *Apoe*<sup>-/-</sup>*Trem1*<sup>-/-</sup> mice (black) (N=18-20/group)

## Supplemental figure 4



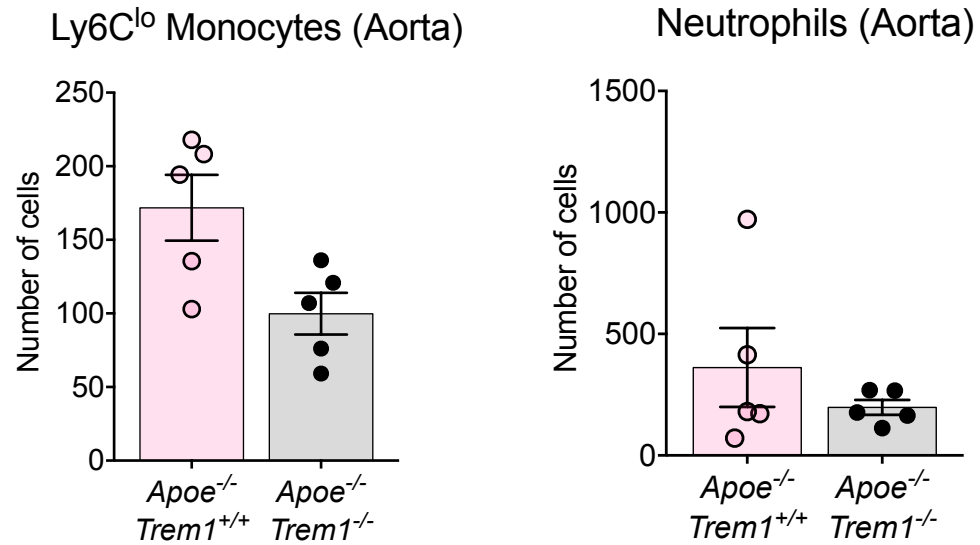
Systolic blood pressure of *Apoe*<sup>-/-</sup>*Trem1*<sup>+/+</sup> (pink) and *Apoe*<sup>-/-</sup>*Trem1*<sup>-/-</sup> mice (black) at baseline and after AngII infusion (1μg/kg/min) (N=5-7/group). \*P<0.05

Supplemental figure 5



Quantification of *Eln* mRNA expression in aorta at day 7 after AngII infusion, by RT-qPCR (N=9 in *Apoe*<sup>-/-</sup> *Trem1*<sup>+/+</sup> group, N=6 in *Apoe*<sup>-/-</sup> *Trem1*<sup>-/-</sup> group).

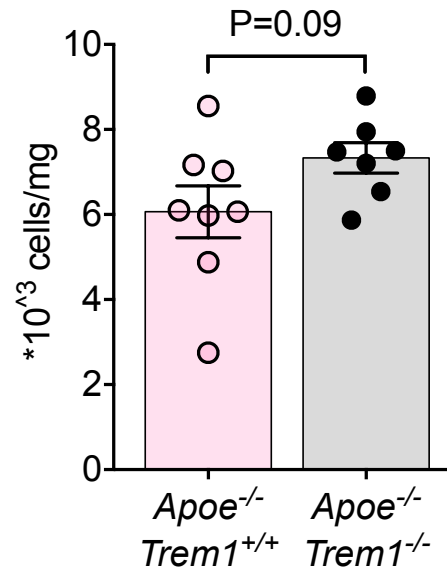
## Supplemental figure 6



CD45<sup>+</sup>CD11b<sup>+</sup>Ly6G<sup>+</sup> neutrophil count in aorta of *Apoe*<sup>-/-</sup>*Trem1*<sup>+/+</sup> (pink) and *Apoe*<sup>-/-</sup>*Trem1*<sup>-/-</sup> mice (black) at day 3 after AngII infusion (1000 ng/kg/min) (N=5/group).

