

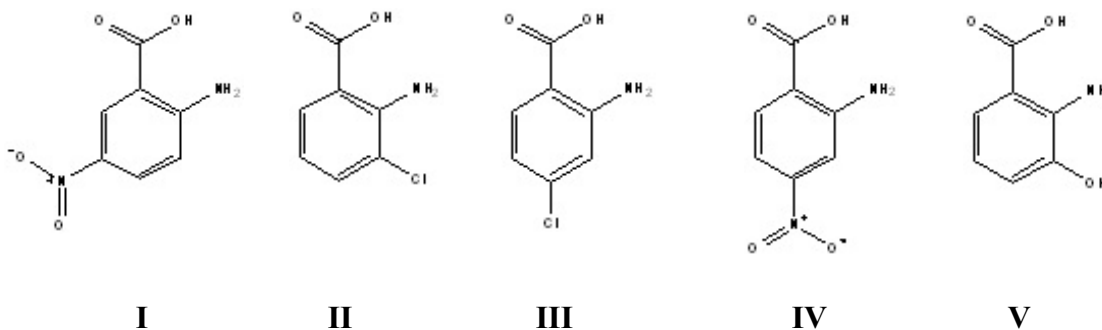
## Drug Status Report

**Drug:** **I** - 5-Nitroanthranilic acid  
**II** - 3-Chloroanthranilic acid  
**III** - 4-Chloroanthranilic acid  
**IV** - 4-Nitroanthranilic acid  
**V** - 3-Hydroxyanthranilic acid

**Drug Name Status:** **I** - 5-Nitroanthranilic acid  
**II** - 3-Chloroanthranilic acid  
**III** - 4-Chloroanthranilic acid  
**IV** - 4-Nitroanthranilic acid  
**V** - 3-Hydroxyanthranilic acid are the common names.

**Chemical Name:** **I** - 2-Amino-5-nitrobenzoic acid  
**II** - 2-Amino-3-chlorobenzoic acid  
**III** - 2-Amino-4-chlorobenzoic acid  
**IV** - 2-Amino-4-nitrobenzoic acid  
**V** - 2-Amino-3-hydroxybenzoic acid

### Chemical structure:



**Molecular Formula:** **I** - C<sub>7</sub>H<sub>6</sub>N<sub>2</sub>O<sub>4</sub>; **II** - C<sub>7</sub>H<sub>6</sub>ClNO<sub>2</sub>; **III** - C<sub>7</sub>H<sub>6</sub>ClNO<sub>2</sub>; **IV** - C<sub>7</sub>H<sub>6</sub>N<sub>2</sub>O<sub>4</sub>;  
**V** - C<sub>7</sub>H<sub>7</sub>NO<sub>3</sub>

**CAS-RN:** **I** - 616-79-5; **II** - 6388-47-2; **III** - 89-77-0; **IV** - 619-17-0; **V** - 548-93-6

**Pharmacological class / Application:** Anthranilic acids

### International status:

US: The substance are not currently listed on the schedules to the US Controlled Substances Act and are not mentioned on the DEA website.

United Nations: The substances are 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: The above-named substances belong to a class of compounds known as the anthranilic acids and have a range of applications including their use as intermediates in the synthesis of pharmaceuticals and dyes<sup>1-4</sup>. 3-hydroxyanthranilic acid is also a metabolite of tryptophan and has been shown to inhibit T-cell proliferation and also a potential carcinogen<sup>5,6</sup>.

The substances are not listed in any of the Schedules to the CDSA. "Anthranilic acid and its salts" are listed as item 3 in Part 1 of Schedule VI to the CDSA and is considered to be a Class A Precursor. However, since 5-nitroanthranilic acid, 3-chloroanthranilic acid, 4-chloroanthranilic acid, 4-nitroanthranilic acid and 3-hydroxyanthranilic acid are not salts of anthranilic acid, the substances cannot be included under item 3 of Part 1 of Schedule VI to the CDSA.

Recommendation: 5-nitroanthranilic acid, 3-chloroanthranilic acid, 4-chloroanthranilic acid, 4-nitroanthranilic acid and 3-hydroxyanthranilic acid are not included in the schedules CDSA and are not controlled substances.

July 9<sup>th</sup>, 2010.

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<sup>1</sup>Qu, Y and Spain, JC. (2010) Biodegradation of 5-nitroanthranilic acid by Bradyrhizobium sp. Strain JS329, Applied Enviro. Microbiol. **76**:1417-1422.

<sup>2</sup>Papenfuhs, T and Rapp, J. (1993) Process for the preparation of 2-amino-3-chlorobenzoic acid, US Patent 5233083.

<sup>3</sup>Chung, YJ. *et al.* (1998) An efficient synthesis of 3-substituted quinazolones, Bull. Korean Chem. Soc. **19**:1117-1119.

<sup>4</sup>Thomas, LW. *et al.* (1978) Bioassay of 4-nitroanthranilic acid for possible carcinogenicity, DHEW Publication No 78-1364.

<sup>5</sup>Terness, P. *et al.* (2002) Inhibition of allogenic T cell proliferation by indoleamine 2,3-dioxygenase expressing dendritic cells: Mediation of suppression by tryptophan metabolites, J. Exp. Med. **196**:447-457.

<sup>6</sup>Umeda, M. *et al.* (1989) Promotional effect of lithocholic acid and 3-hydroxyanthranilic acid on transformation of X-ray-initiated BALB/3T3 Cells, Carcinogenicity, **10**:1665-1668.