Health Canada Santé Canada

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

Substance: Arimedex HD

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 product does not contain substances similar to any of those listed in the CDSA.

Prepared by: _____ Date: Aug 27th 2010
Evelyn Soo

Verified by: _____ Date: _____
Marianne Tang

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

This status was requested by: Hilary Taylor for compliance purposes.

Drug Status Report

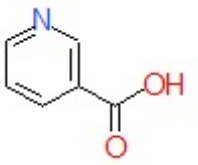
Drug: Arimedex HD

Drug Name Status: Arimedex HD is the brand name.

Canadian Status: Arimedex is a nutritional supplement that is marketed as an aromatase inhibitor and testosterone boosting agent for body building purposes. The product is sold over the internet and can be found at: http://www.muscleandstrength.com/store/arimedex-hd.html#product-description. The product is claimed to contain the following ingredients:

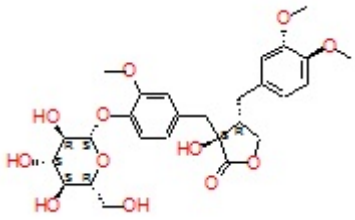
- Niacin
- (3S,4S)-4-[(3,4-dimethoxyphenyl)methyl]-3-hydroxy-3-[[3-methoxy-4-[(2R,3R,4S,5R,6R)-3,4,5-trihydroxy-6-(hydroxymethyl)oxan-2-yl]oxy-phenyl]methyl]oxolan-2-one
- (2R,3S)-2,3-bis[(4-hydroxy-3-methoxyphenyl)methyl]butane-1,4,-diol
- (2R,3R,4S,5S,6R)-6-(hydroxymethyl)oxane-2,3,4,5-tetrol
- (S)-5-hydroxy-1-(4-hydroxy-3-methoxyphenyl)-3-decanone
- 4-[(E)-2-(3,5-dimethoxyphenyl)ethenyl]phenol
- Phenethyl(E)-3-(3,4-dihydroxyphenol)prop-2-enoate

Niacin is a naturally-occurring water-soluble vitamin of the B complex.



Chemical Name: 3-Pyridinecarboxylic acid
Synonyms: Nicotinic acid
CAS-RN: 59-67-6
Molecular Formula: $C_6H_5NO_2$

(3S,4S)-4-[(3,4-dimethoxyphenyl)methyl]-3-hydroxy-3-[[3-methoxy-4-[(2R,3R,4S,5R,6R)-3,4,5-trihydroxy-6-(hydroxymethyl)oxan-2-yl]oxy-phenyl]methyl]oxolan-2-one is more commonly known as tracheloside and is a lignan isolated from the seeds of *Carthamus tinctorius* and has been shown to exhibit anti-estrogenic activity[1].



Common Name: Tracheloside
Chemical Name: 2(3S-cis)-(3H)-Furanone, 4-((3,4-dimethoxyphenyl)methyl)-3-((4-(beta-D-glucopyranosyloxy)-methoxyphenyl)methyl)dihydro-3-hydroxy-
CAS-RN: 33464-71-0
Molecular Formula: $C_{27}H_{34}NO_{12}$

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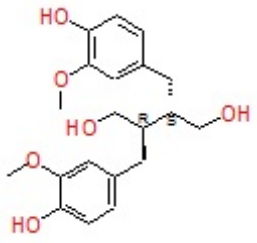
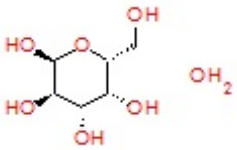
[1]Yoo, HH *et a*l. (2006) An anti-estrogenic lignan glycoside, tracheloside, from seeds of Carthamus tinctorius, Biosci. Biotechnol. Biochem. **70**:2783-2785.

(2R,3S)-2,3-bis[(4-hydroxy-3-methoxyphenyl)methyl]butane-1,4,-diol is more commonly known as secoisolariciresinol and is a lignan found in soft and hard woods[2] as well as in flax seeds[3] and is believed to display antioxidant activities.



