

SPORTS LITIGATION ALERT

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Legal Issues Surrounding the Potential Use of Ion Mobility Mass Spectrometry in Anti-Doping Cases

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On April 5, 2021, Christopher Chouinard, Ph.D. and his team presented their findings on the use of ion mobility-mass spectrometry (IM-MS) to the American Chemical Society (ACS). The findings were in the context of assisting Anti-Doping Organizations such as the World Anti-Doping Agency (WADA) in the detection of doping and identifying future “designer” compounds. The focus of the presentation, and research was on both detecting doping, and also identifying new illicit substances not yet known to WADA¹.

Chouinard’s team presented findings how IM-MS has successfully identified approximately half of the Prohibited Substances on the Prohibited List. The goal of this team is to develop methods for detecting new substances more effectively, and reducing the lag time in identifying new substances².

While the methodology surrounding IM-MS is not new, the application of the methodology by Chouinard’s team is new to anti-doping matters. Currently, there are not rules governing the use of IM-MS to detect Prohibited Substances³ or to identify new substances that should be considered for addition to the Prohibited List. Therefore, if a new substance were identified, there could be challenges including any potential sanction for an athlete. Generally, the WADA Code focuses on violations for an Athlete testing positive for a Prohibited Substance, or the use of a Prohibited Method⁴. Since a new substance would not be on the Prohibited List at the time of detection, the presence

of the substance in an Athlete’s sample would not constitute an adverse analytical finding⁵.

If IM-MS were to detect a substance in an Athlete’s urine sample that was not on the Prohibited List, further investigation to identify the sample would be warranted. The utilization of IM-MS may also provide guidance to a laboratory as to the structure of the newly identified compound. The additional testing would likely utilize other methods such as Liquid Chromatography Mass Spectrometry (LC/MS/MS) or Gas Chromatography Mass Spectrometry (GC/MS/MS) to confirm the presence of the new compound, and its structure. This confirmation testing would help determine whether the substance should be added to the Prohibited List. While there may not be a sanction for an adverse analytical finding if a “designer” compound is not on the Prohibited List, a sanction may still be sought against the Athlete under either the rules of the

5 As defined by the WADA Code: “A report from a WADA-accredited laboratory or other WADA-approved laboratory that, consistent with the International Standard for Laboratories, establishes in a Sample the presence of a Prohibited Substance or its Metabolites or Markers or evidence of the Use of A Prohibited Method.”

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1 <https://www.acs.org/content/acs/en/pressroom/newsreleases/2021/april/doping-by-athletes-could-become-tougher-to-hide-with-new-detection-method.html>

2 <https://www.acs.org/content/acs/en/pressroom/newsreleases/2021/april/doping-by-athletes-could-become-tougher-to-hide-with-new-detection-method.html>

3 As identified on the WADA Prohibited List

4 See the WADA Prohibited List 2021.

International Federation (IF) or National Governing Body (NGB), or, depending on the facts, under other sections of the WADA Code.

Through the application of IM-MS there may be a path to more easily identify potential new substances that should be added to the Prohibited List. This identification could then be more efficiently confirmed to reduce the time between detection and issuing sanctions for a new compound, as identified by Chouinard's team. Currently, the time between identifying new Prohibited Substances and sanctioning athletes can take several years. As the initial research indicates, with the use of IM-MS to assist in the identification of

new "designer" compounds, this timeframe could be significantly reduced.

Additionally, the use of IM-MS provides the labs and Anti-Doping Organizations with the ability to discover new potential doping compounds via urine analysis. This increases the opportunities available to the Anti-Doping Organizations to detect the compounds, as the Anti-Doping Organizations no longer would have to rely solely on intelligence based leads.

In developing rules for the potential application of IM-MS to anti-doping, there must be a balance between protecting the integrity of competition while also protecting the rights of Athletes. While there is a strong interest in protecting the integrity of competition, and detecting Athletes or Athlete Support Personnel⁶ who seek to gain a competitive advantage through doping, this interest cannot infringe on an Athlete's right to due process. All new rules and methods should be carefully considered and crafted to ensure procedural safeguards to the Athlete.

The author would like to thank Paul Scott for his help

⁶ As defined by the WADA Code "Any coach, trainer, manager, agent, team staff, official, medical, paramedical personnel, parent or any other Person working with, treating or assisting an Athlete in participating or preparing for Sports Competition.

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