WADA Technical Letter – TL12

Document Number:	TL12	Version Number:	3.0
Written by: Reviewed by:	*WADA* Science *WADA* Laboratory Expert Group	Approved by:	*WADA* Executive Committee
Date:	21 December 2020	Effective Date:	1 January 2021

ENOBOSARM (OSTARINE)

1.0 Introduction

WADA wishes to draw the attention of the Laboratories to the structural similarities between **Aryl-propionamide based Selective Androgen Receptor Modulators** (SARMs; prohibited under section "S1.2 Other Anabolic Agents" of the *Prohibited List*) and their non-prohibited analogs, and the need to include appropriate target Analytes into the Analytical *Testing* Procedures to ensure the correct reporting of analytical findings for these *Prohibited Substances*.

Technical Letter TL07 (Andarine – Flutamide) addressed analytical findings for **O-dephenyl-andarine**, a *Metabolite* of **Andarine** which may also be present in a *Sample* as a *Metabolite* of the permitted anti-androgen **Flutamide** [1].

This TL12 pertains to the reporting of analytical results for another SARM, **Enobosarm** (also known as **Ostarine** or **S-22**).

Enobosarm is excreted in urine mainly as its glucuronide-conjugated phase-II *Metabolite* or in minor extent as the unmodified parent compound, whereas the abundance of the O-dephenyl-ostarine *Metabolite* is very low when compared to the parent drug [2]. Furthermore, since O-dephenyl-ostarine could also be present in urine *Samples* as a contaminant/impurity and/or minor *Metabolite* of the permitted drug **Bicalutamide**, this *Metabolite* shall not be considered as the sole criterion for the reporting of an *Adverse Analytical Finding (AAF)* for enobosarm.

[Comment: Bicalutamide is a permitted, non-steroidal anti-androgenic medication of very similar chemical structure to ostarine (Figure 1), which is primarily used to treat prostate cancer. Enobosarm is not a Metabolite of bicalutamide.]

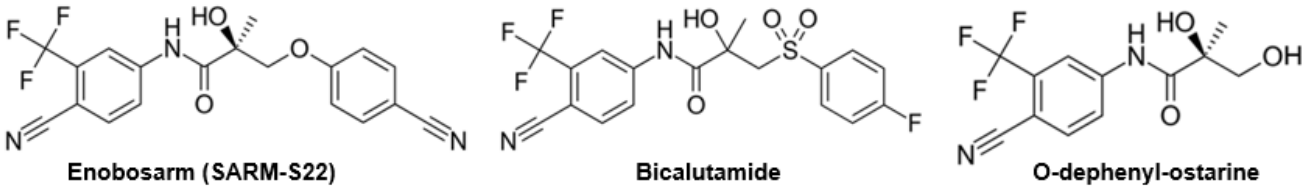

Figure 1: Chemical structures of enobosarm, bicalutamide and O-dephenyl-ostarine.

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2.0 Analysis and Reporting Requirements

Before reporting a result as an *AAF* for enobosarm, Laboratories shall evaluate whether the finding is the result of the presence of a contaminant/impurity and/or the permitted administration of bicalutamide:

1. Report the result as an *AAF* for enobosarm only when the presence of enobosarm (parent compound), and/or its glucuronic acid conjugate are confirmed in the *Sample* (regardless of the presence of bicalutamide and/or its *Metabolite*s);

   [Comment: Laboratories shall not report an AAF for enobosarm based only on the presence of O-dephenyl-ostarine.]

3.0 References

[1] *WADA* Technical Letter: TL07: Andarine-Flutamide.

[2] Thevis, Mario, *et al*. Mass spectrometric characterization of urinary metabolites of the selective androgen receptor modulator S-22 to identify potential targets for routine doping controls." *Rapid Communications in Mass Spectrometry* **25**(15): 2187, 2011.

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