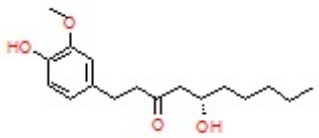
Common Name: (+)-Secoisolariciresinol
Chemical Name: (2R,3S)-2,3-bis[(4-hydroxy-3-methoxyphenyl)methyl]butane-1,4,-diol
CAS-RN: none; for (-)-isomer, 29388-59-8
Molecular Formula: $C_{20}H_{26}O_6$

(2R,3R,4S,5S,6R)-6-(hydroxymethyl)oxane-2,3,4,5-tetrol is more commonly known as dextrose, a common form of sugar used in the food industry.



Common Name: Dextrose
Chemical Name:(2R,3R,4S,5S,6R)-6-(hydroxymethyl)oxane-2,3,4,5-tetrol
Synonyms: alpha-D-Glucopyranose, hydrate (1:1)
CAS-RN: 14431-43-7
Molecular Formula: $C_{20}H_{26}O_6$

(S)-5-hydroxy-1-(4-hydroxy-3-methoxyphenyl)-3-decanone is more commonly known as Gingerol is a naturally-occurring plant phenol obtained from ginger and has been reported to display antioxidant activity[4].



Common Name: Gingerol
Chemical Name: (S)-5-hydroxy-1-(4-hydroxy-3-methoxyphenyl)-3-decanone
Synonyms: (6)-Gingerol; (S)-(6)-Gingerol
CAS-RN: 23513-14-6
Molecular Formula: $C_{17}H_{26}O_4$

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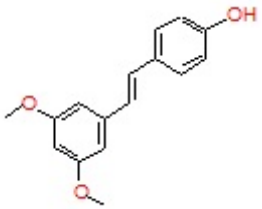
[2]Umezawa, T et al. (1991) Formation of Lignans (-)-secoisolariciresinol and (-)-matairesinol with *Forsythia intermedia* cell-free extracts, J. Biol.Chem. **266**:10210-10217.

[3]Johnsson P, et al. (2000) HPLC method for the analysis of secoisolariciresinol diglucoside in flaxseeds, J. Agri. Food Chem. **48**:5216-5219.

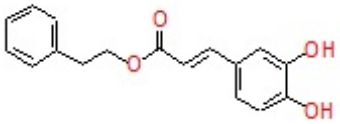
[4]Wang, CC. et al. (2003) Effects of 6-gingerol, an antioxidant from ginger, on inducing apoptosis in human leukemic HL-60 cells, In vivo, **17**:641-645.

4-[(E)-2-(3,5-dimethoxyphenyl)ethenyl]phenol is more commonly known as pterostilbene and is an active constituent of blueberries that has been shown to display anti-cancer activity[5]



Common Name: Pterostilbene
ChemicalName:4-(2-(3,5-Dimethoxyphenyl)ethenyl)phenol
Synonyms: 3',5'-Dimethoxy-4-stilbenol; 3,5-Dimethoxy-4'-hydroxy-trans-stilbene
CAS-RN: 537-42-8
Molecular Formula: $C_{16}H_{16}O_3$

Phenethyl(E)-3-(3,4-dihydroxyphenol)prop-2-enoate is also known as caffeic acid phenethyl ester and is an active component of proplis from honeybee hives and has been shown to display anti-cancer, anti-inflammatory and immunomodulatory properties[6].



Common Name: Caffeic acid phenethyl ester
Chemical Name: 2-phenylethyl
-(3,4-dihydroxyphenyl)-2-propenoate
Synonyms: Phenethyl caffeate; Capee
CAS-RN: 104594-70-9
Molecular Formula: $C_{17}H_{16}O_4$

None of the substances listed are listed in the CDSA or similar to any of the substances included in the Schedules to the CDSA.

Recommendation: Arimedex HD is not included in the Schedules to the CDSA and is not a controlled substance.

Date: 27 August 2010

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[5]Suh, N. Et al. (2007) Pterostilbene, an active constituent of blueberries, suppresses aberrant crypt foci formation in the azoxymethane-induced colon carcinogenesis model in rats, Clin. Cancer Res. **13**:350-365.

[6]Natarajan, K et al. (1996) Caffeic acid phenethyl ester is a potent and specific inhibitor of activation of nuclear transcription factor NF-kappa B, Proc. Natl. Acad. Sci. **93**:9090-9095.