



University of Groningen

Screening of Doping Substances in Human Urine with Gas and Liquid Chromatography Coupled to High-Resolution Mass Spectrometry

Abushareeda, Wadha

DOI:

[10.33612/diss.131230681](https://doi.org/10.33612/diss.131230681)

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:

2020

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

Citation for published version (APA):

Abushareeda, W. (2020). *Screening of Doping Substances in Human Urine with Gas and Liquid Chromatography Coupled to High-Resolution Mass Spectrometry*. University of Groningen. <https://doi.org/10.33612/diss.131230681>

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).

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

Belonging to the thesis

Comprehensive Screening of Sports Doping Substances in Human Urine with Gas and Liquid Chromatography Coupled to High-Resolution Mass Spectrometry

1. Doping is the most unethical behavior in sports, as it violates the spirit of sports and it can pose a potential risk for the athletes' health. [In this Thesis]
2. The use of full scan high-resolution acquisition (FS/HR) with GC/MS for the detection of known and unknown TMS derivatives of AAS provides anti-doping testing bodies with a new analytical tool. [In this Thesis]
3. A combination of LC and GC systems with FS/HR-MS acquisition consists an ideal combination for the detection of any small molecule with simultaneous determination of steroid profile according to WADA Code specifications and detection of intact sulfo-conjugated metabolites of Phase II metabolism. [In this Thesis]
4. An advantage of FS/HR-MS compared to triple quadrupole technology is the capability to perform reanalysis of the samples by simply reprocessing the stored data files, whenever new doping substance or its metabolite is discovered. [In this Thesis]
5. Development of these new and accurate anti-doping screening approaches will improve deterrence of doping abuse of athletes and will contribute to maintain the fairness of sport in training and competition events and maintain the health of the competing athletes. [In this Thesis]
6. " He who cheats us is none of us." [Prophet Mohammad], The Messenger of Allah
7. "Believe in yourself! Have faith in your abilities! Without a humble but reasonable confidence in your own powers you cannot be successful or happy." [Norman Peale]
8. "What you get by achieving your goals is not as important as what you become by achieving your goals." [Henry Thoreau]
9. "My attitude is that if you push me towards something that you think is a weakness, then I will turn that perceived weakness into a strength." [Michael Jordan]
10. "Knowledge, like air, is vital to life. Like air, no one should be denied it." [Alan Moore]
11. "I maintained my edge by always being a student; you will always have something new to learn." [Jackie Kersee]