Reviewer’s report

Title: Evaluation of the in vitro skin permeation of antiviral drugs from penciclovir 1% cream and acyclovir 5% cream used to treat herpes simplex virus infection

Version: 1 Date: 16 July 2008

Reviewer: John J Docherty

Reviewer’s report:

Overview: This paper compares the skin penetrating differences between 5% acyclovir and 1% penciclovir. Using excised human abdominal skin, Franz diffusion cells, adhesive tape stripping of the skin and HPLC the authors conclude that the cream formulation of penciclovir is better at diffusing to deeper layers of the skin than the acyclovir cream preparation.

Reviewers Summary: This paper is an interesting study of the skin penetrating properties of acyclovir and penciclovir and may help explain why penciclovir is more effective at treating cold sores than acyclovir. The studies are appropriately done, well explained and easily understood. The paper is acceptable for publication after appropriate responses to the points below:

Specific Points:
1. P. 5 - “Test of Skin Integrity” - please briefly state the results of the study here (not in Results).
2. P. 8 - “Discussion” – The authors refer to Figure 4. There was no Figure 4 in the manuscript that I received.
3. P.8 - 10 - “Discussion”-The authors attempt to explain their results by discussing the hydrophobic and hydrophilic differences between acyclovir and penciclovir. The question that this reviewer has is as follows: Could the concentration differences that the authors found between the two drugs at the different skin layers be simply due to the different intracellular half lives of acyclovir (0.7-1 hr.) and penciclovir (10-20 hrs.)? This is especially relevant when considering that the only samples collected were taken 24 hours after the application of the drugs to the excised skin. Taking the samples at 24 hours after drug application would clearly favor finding penciclovir in the various skin layers because of its longer half life rather than acyclovir. This possibility should be addressed in the “Discussion” of the paper.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.
Declaration of competing interests:

'I declare that I have no competing interests'