

Drug Status Report

Drug: 17-substituted 4,5 alpha-epoxy-3-methoxy-morphinan-6-one

A client needed status decisions on several hydrocodone analogues.

Drug Name Status: All of the names below are chemical names.

Chemical Name: I- 4,5 alpha-epoxy-3-methoxy-17-ethanol-morphinan-6-one

II- 4,5 alpha-epoxy-3-methoxy-17-butanoyl-morphinan-6-one

III- 4,5 alpha-epoxy-3-methoxy-17-(2'-methyl) propanoyl-morphinan-6-one

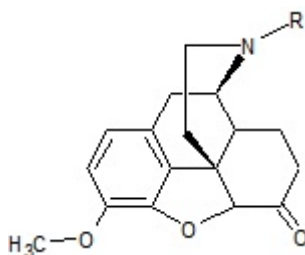
IV- 4,5 alpha-epoxy-3-methoxy-17-decanoyl-morphinan-6-one

V- 4,5 alpha-epoxy-3-methoxy-17-dodecanoyl-morphinan-6-one

VI- 4,5 alpha-epoxy-3-methoxy-17-propanoyl-morphinan-6-one

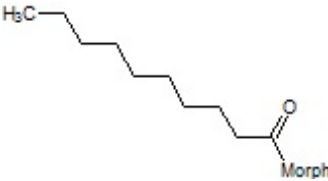
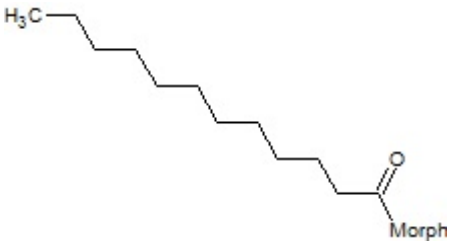
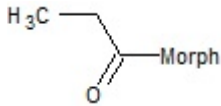
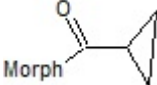
VII- 4,5 alpha-epoxy-3-methoxy-17-cyclopropylmethanoyl-morphinan-6-one

Chemical structure:



where

Substance	R=
I	
II	
III	

IV	
V	
VI	
VII	
Hydrocodone	$\text{H}_3\text{C}-\text{Morph}$

where Morph is the point of attachment to the morphinan nucleus.

Pharmacological class / Application: hydrocodone analogues

International status:

US: The Controlled Substances Act is broad in its specification of opiates: “The term "opiate" means any drug or other substance having an addiction-forming or addiction-sustaining liability similar to morphine or being capable of conversion into a drug having such addiction-forming or addiction-sustaining liability.” The “capable of conversion” could be interpreted to include hundreds of chemical substances. The subject substances may be considered to be included in the CSA; confirmation of the status of the substance in the US would need to be obtained from the DEA.

United Nations: The substances are not listed on the Yellow List - List of Narcotic Drugs under International Control. The drug is not listed on the Green List - List of Psychotropic Substances under International Control.

Canadian Status: Item 1 of Schedule I to the CDSA is “Opium Poppy (*Papaver somniferum*), its preparations, derivatives, alkaloids and salts, including:

- (1) Opium
- (2) Codeine (methylnorphine)
- (3) Morphine (7,8-didehydro-4,5-epoxy-17-methylmorphinan-3,6-diol)
- (4) Thebaine (paramorphine)

and the salts, derivatives and salts of derivatives of the substances set out in subitems (1) to (4), including:”

There then follows a list of 27 substances to illustrate the types of substances included in the item of the schedule. This list has been interpreted to include as well the salts, derivatives and salts of derivatives of the substances.

Structurally, the first three substances listed in item 1 of Schedule I all contain the 4,5-epoxy-17-methylmorphinan nucleus. All of the other 27 listed specifically on Item 1 also contain the 4,5-epoxy-17-methylmorphinan nucleus.

Hydrocodone is subitem 1(15) of Schedule I.

Item 1 of Schedule I has been interpreted to include a broad range of chemicals similar to the three main opium alkaloids: codeine, morphine and thebaine. In recent years, several substances similar to the title substance have been declared to be controlled substances. These include 14-hydroxycodone, codeine N-oxide and isocodeine. See the list of administrative List of Controlled Substances.

Considering the close structural similarity of the 17-substituted 4,5 alpha-epoxy-3-methoxy-morphinan-6-one substances I to VII, all must be considered to be included in item 1 of Schedule I.

Recommendation: The 17-substituted 4,5 alpha-epoxy-3-methoxy-morphinan-6-one substances I to VII are included in item 1 of Schedule I to the CDSA and are controlled substances

July 15, 2007