## Supplemental figure 7

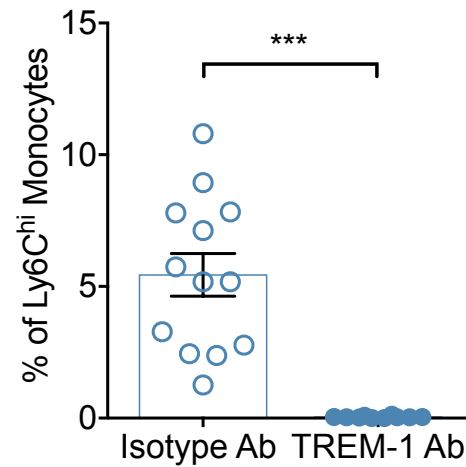
### Ly6C<sup>hi</sup> Monocytes (Spleen)



CD11b<sup>+</sup>Ly6G<sup>-</sup>Ly6C<sup>hi</sup> monocyte count in the spleen of *Apoe*<sup>-/-</sup>*Trem1*<sup>+/+</sup> (pink) and *Apoe*<sup>-/-</sup>*Trem1*<sup>-/-</sup> mice (black) at day 3 after AngII infusion (1000 ng/kg/min) (N=8 in *Apoe*<sup>-/-</sup>*Trem1*<sup>+/+</sup> group, N=7 in *Apoe*<sup>-/-</sup>*Trem1*<sup>-/-</sup> group).

