Reviewer's report

Title: Impact of daily supplementation of Spirulina platensis on the immune system of naive HIV-1 patients in Cameroon: A 12-months single blind, randomized, multicenter trial

Version: 1
Date: 18 June 2015

Reviewer: Venkateswarlu Chamcha

Comments for the authors:

Marthe et al. report that a daily supplementation of Spirulina platensis a cyanobacterium in diet can improve immune system of HIV infected individuals. They attempt to address an important issue of malnutrition that may impact on the HIV disease outcome in the HIV infected patients that is a major concern around the world. Given the importance to the fact that HIV infected patients needs good nutrients rich diet and if those comes from a cyanobacterium, which intern helps for their immune system to function better, I recommend this paper to consider for the publication but I after addressing following concerns.

Major comments:

1. As presented in the figure 2, subjects in the control group had lower CD4 counts than that of the spi group initially i.e. at month 0, and showed continuously lower numbers. Where as in the spi group these numbers stayed increased to some extent. Although there was mentioning of antiviral activity of spirulina in the discussion, is there any evidence that can show clearly that spirulina can impact on T or B cells? If not then it may be the other factors that may contribute to the overall improvement of CD4 cell counts in these individual (less likely)?

2. In the last paragraph of the results (page 6) the authors quote that spirulina significantly stimulated the immune system. Does anybody or you know the spirulina activates immune system?

3. Increase in the viral RNA copies in control group rose strikingly higher where as spi group there was a significant control even though patients have relevantly high CD4 numbers. Again is there any data invitro or invivo that can say that the effect is not a fluke? but real and indeed mediated by spirulina?

Minor comments:

1. Show number of individuals in your figures such as (n=?) along with P values wherever observed significance?

2. I think the discussion is mostly a repeat of introduction and results. It needs restructuring focused majorly on the implications of the study findings and next steps taking spirulina further.
3. I noticed few typos and please check them.

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

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

**Declaration of competing interests:**

I don't have any competent interests in this study.