Maintaining the stemness of satellite cells during long-term culture

Stellingen behorende bij het proefschrift

Maintaining the stemness of satellite cells during long-term culture

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1. Fluorescence activated cell sorting (FACS) sorting for species specific CD56 and CD29 leads to highly purified satellite cells as a basis to gain better scientific understanding of stemness features. (this thesis)

2. Inhibition of p38 delays loss of stemness in bovine myoblasts during long-term culture. (this thesis)

3. JAK2-STAT3 activation is required for bovine myoblast differentiation but is not the cause of long-term culture defects in bovine myoblasts. (this thesis)

4. Loss of stemness in satellite cells during subculturing is distinct from loss of stemness by differentiation but similar to aging. (this thesis)

5. Fifty years hence, we shall escape the absurdity of growing a whole chicken in order to eat the breast or wing, by growing these parts separately under a suitable medium. (Winston Churchill)

6. Cultured meat involves approximately 7-45% lower energy use, 78-96% lower GHG emissions, 99% lower land use, and 82-96% lower water use than conventionally produced European meat according to the life cycle assessment (LCA) research. (Hanna L. Tuomisto et al. *Environ Sci Technol*. 2011)

7. As the cell ages, translational defects and entropy progressively increase the amount of cellular damage, and clearance and quality control mechanisms grow less effective. (Race DiLoreto et al. *Molecular biology of the cell*. 2015)

8. Maintaining stemness of satellite cells facilitates and economizes the development of cultured meat by reducing the need for donor samples and simplifying large scale cell production.

9. Do the best you can until you know better. Then when you know better, do better. (Maya Angelou)

10. When three are walking together, I am sure to find teachers among them. I will select their good qualities and follow them, their bad qualities and avoid them. (Confucius)
-----子曰：“三人行，必有我师焉。择其善者而从之，其不善者而改之。”

11. It is important to master necessary scientific and technological knowledge before scientific exploration. “If I have seen further it is by standing on the shoulders of Giants”. (Isaac Newton)