

Propositions (Stellingen)

NICHE CONTRIBUTIONS TO BONE MARROW (RE)GENERATION

1. A distinct type of endothelium arises during ontogeny and re-emerges upon regeneration after injury in human bone marrow. (This dissertation)
2. Interrogation of the transcriptome of human endothelial cells associated with bone marrow (re)generation enables identification of novel angiocrine factors. (This dissertation)
3. (Endothelial-derived) Interleukin-33 (IL-33) facilitates angiogenesis, osteogenesis, and hematopoiesis. (This dissertation)
4. Endothelial cells generate a distinct subset of niche-forming mesenchymal stromal cells (MSCs) via the process of endothelial to mesenchymal transition (EndMT). (This dissertation)
5. (Exogenous) IL-33 is a novel and potent driver of EndMT. (This dissertation)
6. Considerable caution is required when interpreting results obtained with transgenic Cre mice (related to sensitivity and specificity of the line used). Unanticipated off-target effects need to carefully be taken into account; multiple Cre lines previously assumed to mark specific cell populations also recombine in broader cell populations (Osx-cre mice). On the other hand, inefficient recombination efficiency is another cause for the apparent discrepancies in the field (Nes-Cre mice and Nestin-GFP mice).
7. Despite different groups stressing the importance of their own favorite niche cell types, there is actually more consensus than discrepancies in the field. Bone marrow endothelial cells and mesenchymal stromal cells constitute important sources of HSC niche factors. (Adapted from Isabel Beerman)
8. While experiments in mice have provided tremendous insights into the workings of complex biological systems, more human studies are necessary to determine the relevance of these findings and harness their therapeutic potential for humans.
9. Negative results are not worthless, they are (almost) as useful as positive results. To quote Thomas Edison: "I can never find the thing that does the job best until I find the ones that don't."
10. The undue pressure to publish in prestigious journals has become an end in itself instead of it being a means to the end. (Adapted from Randy Schekman)
11. "Sometimes the best way to learn a lesson isn't just hearing the words, but putting it into practice by experimenting with it and finding its truth for yourself instead of taking someone else's word for it." (A.J. Darkholme)

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