

**CON-THE-071**

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## **CONFIRMATORY METHODS**

### **Hot Topic on Nandrolone**

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#### **• Context**

All EU members are required to monitor for abuse of steroid hormones through their National Residue Control Plan. Most testing schemes include Nandrolone (19-Nortestosterone, NT) because it has previously been detected in a number of countries and for example, the presence of 17 $\beta$ -NT has been confirmed in preparations or on syringes recovered during enforcement actions. The administration to food producing animals of this anabolic steroid is prohibited within the European Union. The major metabolite of 17 $\beta$ -NT is its epimer 17 $\alpha$ -NT. Although it is well known that 17 $\alpha$ -NT can occur naturally in the urine of female cattle and that 17 $\beta$ -NT can occur naturally in the urine of boars and stallions, it has generally been accepted up to now that neither compound occurs naturally in the urine of steers or bulls.

#### **• General objective(s)**

This module gives an overview of the Nandrolone issue. It particularly focuses on the very recent findings on 17 $\alpha$ -NT or 17 $\beta$ -NT in the urine of male cattle which can no longer be exclusively ascribed to abuse of nortestosterone. It deals with the related difficulties for EU member-states who currently rely on measurements of 17 $\alpha$ -NT and 17 $\beta$ -NT to monitor and control the abuse of this perennially popular drug, and proposes some possible alternative solutions.

#### **• Main items**

✓ Androgen steroids / Nandrolone / Metabolites / Food producing animals.

#### **• Pedagogical objectives**

- ✓ Understand natural hormone issue
- ✓ Know the main metabolism transformation reaction affecting steroids
- ✓ Learn how metabolism studies are conducted in laboratories

#### **• Pedagogical tools**

✓ Slide show

#### **• Duration**

✓ 45 min

#### **• Pre-requisite**

- ✓ General biology and biochemistry
- ✓ Chemical structure (understanding)
- ✓ Mass spectrometry (CON-THE-010, CON-THE-020 and CON-THE-030)