# Estradiol increases hematopoietic stem and progenitor cells independent of its actions on bone

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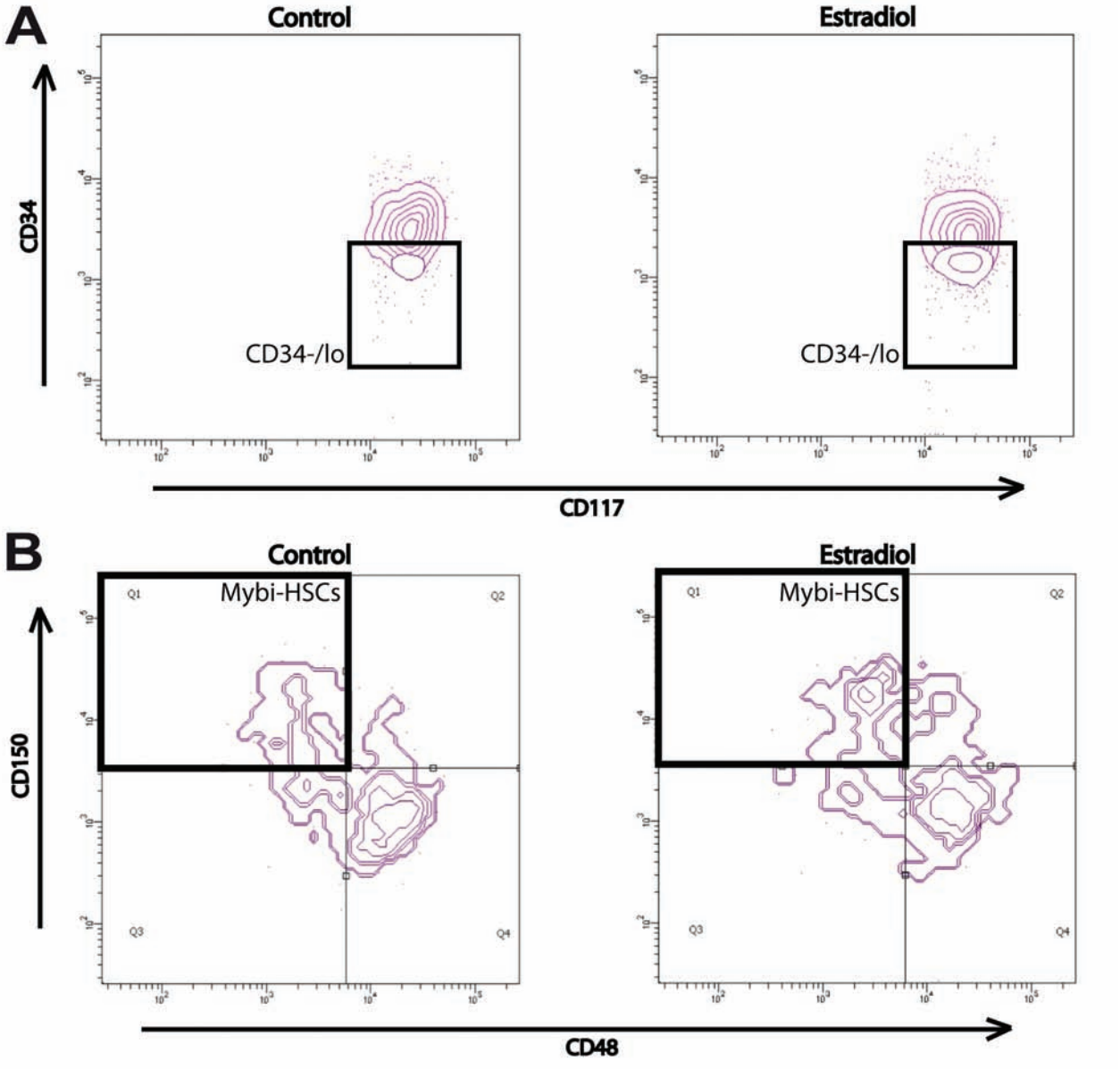
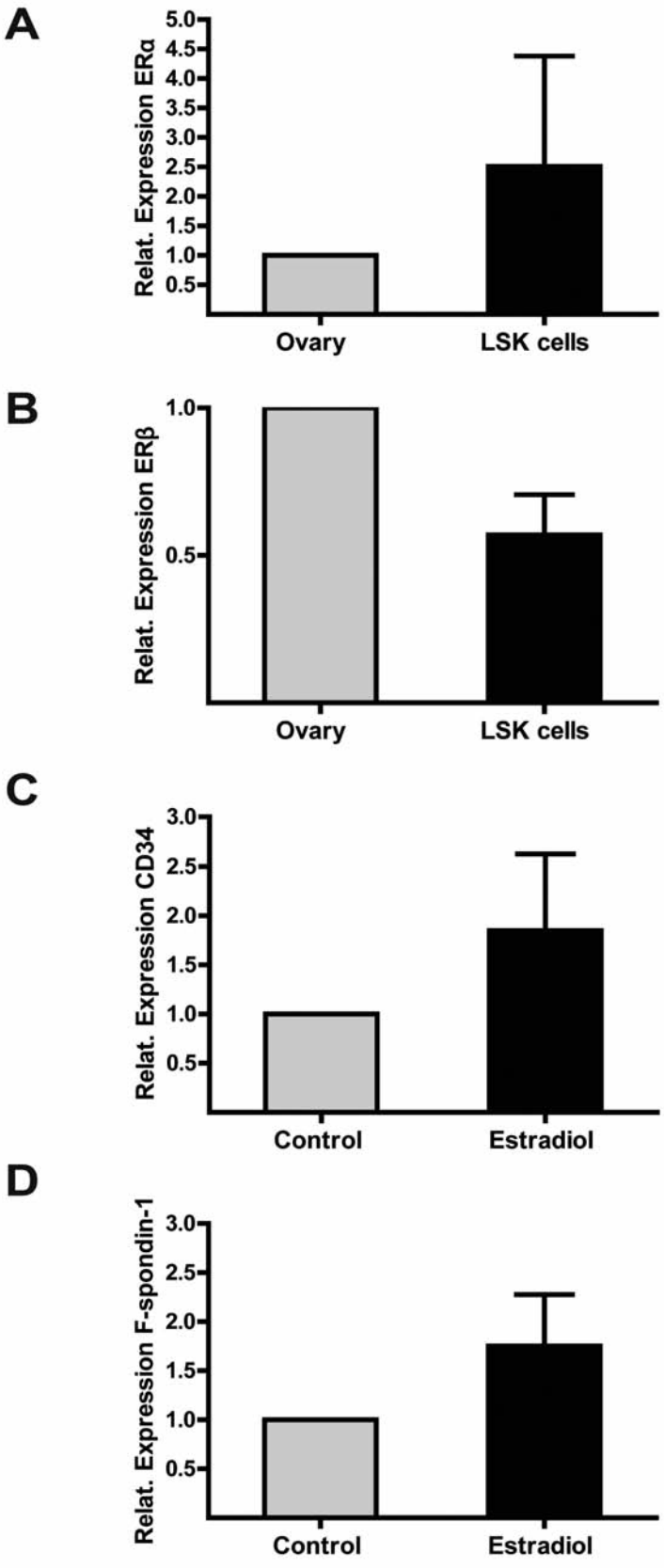