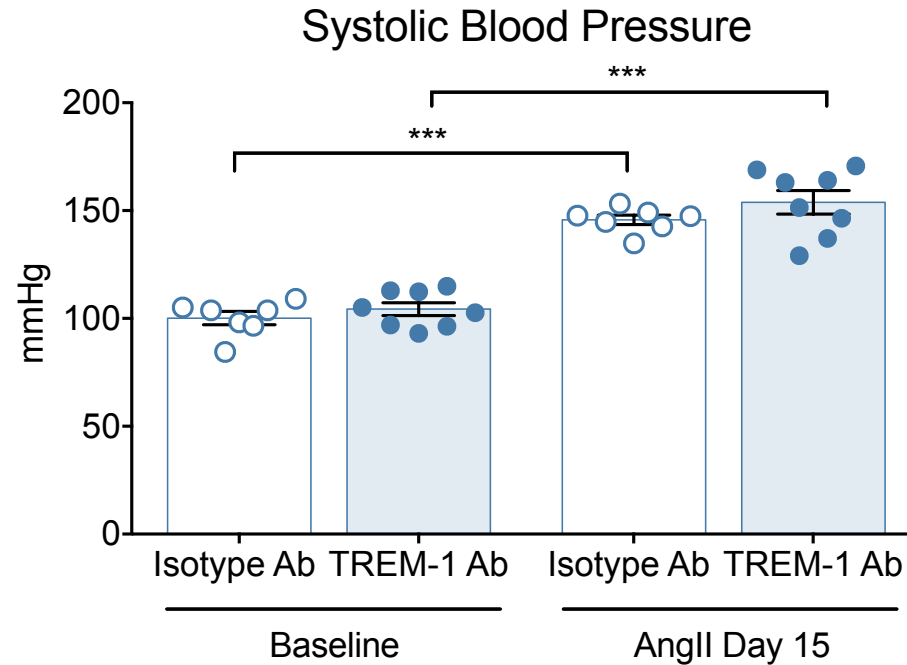
## Supplemental figure 8

### TREM-1+ Ly6C<sup>hi</sup> Monocytes (Blood)



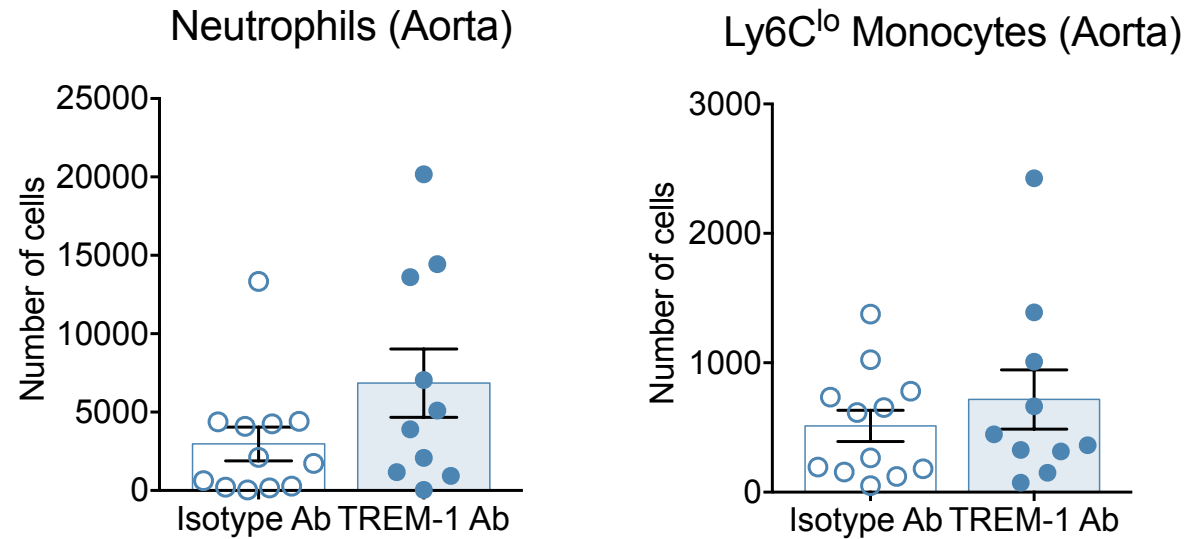
Flow cytometry quantification of TREM-1 expression on Ly6C<sup>hi</sup> classical monocytes of Isotype-treated (clear blue square) and TREM-1 Ab-treated (solid blue square) *Apoe*<sup>-/-</sup> mice, 3 days after AngII infusion (1000 ng/kg/min) (N=13 in Isotype Ab group, N=10 in TREM-1 Ab group). \*\*\*P<0.001.

Supplemental figure 9



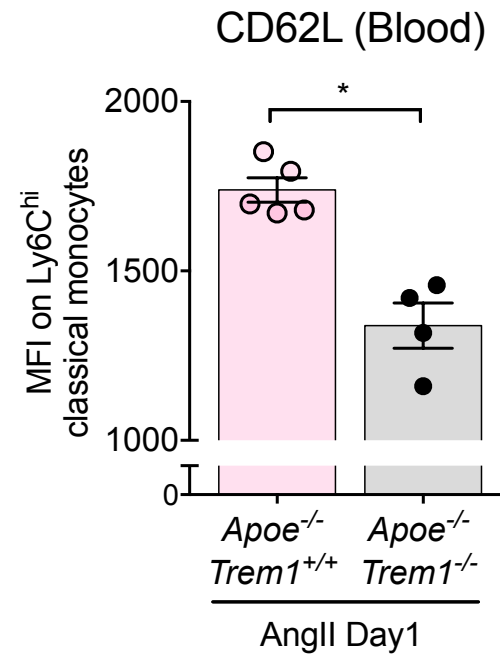
Systolic blood pressure of Isotype-treated (clear blue square) and TREM-1 Ab-treated (solid blue square) *Apoe*<sup>-/-</sup> mice, 15 days after AngII infusion (1000 ng/kg/min) (N=7 in Isotype Ab group, N=8 in TREM-1 Ab group), \*\*\*P<0.001.

## Supplemental figure 10



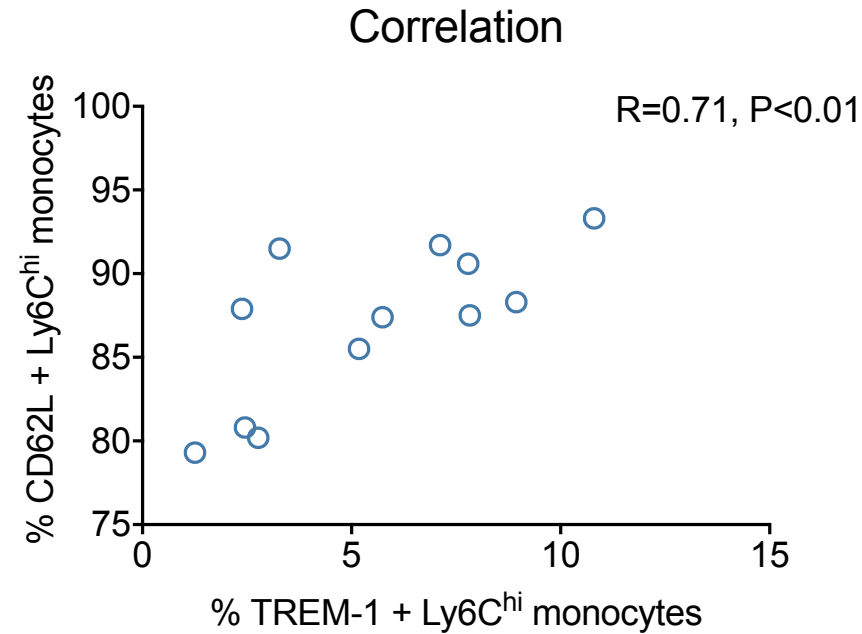
Flow cytometry quantification of CD45<sup>+</sup>CD11b<sup>+</sup>Ly6G<sup>+</sup> neutrophils and CD45<sup>+</sup>CD11b<sup>+</sup>Ly6G<sup>-</sup>Ly6C<sup>low</sup> non classical monocytes into the aortic wall at day 3 after AngII infusion (1000 ng/kg/min) (N=13 in Isotype Ab group, N=10 in TREM-1 Ab group).

