Reviewer's report

Title: A quantitative assessment of the content of hematopoietic stem cells in mouse and human endosteal-bone marrow: A simple and rapid method for the isolation of mouse central bone marrow

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Reviewer: Jorg Bungert

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The authors compared different methods for isolating hematopoietic stem and progenitor cells from mouse bone marrow and also analyzed reconstitution of hematopoiesis in mice using human fetal liver or bone marrow derived cells. The authors compared two methods for isolating central bone marrow cells which they refer to as single-cut or double-cut method. They provide evidence that the single-cut method yields efficient numbers of hematopoietic stem and progenitor cells. Furthermore, the authors demonstrate that isolating cells from the tibia significantly increases the number of stem and progenitor cells. Enzymatic extraction of endosteal bone marrow increased the number of specific subsets of HSCs but also reduced the presence of specific antigens in the stem and progenitor cell population. Reconstitution with fetal liver or bone marrow derived human cells demonstrated that these cells were able to reconstitute the endosteal niche as well.

Overall, this manuscript presents a number of interesting and important observations. Most of the data confirm previous studies but there are some technical as well as biological novelties that increase the impact of this paper. There are some minor issues that should be addressed.

1. Some of the data are described very briefly and it is not always easy to follow what was done and what the data show. For example, description of Figure 4A in the text (line 267) “Isolation of eBM recovered 84% more cells than by flushing alone” does not seem to correlate with the numbers shown in the figure 4A or the description of the data in the figure legend. This is just one example and in general, the authors should describe the data in more detail.

2. Discussion (line 371 to 386): It seems some references are missing. The authors state “three other studies measured BM content….” But did not provide references. In the next sentence they refer to Chervenick et al., but do not provide a reference number.

Level of interest: An article of outstanding merit and interest in its field

Quality of written English: Acceptable
Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I declare that I have no competing interests