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Bone marrow transplantation in mice as a tool to study M2 macrophage activation in atherogenesis

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Author: Ren, Baoyan

Title: Bone marrow transplantation in mice as a tool to study M2 macrophage activation in atherogenesis

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Propositions (Stellingen)
Accompanying the PhD thesis

Bone marrow transplantation in mice as a tool to study M2 macrophage activation in atherogenesis

Baoyan Ren, Leiden, December 2017

1. Leukocyte Arginase 1 is important for M2 macrophage activation and foam cell formation, but does not influence diet-induced atherosclerosis development. (this thesis)
2. Foam cell formation is the hallmark, but not the only determinant in atherosclerosis susceptibility. (this thesis)
3. MKP2 in bone marrow-derived cells protects LDL receptor knockout mice against diet-induced atherosclerosis development. (this thesis)
4. The activity and function of Usf 1 in atherosclerosis is cell-type dependent. (this thesis)
5. Macrophages take on different phenotypes and effector functions depending on their environment and which intracellular signaling pathways are activated in atherosclerosis. (Tabas & Bornfeldt. *Circulation Research* 118.4 (2016): 653-667)
6. Bone marrow transplantation in mice is a crucial tool in cardiovascular research that greatly enhances research efficiency and cost-effectiveness. (Aparicio-Vergara et al. *Atherosclerosis* 213.2 (2010): 335-344)
7. The genetic and metabolic background of the mouse model, used for studying the pathogenesis of atherosclerosis, needs to be taken into account when investigating the role of a specific gene. (this thesis & Kunjathoor et al. *Journal of Clinical Investigation* 97.7 (1996): 1767)
8. The potential value of known macrophage M1 and M2 phenotype markers, as diagnostic indicators and therapeutic targets, is limited because of the wide spectrum of macrophage phenotypes induced by the local microenvironment in complex *in vivo* systems. (this thesis & Martinez et al. *F1000prime reports* 6 (2014))
9. Social collaboration skills and practical laboratory skills are both essential for a successful PhD.
10. Feedback makes better research.

Baoyan Ren

14-12-2017, Leiden