## Supplemental figure 11



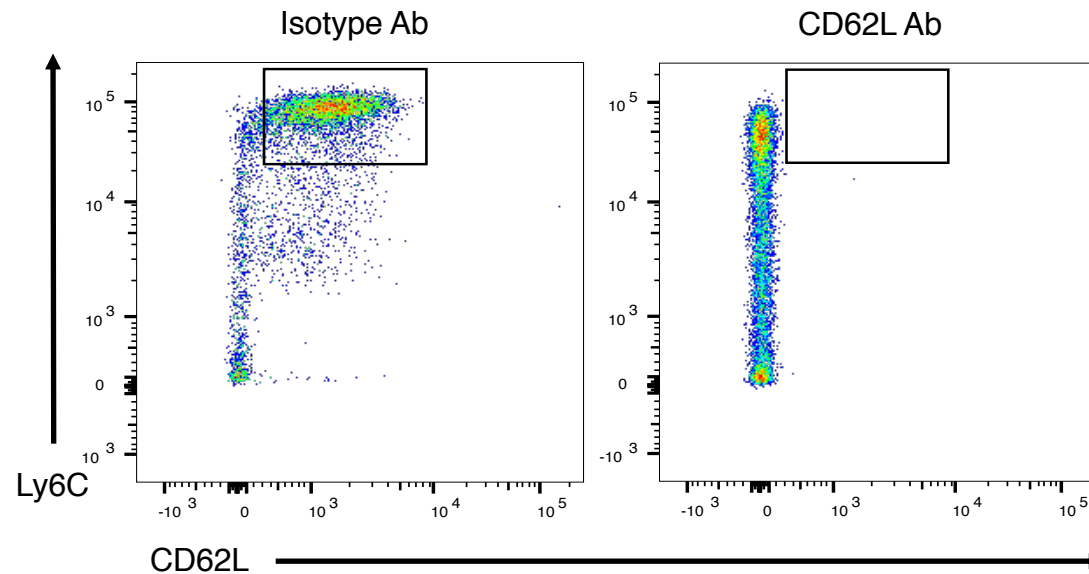
Quantification of CD62L expression (MFI) on circulating Ly6C<sup>hi</sup> classical monocytes by flow cytometry 1 day after AngII infusion (1000 ng/kg/min) (N=5 in *Apoe*<sup>-/-</sup>*Trem1*<sup>+/+</sup> group, N=4 in *Apoe*<sup>-/-</sup>*Trem1*<sup>-/-</sup> group), \*P<0.05.

