

University of Groningen

Novel techniques for the quantification of protein biomarker isoforms by liquid chromatography and mass spectrometry

Sleumer, Bas

DOI:

[10.33612/diss.987607473](https://doi.org/10.33612/diss.987607473)

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version

Publisher's PDF, also known as Version of record

Publication date:

2024

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Sleumer, B. (2024). *Novel techniques for the quantification of protein biomarker isoforms by liquid chromatography and mass spectrometry*. [Thesis fully internal (DIV), University of Groningen]. University of Groningen. <https://doi.org/10.33612/diss.987607473>

Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.

Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.

Propositions

1. When evaluating biomarker concentration results, one must be aware that multiple biomarker isoforms frequently occur and that some analytical techniques cannot distinguish them. (this thesis)
2. Contrary to what is often thought, reduction and alkylation can also successfully be performed after the digestion process. (this thesis)
3. Liquid chromatography - tandem mass spectrometry is capable of quantitatively distinguishing proteins with a single amino acid difference. (this thesis)
4. Enzymatic digestion is not straightforward and requires careful optimization. (this thesis)
5. A non-specific capture antibody can be utilized for the selective quantification of a protein. (this thesis)
6. Multiplexed immunocapture can play a crucial role in selectively quantifying multiple isoforms within a single method. (this thesis)
7. "I've always believed that you should never, ever give up and you should always keep fighting even when there's only a slightest chance." (Michael Schumacher)
8. "Just leave me alone, I know what to do." (Kimi Räikkönen)
9. "The truth of the matter is that you always know the right thing to do. The hard part is doing it." (Norman Schwarzkopf, Jr.)