

Extracellular Vesicles within the Bone Marrow Niche

A novel way of communication between osteoblasts and hematopoietic progenitor cells

PROPOSITIONS

1. Osteoblasts communicate with their environment via specialized nano-sized messengers packaged with regulatory cargo. (*This thesis*)
2. Beyond forming bone, osteoblast-derived extracellular vesicles are indispensable for the regulation of key physiological processes. (*This thesis*)
3. The morphology and proteomic composition of extracellular vesicles depend on the mineralization stage of the osteoblasts from which they originate. (*This thesis*)
4. Global mRNA and microRNA expression profiles confirm selective sorting of RNA cargo into extracellular vesicles. (*This thesis*)
5. Osteoblast-derived extracellular vesicles contain cargo that stimulates cell proliferation. (*This thesis*)
6. Although considered as cellular waste machineries for many years, extracellular vesicles also act as signaling machineries exchanging specifically packaged information between cells.
7. Extracellular vesicles serve as possible models for the development of novel therapeutic approaches in regenerative medicine.
8. The success of allogeneic cord blood transplantations using publicly stored units circumvents the need for private cord blood banking.
9. Globalization is emerging as a key factor in the gradual loss of genetic diversity in our increasingly homogenized world.
10. Living abroad changes the perspective of the length of life.
11. The benefit of living in a rainy country is that it makes one appreciate the sunshine that others take for granted.

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