Online Supplementary Figure S1. (A) CD34$^{-/lo}$-LSK cells of control and estradiol treated mice. Representative FACS blots of CD34$^{-/lo}$ LSK cells from the bone marrow from control and treated with estradiol for four weeks. The summarized data (n=7) are shown in Figure 1G. (B) Myeloid biased LT-HSCs (Mybi-HSCs) of control and estradiol treated mice. Representative FACS blots of myeloid LT-HSCs (CD48$^{-}$ CD150$^{+}$CD34$^{-/lo}$-LSKcells) from control and treated with estradiol for four weeks. The summarized data (n=7) are shown in Figure 1H.




Online Supplementary Figure S1. (A and B) Expression of ERα (Esr1) and ERβ (Esr2) in LSK cells. Relative mRNA-expression of ERα (A) and ERβ (B) in LSK cells compared with expression in ovary tissue was determined by quantitative real time PCR. (C and D) Expression of CD34 (Cd34) and F-Spondin (Spon1) in estradiol treated bone marrow stromal cells. Adherent bone marrow stromal cells had been cultured for seven days and subsequently treated with estradiol for ten days and relative mRNA expression of CD34 (C) and F-Spondin (D) determined by quantitative real time PCR was compared to levels in control treated cells.

| | Control | Estradiol |
|---|---|---|
| BV/TV (%) | 17.7 +/- 2.4 | 29.9 +/- 4.0* |
| ObN/Bpm (mm-1) | 14.4 +/- 2.0 | 16.9 +/- 4.8 |
| Obs/BS (%) | 16.1 +/- 2.2 | 19.4 +/- 6.2 |
| OcN/Bpm (mm-1) | 1.2 +/- 0.4 | 1.9 +/- 0.4 |
| OcS/BS (%) | 2.0 +/- 0.4 | 3.3 +/- 0.4* |
| BFR/BS (µm3/µm2/y) | 105 +/- 9 | 147 +/- 6** |

**Online Supplementary Table S1.** Bone histomorphometric analysis of lumbar vertebrae (L4 and L5) from control and estradiol treated mice. Bone volume per tissue volume (BV/TV), osteoblast numbers per bone perimeter (ObN/Bpm), osteoblast surface per bone surface (Obs/BS), osteoclast numbers per bone perimeter (OcN/Bpm), osteoclast surface (OcS/BS) were quantified on toluidine blue-stained undecalcified sections using the Osteo-histomorphometry system (Osteometrics®). For determination of the bone formation rate per bone surface (BFR/BS) mice were given two injections of calcein, nine and two days before dissection. Fluorochrome measurements for the determination of the bone formation rate were performed on two non-consecutive 12 mm thick sections for each animal. Statistical differences between the groups were assessed by Student's t-test (n=7).