Local metabolism in preclinical disease models studied with mass spectrometry imaging

Propositions accompanying the dissertation

**Local metabolism in preclinical disease models
studied with mass spectrometry imaging**

1. Animal models are a fundamental tool in preclinical studies for studying human disease. (this thesis)

2. Metabolic processes are not only very dynamic but – in the context of a more complex living being – systemic as well as localized. (this thesis)

3. The knowledge on the spatial distribution of metabolites in tissues is indispensable to reveal and understand the molecular and cellular complexity of diseases. (this thesis)

4. Mass spectrometry imaging together with other imaging modalities and other non-imaging omics technologies carry huge potential to provide new insights into many disease mechanisms. (this thesis)

5. It is indispensable to contextualize these molecular distribution maps with the underlying histological information for a correct interpretation of mass spectrometry imaging data. (this thesis)

6. Assigning molecular identities to signals detected in mass spectrometry imaging is and will remain a challenge. (this thesis)

7. 每个科学家都梦想做一些可以帮助世界的事. -屠呦呦 (Every scientist dreams of doing something that can help the world. -Tu You-You)

8. Life is not easy for any of us. But what of that? We must have perseverance and above all confidence in ourselves. We must believe that we are gifted for something and that this thing must be attained. -Marie Curie

9. You don't make progress by standing on the sidelines whimpering and complaining. You make progress by implementing ideas. -Shirley Chisholm

10. Disciplining yourself to do what you know is right and important, although difficult, is the high road to pride, self-esteem, and personal satisfaction. -Margaret Thatcher

Jian-Hua Cao, 6th October 2022