

## Report on New Patented Drugs - Fuzeon

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 after January 1, 2002.

**Brand Name:** Fuzeon  
**Generic Name:** (*enfuvirtide*)  
**DIN:** 02247725 3 mL/vial  
**Patentee:** Hoffmann-LaRoche Limited

### Indication - as per product monograph:

For the treatment of HIV-1 infection in antiretroviral experienced patients or patients with resistant virus.

**Notice of Compliance:** July 14, 2003

**Date of First Sale:** August 2003

**Date of Issuance of First Patent(s) Pertaining to the Medicine:** March 14, 2006

**ATC Class:** J05AX07  
*Antivirals for Systemic Use, Direct Acting Antivirals, Other Antivirals*

## APPLICATION OF THE GUIDELINES

### Summary

The introductory price of Fuzeon was found to be within the Guidelines in the introductory period (August to December 2003), as the price in Canada did not exceed the median of the prices of the same drug product in those countries listed in the *Patented Medicines Regulations* (Regulations) in which it was sold by an amount sufficient to trigger any of the investigation criteria under the *Compliance & Enforcement Policy*.

For information on the Criteria for Commencing an Investigation, please see Schedule 5 of the *Compendium of Guidelines, Policies and Procedures*, as posted on our Web site under Legislation, Regulations and Guidelines.

## Scientific Review

Fuzeon is a new active substance and the PMPRB's Human Drug Advisory Panel (HDAP) recommended that Fuzeon be reviewed as a category 2 new medicine (provides a breakthrough or substantial improvement). Enfuvirtide represented the first drug of a new class of antiretroviral agents (fusion inhibitors) to be marketed in Canada.

The HDAP did not identify any comparators for the conduct of a Therapeutic Class Comparison (TCC) test.

## Price Review

Under the Guidelines, the introductory price of a new category 2 drug product will be presumed to be excessive if it exceeds the prices of all of the comparable drug products based on a TCC test, and the median of the international prices identified in an International Price Comparison (IPC) test.

As no comparable drug products could be identified for purposes of conducting a TCC test, the introductory price of Fuzeon was considered within the Guidelines as it did not exceed the median of the international prices identified in the IPC test by an amount that triggered the investigation criteria. Fuzeon was sold in six of the seven countries listed in the Regulations.

### Introductory period (August to December 2003)

Country	Price per vial (CDN\$)
Canada	\$39.7600
France	\$37.1614
Germany	\$39.3053
Sweden	\$38.8904
Switzerland	\$38.3194
United Kingdom	\$45.5822
United States	\$37.6958
International Median	\$38.6049

Source: Publicly available prices as per the *Patented Medicines Regulations*

*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 – Fuzeon**

1. Lalezari JP, Henry K, O'Hearn M, et al. Enfuvirtide, and HIV-1 fusion inhibitor, for drug-resistant HIV infection in North and South America. *N Engl J Med* 2003;348(22):2175-85.
2. Lalezari JP, Eron JJ, Carlson M, Cohen C, DeJesus E, Arduino RC, Gallant JE, Volberding P, Murphy RL, Valentine F, Nelson EL, Sista PR, Dusek A, Kilby JM. A phase II clinical study of the long-term safety and antiviral activity of enfuvirtide-based antiretroviral therapy. *AIDS* 2003 Mar 28;17(5):691-8.
3. Cohen CJ, Dusek A, Green J et al. Long-term treatment with subcutaneous T-20, a fusion inhibitor, in HIV-infected patients: patient satisfaction and impact on activities of daily living. *AIDS PATIENT CARE and STDs* 2002;16(7): 327-335.
4. Lazzarin A, Clotet B, Cooper D, et al. Efficacy of enfuvirtide combined with optimized antiretroviral background regimen in patients infected with drug-resistant HIV-1 in Europe and Australia. Submitted to the *N Engl J Med*.
5. Clotet B, et al. Enfuvirtide (T-20) in combination with and optimized background (OB) regimen vs. OB alone in patients with prior experience or resistance to each of the three classes of approved antivirals (ARVs) in Europe and Australia. (Abstract & Poster) The XIV International AIDS Conference, July 2002.
6. Lange J, et al. Enfuvirtide (T-20) in combination with and optimized background (OB) regimen vs. OB alone: week 24 response among categories of baseline (BL) demographics, treatment experience, and HIV antiretroviral (ARV) resistance. (Poster) The XIV International AIDS Conference, July 2002.
7. Henry K et al. Enfuvirtide (T-20) in combination with and optimized background (OB) regimen vs. OB alone in patients with prior experience or resistance to each of the three classes of approved antivirals (ARVs) in North America and Brazil (TORO 1). (Poster) The XIV International AIDS Conference, July 2002.

