High-throughput mass spectrometric N-glycomics

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Stellingen behorende bij het proefschrift

High-throughput mass spectrometric *N*-glycomics

1. Sialylation is a critical aspect of glycosylation and should not be disregarded because of a difficulty in its analysis (this thesis).
2. MALDI mass spectrometry is the most high-throughput method for compositional *N*-glycan analysis (this thesis).
3. No single analytical method is capable of determining all structural and conformational aspects of a glycan molecule to its full complexity. However, the combination of orthogonal methods may highlight which glycosylation characteristics are of importance in a clinical setting (this thesis).
4. Protein glycosylation is ultimately constrained by the number of glycosylation sites within a given protein, which leads to a complex correlation structure between the individual glycan species. It may therefore be warranted to not see the abundance of a single glycan as the most relevant biological information, but rather the average glycan and the spread of its features (this thesis).
5. While the lactonization of α2,3- and α2,8-linked sialylation is helpful for mass spectrometric glycan analysis, it is sufficiently easy to accomplish that it is likely to happen *in vivo* as well. The biological consequences of this are not known.
6. Care has to be taken when interpreting glycosylation characteristics as specific biomarkers of health and disease, as many observations appear to be related to general aspects of immunity and inflammation rather than something that is disease-specific.
7. Language in the glycosciences is not yet sufficiently standardized. Co-occuring writing styles include “N-glycosylation” and “*N*-glycosylation”, “biantennary” and “diantennary”, “tetra-antennary” and “tetraantennary”, and there is a large variety in hyphenation strategies as well.

8. Glyco(proteo)mics should not be regarded as a separate field of research, but as part of a larger framework of post-translational modifications and interactions thereof: “PToMics”.
9. A society striving for equality needs sufficient inequality to enforce this.
10. While asking a question may reveal the ignorance of a person, it might then also prompt the amelioration of that situation.
11. It is the question which aspect of large-scale coffee consumption has the most positive influence on the scientist: the state of constant caffeination, or the regular walk towards the coffee machine.
12. While we are undeniably making great scientific progress, we may still be in the stage of just rediscovering the knowledge that was lost from the ancient world.