TD2016NA

Summary of Major Modifications

The Technical Document entitled "Harmonization of Analysis and Reporting of 19-Norsteroids Related to Nandrolone" has undergone a revision by *WADA*'s Laboratory Expert Group (LabEG).

The new version of the document, TD2016NA, includes the following main modifications:

1.0 Introduction

- It has been specified that the criteria established in this Technical Document shall be applied only to the Confirmation Procedure analyses of 19-norsteroids;
- In addition to nandrolone, two additional 19-norsteroid precursors of 19-NA are provided as examples: 19-norandrostenedione, 19-norandrostenediol.

2.0 Confirmation Procedure

2.1 Identification and Quantification

- The Confirmation Procedure method description and requirements have been further developed, with reference to the technical approach to follow for the quantification of 19-NA based on the results obtained during the Initial Testing Procedure;
- Enhanced details of the Quality Control (QC) samples to be used during IRMS analysis are provided;
- The details of the GC/MS analysis required to identify the 19-NA peak has been moved to footnote 1.

2.2 Additional Tests

- The description of the additional tests (i) norethisterone and pregnancy, (ii) demethylation and (iii) GC-C-IRMS has been divided into three (3) subparagraphs for further clarification;
- The monitoring of the 19-NA/19-NE ratio has been introduced as a criterion which may serve as an indicator of the formation of 19-NA as a result of

the *in-situ* 19-demethylation of androsterone (if 19-NA/19-NE < 3.0) or the administration of 19-norsteroids (if 19-NA/19-NE > 3.0);

- For GC-C-IRMS analysis, the requirement that the $\delta^{13}C$ value of 19-NA be less than -27‰ has been removed. This criterion is no longer discriminant due to the known occurrence of preparations of norsteroids with a carbon isotopic signature close to that of endogenous human urinary steroids *(e.g.* at -24‰), and for which the result of the GC-C-IRMS analysis may not readily indicate an exogenous origin;
- It has been clarified that a positive GC/C/IRMS analysis demonstrating an exogenous origin of 19-NA is sufficient evidence to report an Adverse Analytical Finding (AAF).

2.3 "B" Sample Confirmation Procedure

- It is now required, when the AAF for the "A" sample is based on the results of a GC/C/IRMS analysis, that the GC/C/IRMS analysis be repeated in the "B" sample Confirmation Procedure.

3.2 Decision Limit for 19-NA

- Clarification is provided on the calculation of the adjusted Decision Limit (DL) for samples with specific gravity (SG) greater than 1.020 (as determined by the Laboratory).

4.0 Reporting

This section has been further developed to reflect the main changes introduced in the analytical testing sections of the document.

- **4A.** When a test for pregnancy produces a positive result, no reference to the pregnancy status of the athlete shall be reported in any case (for ethical and privacy reasons);
- **4B.** When concentrations of 19-NA of less than 10 ng/mL are detected in samples from female athletes as a result of the use of norethisterone-containing contraceptives, and the sample is reported negative, no reference to the use of norethisterone shall be included in the reporting of the result.
- **4C.** Instructions are provided on the reporting of Atypical Findings (ATF) or Negative findings based on the estimated 19-NA/19-NE ratio, when the GC-C-IRMS analysis for 19-NA is inconclusive or inconsistent with an exogenous origin.
- **Footnote 5**: It has been clarified that when the 19-NA concentration is determined to be between the DL and 15 ng/mL, the confirmed concentration shall be expressed as the mean of triplicate determinations rounded down to one decimal place.

Also, it has been established that the Test Report shall include the value of the adjusted DL for samples with SG greater than 1.020.

The Flowchart in Annex A has been updated accordingly.