STATUS DECISION OF CONTROLLED AND NON-CONTROLLED SUBSTANCE(S)

Substance: 8α, 13α, 14β-Estra-4,9-diene-3,17-dione

Based on the current information available to the Office of Controlled Substances, it appears that the above substance is:

- Controlled  X
- Not Controlled  ☐

under the schedules of the Controlled Drugs and Substances Act (CDSA) for the following reason(s):

- The substance is an isomer of estra-4,9-diene-3,17-dione and included under item 23 of Schedule IV to the CDSA.

Prepared by: _____________________________ Date: 29th March 2012
Evelyn Soo

Verified by: _____________________________ Date: ____________
Mark Kozlowski

Approved by: _____________________________ Date: ____________
DIRECTOR, OFFICE OF CONTROLLED SUBSTANCES

This status was requested by: “third party information removed as per agreement with applicant”
Drug Status Report

**Drug:** 8alpha, 13alpha, 14beta-Estra-4,9-diene-3,17-dione

**Drug Name Status:** 8alpha, 13alpha, 14beta-Estra-4,9-diene-3,17-dione is the common name.

**Chemical Name:** 19-Norandrosta-4,9-diene-3,17-dione

**Chemical structure:**

![Chemical structure diagram]

**Molecular Formula:** C_{18}H_{20}O_2

**Pharmacological class / Application:** Anabolic steroid

**CAS-RN:** 33383-90-3

**International status:**

US: 8alpha, 13alpha, 14beta-Estra-4,9-diene-3,17-dione is not listed in the Schedules to the US Controlled Substances Act (CSA) and is not mentioned anywhere on the DEA website. However, the racemate, estra-4,9-diene-3,17-dione was recently added to Schedule III to the CSA and the stereochemistry was not specified in the listing\(^1\), it is likely to include both enantiomeric forms.

United Nations: The substance is not listed on the Yellow List - List of Narcotic Drugs under International Control, the Green List - List of Psychotropic Substances under International Control, nor the Red List - List of Precursors and Chemicals Frequently Used in the Illicit Manufacture of Narcotic Drugs and Psychotropic Substances under International Control. However, ergometrine is listed in Table 1 of the Red List and according to the Convention, “all isomeric forms” of a substance listed in the Tables to the Red List are considered included.

Canadian Status: 8alpha, 13alpha, 14beta-Estra-4,9-diene-3,17-dione is not listed specifically in the Schedules to the CDSA. The substance is one of the enantiomeric forms of the anabolic steroid estra-4,9-diene-3,17-dione and can be directly isolated as the pure enantiomer from the racemate by microbial methods\(^2\). Anabolic steroids and their derivatives are currently controlled under item 23 of Schedule IV to the CDSA. While there are no reports in the scientific literature that looks specifically at the anabolic effects of this pure enantiomer, the racemate is the natural form of this steroid which in turn has been shown to display anabolic activity\(^3\). In addition, the single enantiomer can be derived directly from the racemate.

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Accordingly, 8alpha, 13alpha, 14beta-estra-4,9-diene-3,17-dione must be included under item 23 of Schedule IV to the CDSA.

**Recommendation:** 8alpha, 13alpha, 14beta-Estra-4,9-diene-3,17-dione is included under item 23 of Schedule IV to the CDSA and is a controlled substance.

**Date:** March 29th, 2012.