8. Lalezari J et al. Enfuvirtide (T-20) in combination with and optimized background (OB) regimen vs. OB alone in patients with prior experience or resistance to each of the three classes of approved antivirals (ARVs) in North America and Brazil (TORO 1). (Presentation slides) The XIV International AIDS Conference, July 2002.
9. Lange J, et al. Enfuvirtide (T-20) in combination with and optimized background (OB) regimen vs. OB alone: week 24 response among categories of baseline (BL) demographics, treatment experience, and HIV antiretroviral (AVR) resistance. (Poster), 6<sup>th</sup> International Congress on Drug Therapy in HIV Infection. November 2002.
10. Walmsley S et al. Lack of influence of GP41 antibodies that cross-react with enfuvirtide (ENF) on the efficacy and safety of enfuvirtide in TORO 1 and TORO2 phase III trials. (Poster), 10<sup>th</sup> Conference on Retrovirus and Opportunistic Infections (CROI), February 2003.
11. Delfraissy JF et al. Summary of pooled efficacy and safety analysis of enfuvirtide (ENF) treatment for 24 weeks in TORO 1 and TORO 2 phase III highly antiretroviral (ARV) treatment experienced patients (Poster), 10<sup>th</sup> Conference on Retrovirus and Opportunistic Infections (CROI), February 2003.
12. Green J, Wintfield N. Patient acceptance with self-injection of enfuvirtide (T-20) for HIV over 24-weeks of treatment. (Poster) 6<sup>th</sup> International Congress on Drug Therapy in HIV Infection. November 2002.
13. Green J, Salgo MP, and Delehanty J. Patient survey on injection of enfuvirtide (T-20): ease of use and impact on activities. (Poster), The XIV International AIDS Conference, July 2002.
14. Hornberg J, Green J. Modeling the clinical prognosis of patients receiving enfuvirtide (T-20) in combination with an optimized background regimen according to virological and immunological response after 24 weeks. (Poster), Sixth International Congress on Drug Therapy in HIV Infection November 2002, Glasgow, UK.
15. Hornber J et al. Summary of enfuvirtide (Fuzeon) economic model: a European prospective. Technical support document prepared by Acumen LLC on behalf of Hoffman-La Roche Ltd. (For internal review purposes only).
16. The British HIV July 2003 guidelines (<http://www.bhiva.org/guidelines/2003/hiv/index.html>).
17. Department of Health and Human Services (DHHS). Guidelines for the Use of Antiretroviral Agents in HIV-1-Infected Adults and Adolescents, updated July 14, 2003. ([http://www.aidsinfo.nih.gov/guidelines/adult/AA\\_071403.pdf](http://www.aidsinfo.nih.gov/guidelines/adult/AA_071403.pdf)).
18. DHHS. Guidelines for the Use of Antiretroviral Agents in Pediatric HIV Infection, updated November 2003. ([http://aidsinfo.nih.gov/guidelines/default\\_db2.asp?id=50](http://aidsinfo.nih.gov/guidelines/default_db2.asp?id=50))
19. DHHS. Pediatric Guidelines Supplement, Pediatric Antiretroviral Drug Information, updated June 25, 2003. ([http://aidsinfo.nih.gov/guidelines/default\\_db2.asp?id=51](http://aidsinfo.nih.gov/guidelines/default_db2.asp?id=51))

20. Anna Poppa Cutting through the bull: TORO at 48 weeks. Aidsmap July 16, 2003.
21. CCOHTA. Enfuvirtide, a new treatment for HIV infection. *Issues in Emerging Health Technologies* 2003;50:1-6.
22. Enfuvirtide TORO studies: 48 week results confirm 24 week findings. (abstract) IAS Conference, Paris 2003.