## Supplemental figure 12



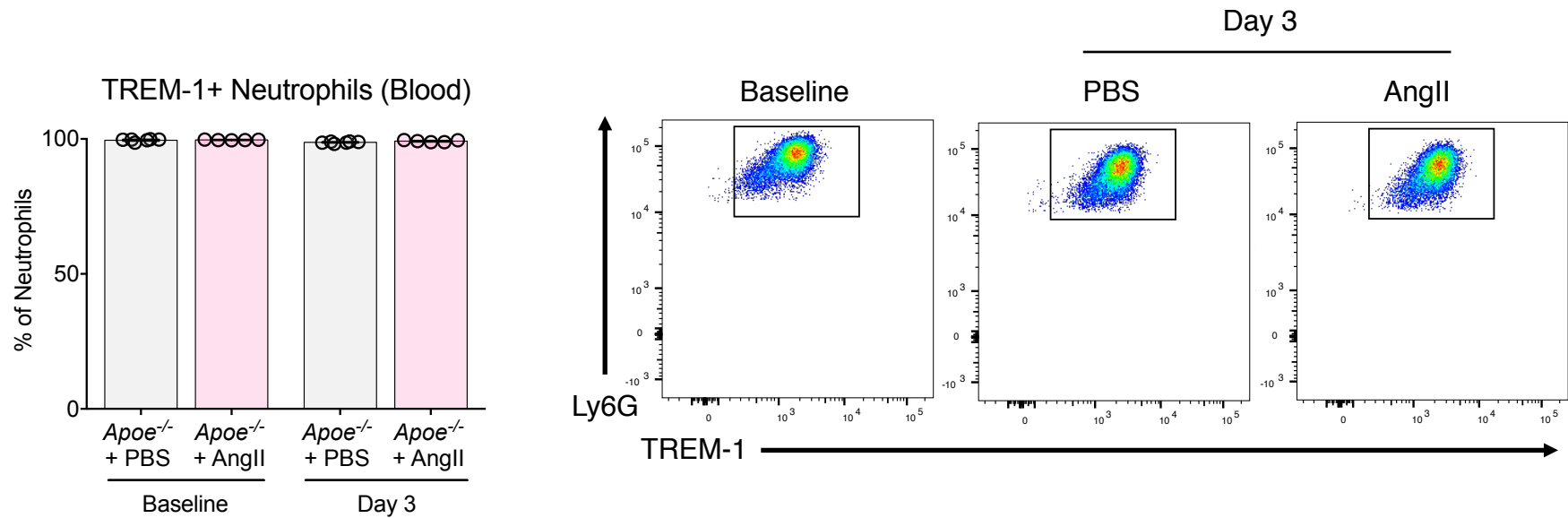
Correlation between TREM-1 and CD62L expression on circulating Ly6C<sup>hi</sup> classical monocytes quantified by flow cytometry 3 days after AngII infusion (1000 ng/kg/min), \*\*P<0.01.

## Supplemental figure 13



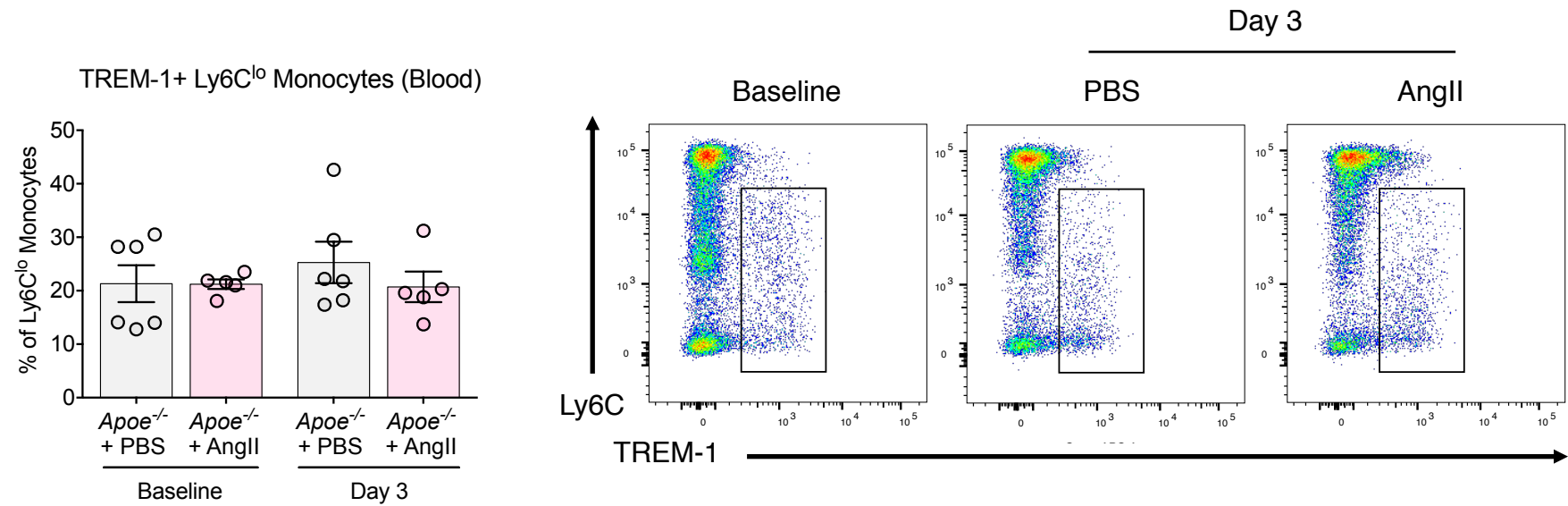
Flow cytometry analysis of CD62L neutralization on Ly6C<sup>hi</sup> classical monocytes. *Apoe*<sup>-/-</sup> mice were implanted with subcutaneous osmotic minipumps infusing AngII (1000 ng/kg/min) and were treated with either an anti-TREM-1 agonistic antibody (TREM-1 Ab) or an isotype control (Isotype Ab) every day during 3 days. In addition, animals received neutralizing anti-CD62L antibody IV (100µg/mice/d) at day 0 and Day 1.

