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WADA Technical Letter – TL11

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OXYMORPHONE

1.0 Introduction

WADA wishes to draw the attention of the Laboratories to the possible detection of the *Prohibited Substance* **Oxymorphone** in urine *Samples* due to the decomposition of the permitted drug **Methylnaltrexone** (MTNX), a peripherally acting μ-opioid antagonist that reverses some of the side effects of opioid drugs without affecting analgesia.

Oxymorphone may be formed *in situ* as a degradation artifact of MTNX after thermolysis in the Gas Chromatograph (GC) inlet or as a side reaction of the per-TMS (trimethylsilyl) derivatization under GC-Mass Spectrometry (GC-MS) analysis conditions [1]. The procedures based on the detection of oxymorphone and its *Metabolites* by Liquid Chromatograph-Mass Spectrometry (LC-MS) are not affected, as MTNX degradation is not observed under electrospray conditions.

2.0 Reporting Requirements

Therefore, whenever a Laboratory confirms oxymorphone in a urine *Sample* by GC-MS, prior to reporting the result as an *Adverse Analytical Finding* (*AAF*), the Laboratory shall evaluate whether the finding is the result of the permitted administration of MTNX.

- Confirm the absence of MTNX by analyzing the *Sample* by LC-MS;

  *[Comment: The Laboratory may also consider testing for the presence of **Noroxymorphone** (a minor but expected Metabolite of oxymorphone) during the Confirmation Procedure (CP).]*

- Report the result as an *AAF* for oxymorphone when MTNX is not detected in the *Sample* after being analyzed by LC-MS;

- Report the result as a Negative Finding if MTNX is present in the *Sample*, and an alternative CP by LC-MS analysis for oxymorphone cannot be performed.

3.0 References

[1] Sobolevsky T., Kucherova Y., and Ahrens B. Identification of oxymorphone as decomposition product of the permitted drug methylnaltrexone. *Drug Test Anal.* **10**(5): 892-895, **2018**.