Molecular ultrasound imaging

Propositions

1. Arterial denudation and flow-induced endothelial dysfunction are valid models for clinically relevant arterial pathologies, such as neointima formation and native atherosclerosis, and can be investigated in mice subjects. (This thesis)
2. Molecularly-targeted microbubbles with a fluorescent shell enable bimodal imaging protocols by employing the combination of two-photon laser scanning microscopy (TPLSM) and molecular ultrasound (US). (This thesis)
3. Both molecular TPLSM and US imaging modalities can be successfully applied as new approaches to evaluate upregulation and luminal exposure of endothelial markers in arteries subjected to high shear stress and flow rates. (This thesis)
4. Non-invasive molecular US is capable of detecting both endothelial recovery after arterial denudation and focal areas of transient endothelial activation triggered by oscillatory blood flow condition. (This thesis)
5. Molecular US imaging of early endothelial recovery following revascularization procedures could help in personalizing both post-medication composition and optimal time-point of cessation of medication. (This thesis – Valorization addendum)
6. Curiosity should be the main characteristic of a researcher.
7. Difficulties during the PhD trajectory result in professional and personal evolution.
8. Frequently, the key of troubleshooting is going back to basic rationality and innocent thinking.
9. Never put off until tomorrow what you can do today. (Romanian proverb)