Health Canada Santé Canada

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

Substance: Apomorphine sulfate and Apomorphine glucuronide

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

Controlled	✓
Not Controlled	☐

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

- The substances are derivatives of apomorphine and considered to be included under item 1 of Schedule I to the CDSA.

Prepared by: _____ Date: Sept 23th 2010
Evelyn Soo

Verified by: _____ Date: _____
Marianne Tang

Approved by: _____ Date: _____
DIRECTOR, OFFICE OF CONTROLLED SUBSTANCES

This status was requested by: Nacer Silarbi

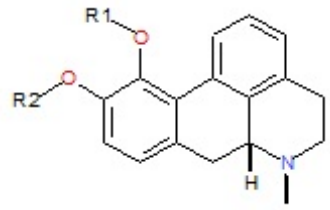
Drug Status Report

Drug: I - Apomorphine sulfate
II - Apomorphine glucuronide

Drug Name Status: I - Apomorphine sulfate
II - Apomorphine glucuronide are the common names

Chemical Name:
I - 5,6,6a,7-tetrahydro-6-methyl-4H-dibenzo[de,g]quinoline-10,11-diol, 10;11-sulfate
II - 5,6,6a,7-tetrahydro-6-methyl-4H-dibenzo[de,g]quinoline-10,11-diol, 10;11-glucuronic acid

Chemical structure:



I - R_1=H and R_2=$SO3^-$ or R_1=$SO3^-$ and R_2=H

II - R_1=H and R_2=$C_6H_{10}O_7^-$ or R_1=$C_6H_{10}O_7^-$ and R_2=H

Molecular Formula: I - $C_{17}H_{16}NO_5S$ II-$C_{23}H_{25}NO_8$

Pharmacological class / Application: Pharmaceutical-related substances

CAS-RN: NONE

International status:

US: The substances are not listed specifically in the Controlled Substances Act and are not mentioned anywhere on the DEA website.

United Nations: The substances are not listed on the Yellow List - List of Narcotic Drugs under International Control nor the Green List - List of Psychotropic Substances under International Control.

Canadian Status: Apomorphine sulfate and apomorphine glucuronides are metabolites of apomorphine[1]. As shown in the figure above, the sulfation and glucuronidation can occur at either the C10 or C11 position, resulting in two forms of each of the metabolites. Apomorphine is currently excluded from item 1 of Schedule I under the CDSA and listed as sub-item 32 under the "but not including" heading. However, as derivatives of apomorhine, these substances are

[1]Van Der Geest, R et al. (1997) Assay of R-apomorphine, S-apomorphine, apocodeine, isoapocodeine and their glucuronide and sulfate conjugates in plasma and urine of patients with Parkinson's disease, J. Chromatogr. B. **702**:131-141.

not excluded from item 1 of Schedule I to the CDSA. It is noteworthy that derivatives of other substances that fall under the "but not including" heading of item 1 of Schedule I to the CDSA, for example, naloxone, are also considered controlled substances.

Recommendation: Apomorphine sulfate and apomorphine glucuronide are included under item 1 of Schedule I to the CDSA and are controlled substances.

Date: 23 September 2010