## Supplemental figure 14



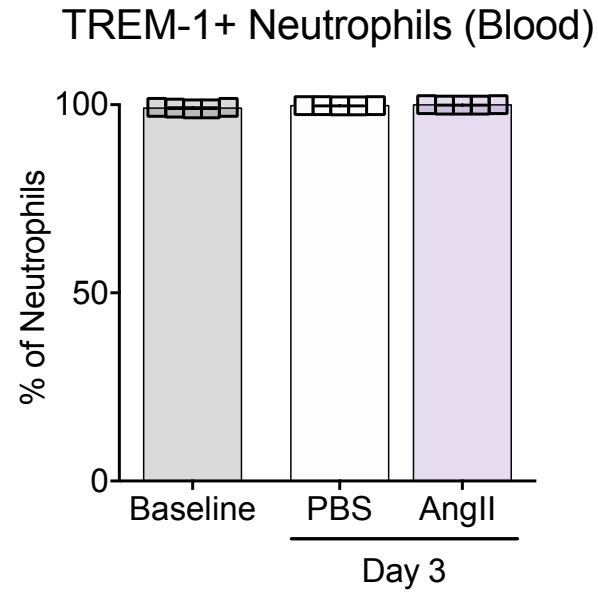
Flow cytometry analysis of TREM-1 expression on circulating CD11b<sup>+</sup>Ly6G<sup>+</sup> neutrophils at baseline and 3 days after PBS or AngII infusion (1000 ng/kg/min) in *Apoe*<sup>-/-</sup> mice (N=4-5/group).

## Supplemental figure 15



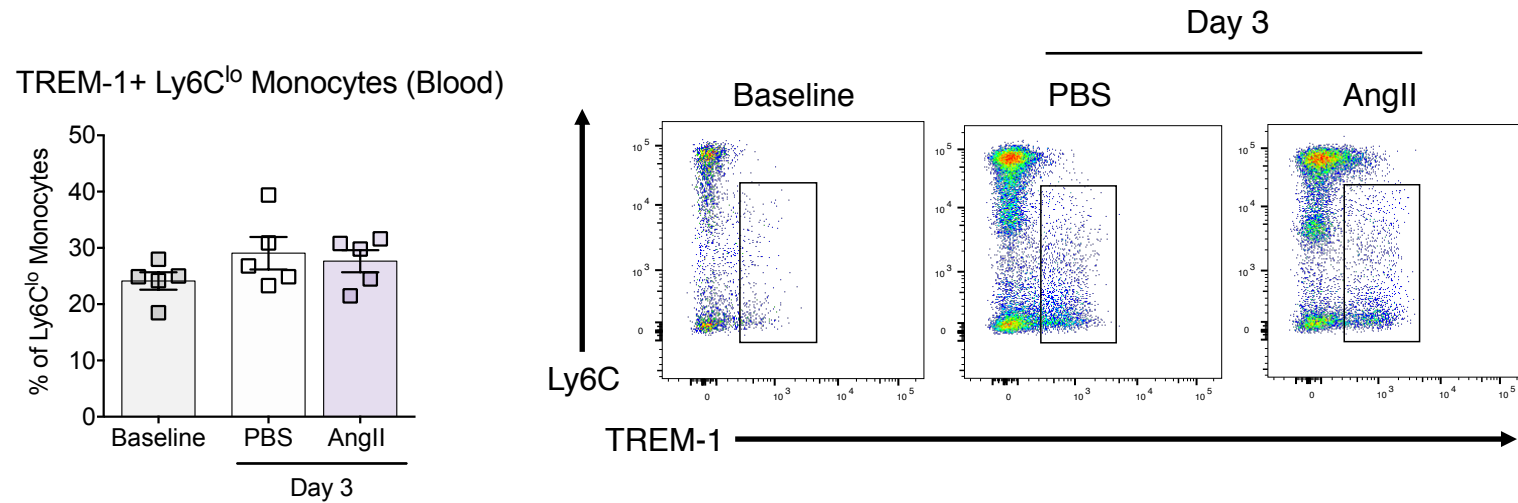
Flow cytometry analysis of TREM-1 expression on circulating CD11b<sup>+</sup>Ly6G<sup>-</sup>Ly6C<sup>low</sup> non-classical monocytes at baseline and 3 days after PBS or AngII infusion (1000 ng/kg/min) in *Apoe*<sup>-/-</sup> mice (N=5-6/group).

