



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

Substance: Indirubin

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 substance is found in Qing Dai (*Indigo naturalis*) and used in traditional Chinese medicine for the treatment of chronic myelocytic leukemia. Indirubin is not similar to any of the substances in the CDSA.

Prepared by: \_\_\_\_\_ Date: October 13th 2010  
Evelyn C Soo

Verified by: \_\_\_\_\_ Date: \_\_\_\_\_  
Marianne Tang

Approved by: \_\_\_\_\_ Date: \_\_\_\_\_  
DIRECTOR, OFFICE OF CONTROLLED SUBSTANCES

**This status was requested by:** Inspectorate

## Drug Status Report

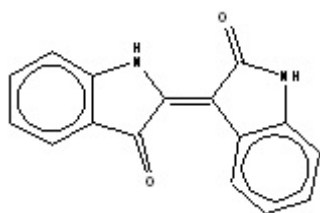
**Drug:** Indirubin

**Drug Name Status:** Indirubin is the common name.

**Chemical Name:** (delta(sup 2,3')-Biindoline)-2',3-dione

**Other Names** (delta2,3'-Biindoline)-2',3-dione (8CI);  
3-(1,3-dihydro-3-oxo-2H-indol-2-ylidene); 1,3-dihydro-2H-Indol-2-one (9CI); Courouptine B;  
Indigo Red; Indigopurpurin

**Chemical Structure:**



**Molecular Formula:** C<sub>16</sub>H<sub>10</sub>N<sub>2</sub>O<sub>2</sub>

**CAS-RN:** 479-41-4

**Pharmacological class / Application:** Anti-angiogenic agent

**International status:**

US: The substance is not listed specifically in the CSA and is not mentioned anywhere on the DEA website.

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.

Canadian Status: Indirubin is not listed specifically in the CDSA. The substance is found in Qing Dai (*Indigo naturalis*) and used in traditional Chinese medicine for the treatment of chronic myelocytic leukemia<sup>1</sup>. The substance also has been reported in recent scientific

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<sup>1</sup>Wang, TC. et al. (2010) Design, synthesis and anti-proliferative studies of a novel series of indirubin derivatives, Chinese Chem. Lett., *in press*.

literature to display anti-angiogenic<sup>2</sup> activity. Indirubin is not structurally similar to any of those listed in the Schedules CDSA.

**Recommendation:** Indirubin is not included in the Schedules to the CDSA and is not a controlled substance.

**Date:** October 13<sup>th</sup> 2010

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<sup>2</sup>Alex, D. et al. (2010) Indirubin shows anti-angiogenic activity in an in vivo zebrafish model and an in vitro HUVEC model, *J. Ethnopharmacol.* **131**:242-247.