Clinical application of mass spectrometry imaging for analysis of bone and cartilage

Propositions accompanying the dissertation

Clinical application of mass spectrometry imaging for analysis of bone and cartilage

Towards improved molecular understanding of impaired skeletal healing

1. The molecular understanding of bone fracture healing and cartilage repair is still limited, especially considering the importance of molecules to realize healthy healing. – This thesis
2. The analysis of bone and fracture hematoma with MALDI-MSI can be used to explore the importance of different molecules and pathways in healthy and impaired healing. – This thesis
3. Lipid profiles change throughout the fracture healing process and can be affected by treatment. – This thesis
4. Citrulline supplement can enhance fracture healing via improved angiogenesis and earlier soft and hard callus formation. – This thesis
5. LA-REIMS can be used to study molecular distributions on uneven surfaces and can potentially be used *in vivo* for outcome prediction in the future. – This thesis
6. Methodological improvements in mass spectrometry imaging for analyses of additional tissue and sample types make them available to a wider variety of research fields. – This thesis
7. Molecular research focused on healthy and impaired skeletal healing can provide new treatment options and, therefore, reduce healthcare costs. – This thesis
8. Collaborations between research institutes and clinical practice are of importance to answer clinically relevant questions. – This thesis
9. Nobody said it was easy. No one ever said it would be this hard. – The Scientist, Coldplay
10. Family is a life jacket in the stormy sea of life. – J.K. Rowling
11. Libraries were full of ideas—perhaps the most dangerous and powerful of all weapons. – Throne of Glass, Sarah J. Maas

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