## Supplemental figure 16



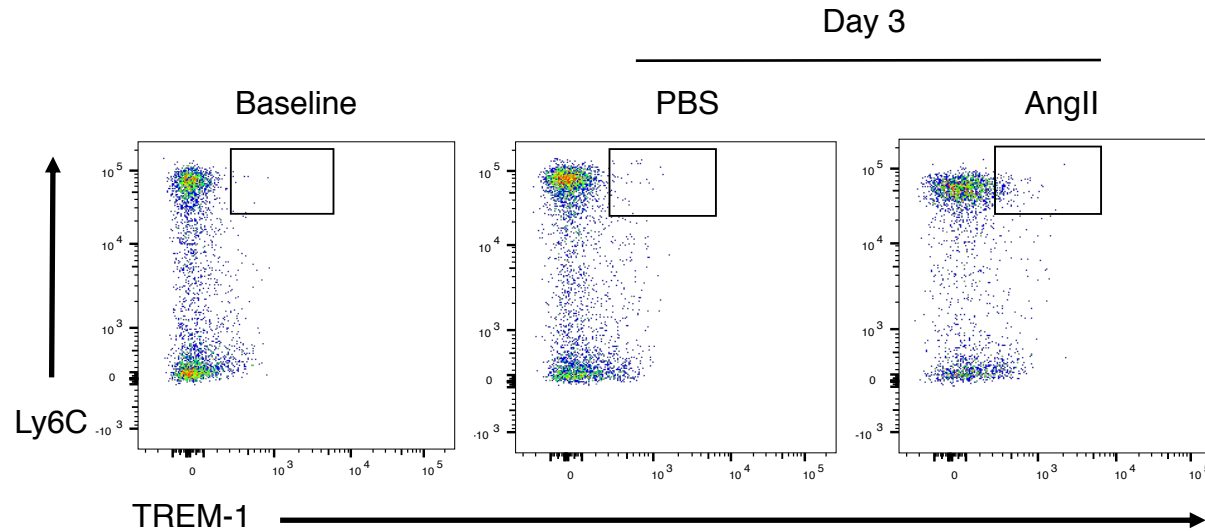
Flow cytometry analysis of TREM-1 expression on circulating and splenic CD11b<sup>+</sup> Ly6G<sup>+</sup> neutrophils at baseline and day 3 day after AngII (1000 ng/kg/min) or PBS infusion (N=5/group).

