

PROJECT REVIEW

“Production of a Certified Reference Material of Boldenone and Formestane to support GC-C-IRMS”

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The aim of this project is to produce certified reference materials (CRMs) to ensure the accuracy and traceability of measurements of the stable carbon isotope ratios of steroids used to confirm Adverse Analytical Findings (AAF) in sports doping analysis. These CRMs will be used for validation of GC-C-IRMS methods and confirmation of Adverse Analytical Findings in accordance with WADA Technical Document TD2016IRMS. The ability of WADA-accredited laboratories to comply with this document is reliant on the availability of reference materials of appropriate steroids certified with traceable values for ^{13}C isotope ratios. The availability of such materials is currently limited.

The proposed substances are boldenone, boldenone M1 and formestane. Certified values for the $\delta^{13}\text{C}$ values of each steroid and their associated measurement uncertainties will be determined by a combination of reference measurements with metrological traceability to VPDB made by NMIA using Elemental Analysis (EA-IRMS) and Gas Chromatography (GC-C-IRMS) Carbon Isotope Ratio Mass Spectrometry.