

## Report on New Patented Drugs - Sativex

Under its transparency initiative, the PMPRB publishes the results of the reviews of new patented drugs by Board Staff, for purposes of applying the PMPRB's *Excessive Price Guidelines* (Guidelines) for all new active substances introduced in Canada after January 1, 2002.

**Brand Name:** Sativex  
**Generic Name:** (*delta-9-tetrahydrocannabinol & cannabidiol*)  
**DIN:** 02266121 52 mg/mL (27 mg/mL & 25 mg/mL)  
**Patentee:** Bayer Inc.

### Indication - as per product monograph:

May be useful as adjunctive treatment for the symptomatic relief of neuropathic pain in multiple sclerosis (MS) in adults.

**Date of Issuance of First(s) Patent Pertaining to the Medicine:** April 25, 2006

**Notice of Compliance:** April 15, 2005

**Date of First Sale:** June 22, 2005

In most cases, patents are issued before the drug comes to market. In this case, the first patent pertaining to Sativex was issued on April 25, 2006 and it came under the PMPRB's jurisdiction at that time.

**ATC Class:** N07DA  
Nervous System; Other Nervous System Drugs

## APPLICATION OF THE GUIDELINES

### Summary

The introductory price of Sativex was found to be within the Guidelines because the cost of therapy did not exceed the cost of therapy of existing drugs in the therapeutic class comparison. Sativex was not sold in any of the other comparator countries.

## Scientific Review

Sativex is a new active substance and the PMPRB's Human Drug Advisory Panel (HDAP) recommended that Sativex be classified as a category 3 new medicine (provides moderate, little or therapeutic advantage over comparable medicines).

The Therapeutic Class Comparison (TCC) test of the Guidelines provides that the price of a category 3 new drug product cannot exceed the prices of other drugs that treat the same disease or condition. Comparators are generally selected from among existing drug products in the same 4<sup>th</sup> level of the Anatomical Therapeutic Chemical (ATC) System that are clinically equivalent in addressing the approved indication. See the PMPRB's *Compendium of Guidelines, Policies and Procedures* for a more complete description of the selection of the Guidelines and the policies on TCCs.

The HDAP identified Cesamet (*nabilone*) and Marinol (*dronabinol*) as the most appropriate comparators for Sativex. These agents are utilized for the symptomatic relief of neuropathic pain in MS patients and are clinically equivalent in addressing the approved indication of Sativex.

The Guidelines provide that the dosage recommended for comparison purposes will normally not be higher than the maximum of the usual recommended dosage. The recommended comparable dosage regimens for Sativex and the comparators are based on the respective product monographs and supported by clinical literature.

## Price Review

Under the Guidelines, the introductory price of a new category 3 drug product will be presumed to be excessive if it exceeds the price of all of the comparable drug products in the TCC test, or if the price in Canada exceeds the range of prices of the same medicine sold in the countries listed in the *Patented Medicines Regulations* (Regulations).

The introductory price of Sativex was within the Guidelines as the weekly cost per treatment did not exceed the weekly cost per treatment with the comparator medicines.

### Introductory Period (July to December 2005)

Name	Strength	Dosage Regimen	Unit Price	Cost per Week
Sativex	52 mg/mL	1.5 mL	\$22.7182 <sup>1</sup>	\$34.0773
Cesamet	1 mg capsule	10 capsules	\$6.2052 <sup>1</sup>	\$62.0520
Marinol	5 mg capsule	5 capsules	\$3.8200 <sup>2</sup>	\$19.1000
Marinol	5 mg capsule	1 capsule	\$3.8200 <sup>2</sup>	\$3.8200
+	+	+	+	+
Marinol	10 mg capsule	2 capsules	\$7.6400 <sup>3</sup>	\$15.2800
				\$19.1000

**Sources:**

(1) Publicly available price as per the *Patented Medicines Regulations*

(2) Ontario Drug Benefit Formulary, August 2006

(3) Liste de médicament d'exception, Régie de l'assurance maladie du Québec, Octobre 2005

Sativex was not sold in any of the seven countries listed in the Regulations at the time of its introduction on the Canadian market in 2005. In compliance with the Guidelines, at such time as it may be sold in any of the seven countries listed in the Regulations, the price in Canada cannot exceed the range of prices in those countries.

