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## Glycosidases as an analytical tool in glycomics assays

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## Stellingen behorend bij het proefschrift getiteld

### Glycosidases as an analytical tool in glycomics assays

1. The assays developed in this thesis are based on the approach of “*Destructive-enhancement*” whereby the structure of *N*-glycans is “*destroyed*” by exoglycosidases so as to “*enhance*” high-throughput quantification of glycan structural elements (this thesis).
2. High-throughput MALDI-TOF-MS-based assays are valuable for quantification of *N*-glycan composition and sialic acid positional isomers, and now also for specific fucose linkages (this thesis).
3. Chromatography and mass spectrometry are some of the fundamental tools in glycomics biomarker discovery. However, they can be replaced by simplified and cost-effective biochemical-spectrophotometric assays for targeted glycan epitope quantification (this thesis).
4. Exoglycosidase cleavage of antennary fucoses on sialylated arms of *N*-glycans can now be performed without requiring desialylation (this thesis).
5. Nature has a rich diversity of glycans. Screening for glycosidases and glycosyltransferases in glycan-rich environments can lead to the discovery of novel enzymes that can be used as tools in glycomics and glycan engineering of biopharmaceuticals.
6. The possibility of mass differentiating derivatisation of fucose residues in specific linkages should be investigated.
7. In the future, glycomics might become a prognostic tool for generalised metabolic health of individuals. Hence, developing user-friendly, cost-effective, and portable colorimetric kits and assays for self-testing can have valuable commercial implications.
8. Adoption of glycomic assays into industrial quality control applications is dependent on the development of automated high-throughput workflows from sample processing to analyte measurement and data processing.
9. As a research analytical chemist, one should strive to develop a comprehensive understanding of the electronics and physics which are the fundamentals of one’s analytical instruments – which are the tools of our trade –, so as to make an efficient and thorough use of them.
10. Working without a continuous stream of learning is the most boring role in science.
11. Commercialisation of analytical assays should not be shied away from by academic scientists.