

## **Building Bone**

*human mesenchymal stromal cells and the identification of genes and processes in osteoblast differentiation*

### **Propositions**

1. The cytoskeleton is important in influencing osteoblast differentiation. (*This thesis*)
2. Parbendazole induces *in vitro* osteoblast differentiation of human mesenchymal stromal cells through its effect on the microtubules. (*This thesis*)
3. The bioinformatics tool, the Connectivity Map, is useful in predicting compounds that influence osteoblast differentiation. (*This thesis*)
4. CLIC3 modulates *in vitro* osteoblast differentiation and *in vivo* bone formation. (*This thesis*)
5. Bone metabolism and growth occurs and changes over time and research studies should take this into account to enhance the value of results. (*This thesis*)
6. The influence of research is limited by the audience it reaches.
7. With the rapidly expanding use of mesenchymal stromal cells, there is an increasing need to better understand and characterize the potential sources and specific potencies of these cells. (*Adapted from Brown C, J Tissue Eng Regen Med. 2019 Sep;13(9):1738-1755.*)
8. Creating a good wildlife photograph requires use of the appropriate settings, a strong composition and a bit of luck, which is similar to completing a research project.
9. Being chased by elephants on a regular basis can provide a number of health benefits.
10. In the realm of ideas everything depends on enthusiasm...in the real world all rests on perseverance. (*Johann Wolfgang von Goethe*)
11. Working on a PhD research project is like putting together a 1,000-piece puzzle without knowing you're missing 10 pieces.

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20 March 2020