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: 10 July 2008

Reviewer: Charles M Heard

Reviewer’s report:

Major Compulsory Revisions (which the author must respond to before a decision on publication can be reached)

The authors correctly state that “HSV-1 mainly infects cells in the basal layer..” and that “..antiviral drugs should therefore be able to reach therapeutic concentrations in these cells”. However, the tape stripping procedure involved the taking of only 12 strips, which means that only material from the stratum corneum would have been removed. Therefore, absolutely no evidence is provided to suggest drug has penetrated to the site of action. This must be repeated with further strips that can be used to demonstrate, eg assaying for appropriate keratin markers, the basal cell has been reached.

The data must be subjected to the appropriate statistical analysis.

The section on molecular modelling proves nothing and should be removed from the paper.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

The authors correctly used in-use simulation for applying the test formulations. However, the manner in which this application was made must be stated. The correct procedure would be to use a number of circular massaging actions. Also, they need to state exactly how they successfully and reproducibly administered 5 mg/cm2 to each cell.

Must state solubility of drugs in the receptor phase

Must state the diluent used to prepare calibration curves, ie this must be receptor phase, to avoid solvatochromic artefacts.

Discretionary Revisions (which are recommendations for improvement but which the author can choose to ignore)

“It is well established that the outer skin layer.....is the main barrier to skin permeation....”. This is an outdated view and there is increasing evidence that for lipophilic permeants, the viable epidermis is the main barrier.
Level of interest: An article of limited interest

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

'I declare that I have no competing interests'