## Supplemental figure 17



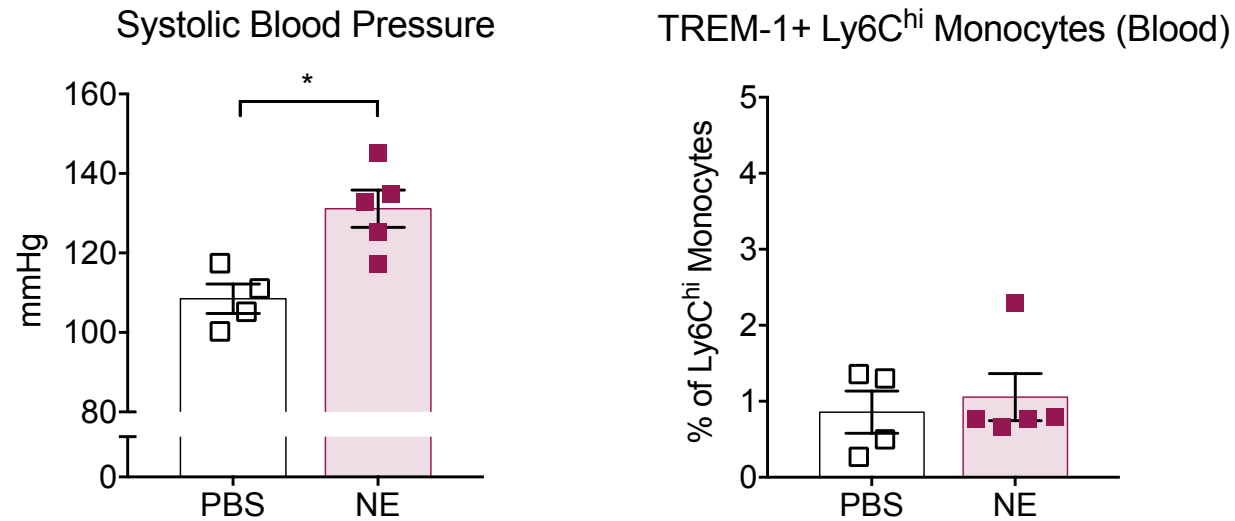
Flow cytometry analysis of TREM-1 expression on CD11b<sup>+</sup>Ly6G<sup>-</sup>Ly6C<sup>lo</sup> non-classical monocytes at baseline and after PBS or AngII infusion (1000 ng/kg/min) in the blood of C57BL/6J mice (N=5/group).

## Supplemental figure 18



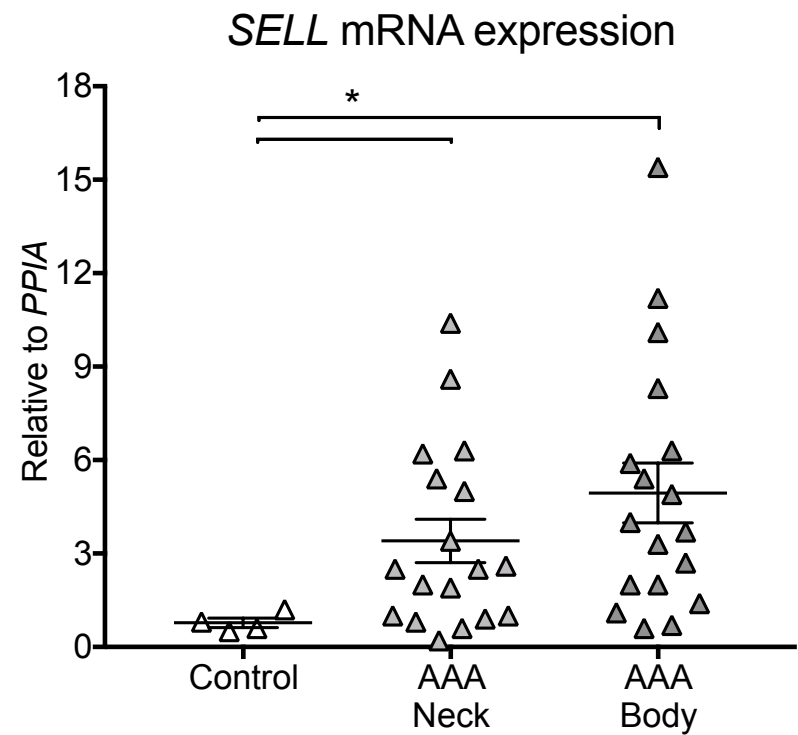
Flow cytometry analysis of TREM-1 expression on CD11b<sup>+</sup>Ly6G<sup>-</sup>Ly6C<sup>high</sup> classical monocytes at baseline and at day 3 day after PBS or AngII infusion (1000 ng/kg/min) in the spleen of C57BL/6J mice.

## Supplemental figure 19



Systolic Blood Pressure and quantification of TREM-1 expression on circulating Ly6C<sup>hi</sup> classical monocytes by flow cytometry 3 day after PBS or Norepinephrine (NE) infusion (5.6 mg/kg/j) (N=4-5/group). \*P<0.05.

Supplemental figure 20



*SELL* mRNA expression was quantified in normal aorta (from organ donors) and in AAA (neck and body) by RT-qPCR. *SELL* mRNA expression was significantly higher in AAA tissues than in normal aorta tissue.\*P<0.05