Reviewer's report

Title: HIV-1 subtype and viral tropism determination for evaluating antiretroviral therapy options: An analysis of archived Kenyan blood samples

Version: 1 Date: 16 July 2009

Reviewer: Wolfgang Preiser

Reviewer's report:

Major Compulsory Revisions

1. In "Introduction" various minor points:
   - 40 mio worldwide is obsolete (cf. UNAIDS)
   - "classes": should be "groups"
   - CCR5 is a co-receptor, not a receptor
   - ART has probably NOT reduced HIV transmission in developed countries

2. All important aspects relating to the usefulness and importance of this study are mentioned, albeit in a somewhat haphazard way; this must be clarified (and should in the process also be shortened). For example, explain co-receptor antagonists more clearly as a novel drug class so far unavailable in developing countries but used in industrialised countries in patients failing ART.

3. In "Mat & Meth": Have the PCR primer sequences been published previously, or just the PCR conditions in general? If yes please cite their source; if not please provide more details. I also suggest a table with the sequences rather than mentioning them in the full text.

4. In "Results": I do not see a need to refer to negatives - this is a convenience sample anyway so the ratio positives / negatives is not valid, and I wonder whether the gender ratio and geographical origin of patients reflect more than the user profile of that particular clinic at the time.

5. In "Results": Why were 19 / 20 samples checked for coreceptor usage, what was the problem with the 20th sample?

General comments:

This is a small but valuable study, as samples tested were obtained before the antiretroviral therapy (ART) roll-out in Kenya took place. However it has clear limitations, e.g. small numbers, use of a convenience cohort, etc. One further shortcoming is that you did not look for antiretroviral drug resistance-associated mutations to define whether there was any baseline drug resistance (which is admittedly unlikely given the situation and the small sample size).

I suggest that the authors try to explain the reason why this paper is valuable and
at the same time its (important) limitations more clearly while at the same time shortening both the introduction and the discussion. (The Abstract should also be revised in line with the above to state the problem and this paper's contribution more clearly).

Some minor problems (list not exhaustive - there are numerous omissions of "the" and mix-up of singular and plural etc.): p. 8 bottom “pose” not “pause”; Ref. 2 and 7: invalid citation, please repair! ref. 9 “heteroduplex”

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

**Quality of written English:** Needs some language corrections before being published

**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.