*Where comparators and dosage regimens are referred to in the Summary Reports, they have been selected by the PMPRB Staff and the HDAP for the purpose of carrying out the PMPRB's regulatory mandate, which is to review the prices of patented medicines sold in Canada to ensure that such prices are not excessive. The publication of these reports is also part of the PMPRB's commitment to make its price review process more transparent.*

*The information contained in the PMPRB's Summary Reports should not be relied upon for any purpose other than its stated purpose and is not to be interpreted as an endorsement, recommendation or approval of any drug nor is it intended to be relied upon as a substitute for seeking appropriate advice from a qualified health care practitioner.*

## References – Sativex

1. Anon. Cannabis-based medicines – GW Pharmaceuticals. High CBD, high THC, medicinal cannabis- GW Pharmaceuticals, THC:CBD. *Drugs R&D* 2003;4(5):306-9.
2. Baker D, Pryce G, Giovannoni G, Thompson AJ. The therapeutic potential of cannabis. *Lancet Neurology* 2003;2:2919.
3. Beard S, Hunn A, Wight J. Treatment for spasticity and pain in multiple sclerosis: a systematic review. *Health Technology Assessment* 2003;7(4):a-121. Available from: <http://www.ncchta.org/fullmono/mon740.pdf> (Accessed 15 June 2005).
4. Berman JS, Symonds C, Birch R. Efficacy of two cannabis based medicinal extracts for relief of central neuropathic pain from brachial plexus avulsion: results of a randomised controlled trial. *Pain* 2004;112:299-306.
5. Crayton H, Heyman RA, Rossman HS. A multimodal approach to managing the symptoms of multiple sclerosis. *Neurol* 2004;63 (Suppl 5):S12-18.
6. Croxford JL. Therapeutic potential of cannabinoids in CNS disease. *CNS Drugs* 2003;17(3):179-202.
7. Dworkin RH, Backonja M, Rowbotham MC, Allen RR, Argoff CR, *et al.* Advances in neuropathic pain. *Arch Neurol* 2003;60:1524-34.
8. GW Announces Positive Preliminary Results with its Cannabis Medicine in Phase III Neuropathic Pain Trial [press release] 15/06/2004. Available from: [http://www.gwpharm.com/news\\_press\\_releases.asp?id=/gwp/pressreleases/currentpress/2004-06-15/](http://www.gwpharm.com/news_press_releases.asp?id=/gwp/pressreleases/currentpress/2004-06-15/) (Accessed 27 May 2005).
9. GW Announces Positive Results From Each of Four Phase Three Clinical Trials [press release]. GW Pharmaceuticals. 05/11/2002. Available from: [http://www.gwpharm.com/news\\_press\\_releases.asp?id=/gwp/pressreleases/currentpress/2002-11-05/](http://www.gwpharm.com/news_press_releases.asp?id=/gwp/pressreleases/currentpress/2002-11-05/) (Accessed 27 May 2005).
10. Health Canada. Drug Product Database. Therapeutic Products Directorate. Available from: <http://www.hc-sc.gc.ca/hpb/drugs-dpd/index.html> (Accessed 26 May 2005).
11. Killestein J, Uitdehaag BJM, Polman CH. Cannabinoids in multiple sclerosis. Do they have a therapeutic role? *Drugs* 2004;64(1):1-11.

