

Drug Status Report

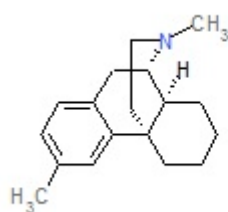
Drug: Dimemorfan

Drug Name Status: Dimemorfan is the INN.

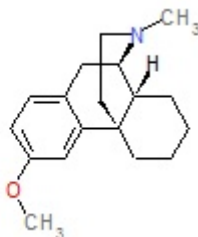
Chemical Name: (9 α ,13 α ,14 α)-3,17-Dimethylmorphinan

Other Names: *d*-3-methyl-*N*-methylmorphinan; (+)-3,17-Dimethylmorphinan

Chemical structure:



Dimemorfan



Dextromethorphan

Molecular Formula: C₁₈H₂₅N

Pharmacological class / Application: Antitussive

International status:

US: The substance is not listed on the schedules to the CSA and is not mentioned on the DEA website.

United Nations: The substance is 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: Dimemorfan is not listed under any Schedules to the CDSA and has mainly been used as an antitussive, although the drug has also been reported to display neuroprotective properties and hence has potential application in the treatment of brain diseases such as epilepsy, Alzheimer or Parkinson's disease¹. Dimemorfan is considered to be non-narcotic derivative of morphinan and an analogue of dextromethorphan². Dimemorfan displays potent anticonvulsant activity similar to dextromethorphan. However, in contrast to dextromethorphan, the drug is not metabolized to the phencyclidine compound (PCP), dextrorphan, and has very low affinity for

¹H Ida (1997) The nonnarcotic antitussive drug dimemorfan: A review, Clin. Therapeu. **19**:215-231.

²JY Kim et al. (2008) Concise synthesis of dimemorfan (DF) starting from 3-hydroxymorphinan (3-HM), Chem. Pharm. Bull. **56**:985-987.

the PCP binding sites. In addition, the drug has not been reported to display conditioned place preference or increase circling behaviour in mice³.

Dextromethorphan is excluded from Item 10 of Schedule I “Morphinans, their salts, derivatives and salts of derivatives including”. Considering that dimemorfan is a non-narcotic analogue of dextromethorphan and is not metabolized to dextrorphan it is should be excluded from Item 10 of Schedule I to the CDSA.

Recommendation:

Dimemorfan is not included in the schedules to the CDSA and is not considered a controlled substance.

December 11th, 2009.

³E-J Shin et al. (2005) The dextromethorphan analog dimemorfan attenuates kainate-induced seizures via s1-receptor activation: comparison with the effects of dextromethorphan. Br. J. Pharmacol. **144**:908-918.