Supplemental Figure 1: Identification of Primary EPCs.

(A)Rat bone marrow and human peripheral blood derived EPCs were isolated and identified by LDL uptake and BS-1 lectin staining. Rat BM derived EPCs formed tube structures when plated in matrigel. (B) RT-PCR analysis of erbB receptor expression in various EPC populations demonstrated an identical erbB receptor expression pattern (WH = whole heart). A smaller PCR product was detected by real time RT-PCR in rat BM derived EPCs with erbB4 primers. While erbB4 is known to have at least four mRNA splice variants [6, 17], 2 within the juxtamembrane region (jm-a, jm-b) and 2 within the cytoplasmic domain (Cyt-1, Cyt-2), the primers used amplify a common region that does not overlap with these domains. Thus the smaller PCR product observed likely represents non-specific target amplification. RT-PCR for mouse eEPCs was performed on the same RNA sample on two different dates resulting in two gels (erbB2 and erbB3 vs. erbB4).

Supplemental Figure 2: erbB receptor expression and signaling in rat BM-derived EPCs.

(A) Immunoblot of rat BM derived EPC lysates showing expression of erbB2,erbB3 and NRG (B) p-Akt immunoblot of rat BM-derived EPC lysate following NRG treatment. Representative of at least 3 experiments.

Supplemental Figure 3: NRG does not affect eEPC adhesion or migration.

(A) eEPC adhesion assay. 96-well plates were coated overnight with the indicated concentrations of human fibronectin or a mixture of fibronectin and NRG-1 β (50ng/ml) in PBS. eEPCs resuspended in serum free media were added to each well (250,000 cells/mL, 200ul per well) and incubated for 1 hour at 37°C. Non adherent cells were then

removed and the wells were washed extensively. Adherent cells were quantified by acid phosphatase assay.(n=3) (B) Transwell migration assay. Transwell inserts were placed in the wells of a 24 well plate containing 0.5ml serum free media and the indicated treatments (N= NRG-1β 50ng/ml, GW= GW572016 1uM, FCS= fetal calf serum). eEPC were added to the top portion (50,000 cells in 1ml media) and plates were incubated for 6hrs at 37°C. Cells were fixed and stained. eEPCs on the to portion of the insert were removed with a cotton swab and cells and the bottom portion were quantified.(n=3 * $p < 0.05$).

Supplemental Figure 4: eEPC accumulate in the myocardium following ischemia and reperfusion.

Langendorff perfused mouse hearts were subjected to 15 minutes of ischemia. At 20 minutes of reperfusion, 5x105 eEPCs, fluorescently labeled with the lipophilic tracer DiIC18(3), were injected in a side port over the course of 30. Hearts were perfused for an additional 10 minutes then snap frozen liquid nitrogen for cryosectioning. Sections were mounted in DAPI containing mounting media and eEPC were quantified by microscopy. (A) representative image (B) Quantification of eEPCs/20x field. (n=3, * $p<0.05$)