12. Maloni HW. Pain in Multiple Sclerosis: An overview of its nature and management. *J Neurosci Nurs* 2000;32(3):139-44, 152.
13. Multiple Sclerosis Society of Canada. MS Information. Available from: <http://www.mssociety.ca/en/information/default.htm>. (Accessed 27 May 2005).
14. National Institute of Clinical Excellence. Cannabinoids for the treatment of the symptoms of multiple sclerosis [scope]. February 2003. Available from: <http://www.nice.org.uk/page.aspx?o=33869> (Accessed 8 June 2005).
15. Notcutt W, Price M, Miller R, Newport S, Phillips C, Simmons S et al. Initial experiences with medicinal extracts of cannabis for chronic pain: Results from 34 'N of 1' studies. *Anaesthesia* 2004;59:440-52.
16. Pertwee RG. Cannabinoids and multiple sclerosis. *Pharmacol Therapeut* 2002;95:165-74.
17. Product Monograph of Sativex (delta-9-tetrahydrocannabinol 27 mg/ml (from Tetranabinex – Cannabis sativa L. extract) and cannabidiol 25 mg/ml (from Nabidiolex – Cannabis sativa L. extract). Bayer Inc. Toronto, ON. 13 April 05.
18. Product Monograph of Ultram (tramadol hydrochloride). Ortho-McNeil Pharmaceutical, Inc. Raritan, NJ. May 2004. Available from: <http://www.ortho-mcneil.com/products/pi/pdfs/ultram.pdf> (Accessed 13 June 2005).
19. Product Monograph of Valium (diazepam). In: Gillis MC, ed. *Compendium of Pharmaceuticals and Specialties*. 32<sup>nd</sup> ed. Canadian Pharmaceutical Association. Ottawa, ON. 1997. P. 1678-9.
20. Product Monograph of Zostrix/Zostrix HP (capsaicin). In: Wellbanks L, ed. *Compendium of Pharmaceutical and Specialties*. 35<sup>th</sup> ed. *Compendium of Pharmaceuticals and Specialties*. Canadian Pharmacists Association. Ottawa, ON. 2000. P. 1809.
21. Release of Positive Data from Completed Phase II Pain Trial [press release]. GW Pharmaceuticals. 30/09/2002. Available from: [http://www.gwpharm.com/news\\_press\\_releases.asp?id=/gwp/pressreleases/currentpress/2002-09-30/](http://www.gwpharm.com/news_press_releases.asp?id=/gwp/pressreleases/currentpress/2002-09-30/) (Accessed 27 May 2005).
22. Repchinsky C, ed. *Compendium of Pharmaceuticals and Specialties*. Canadian Pharmacist's Association. Ottawa, ON. 2005.

23. Sakurai M, Kanazawa I. Positive symptoms in multiple sclerosis: their treatment with sodium channel blockers, lidocaine and mexiletine. *J Neurol Sci* 1999;162-8.
24. Shapiro RT. Management of spasticity, pain and paroxysmal phenomena in multiple sclerosis. *Curr Neurol Neurosci Rep* 2001;1:299-302.
25. Sharief MK, Notcutt WG, Multibako I, Hawkes C, Bolt J, Potts RL et al. Sativex in the treatment of patients with chronic refractory pain due to MS or other defects of neurological function [abstract]. *J Neurol Neurosurg Psychiatry* 2004;75:1219.
26. Smith PF. Cannabinoids in the treatment of pain and spasticity in multiple sclerosis. *Curr Opin Invest Drugs* 2002;3(6):859-64.
27. Smith PF. GW-1000 GW Pharmaceuticals. *Curr Opin Invest Drugs* 2004;5(7):748-54.
28. Svendsen KB, Jensen TS, Bach FW. Does the cannabinoid dronabinol reduce central pain in multiple sclerosis? Randomised double blind placebo controlled crossover trial. *BMJ* 2004;329:253-7.
29. The National Collaborating Centre for Chronic Conditions. Multiple Sclerosis. National Clinical Guideline for Diagnosis and Management in Primary and Secondary Care. February 2004. Available from: <http://www.rcplondon.ac.uk/pubs/books/MS/MSfulldocument.pdf> (Accessed 7 June 2005).
30. Wade DT, Makela P, Robson P, House H, Bateman C. Do cannabis-based medicinal extracts have general or specific effects on symptoms in multiple sclerosis? A double-blind, randomized, placebo-controlled study on 160 patients. *Multiple Sclerosis* 2004;10:434-41.
31. Wade DT, Robson P, House H, Makela P, Aram J. A preliminary controlled study to determine whether whole-plant cannabis extracts can improve intractable neurogenic symptoms. *Clin Rehab* 2003;17:21-9.
32. Walker JM, Huang SM. Cannabinoid analgesia. *Pharmacol Therapeut* 2002;95:127-35.
33. WHO Collaborating Centre for Drug Statistics Methodology. ATC/DDD Index 2005. Available from: <http://www.whocc.no/atcddd/> (accessed 9 May 2005).
34. Williamson EM, Evans FJ. Cannabinoids in clinical practice. *Drugs* 2000;60(6):1303-14.

35. Zajicek J, Fox P, Sanders H, Wright D, Vickery J, Nunn A, *et al.* Cannabinoids for treatment of spasticity and other symptoms related to multiple sclerosis (CAMS study): multicentre randomised placebo-controlled trial. *Lancet* 2003;362(9395):1517-26.