Reviewer's report

**Title:** Centipede Grass exerts anti-adipogenic activity through inhibition of the AKT signaling pathway

**Version:** 1  **Date:** 20 June 2012

**Reviewer:** Marie josephe Amiot

**Reviewer's report:**

1. Is the question posed by the authors well defined?
   yes. The study investigates the anti-obesity of Centipede grass GG and the molecular mechanisms in adipocyte, more particularly during its differentiation. The authors find that CG suppressed lipid droplet formation and adipocyte differentiation in 3T3-L1 cells in a dose-dependent manner, with a decrease of C/EBP# and PPAR#, and a down-regulation of the phosphorylation levels of Akt and GSK3#

2. Are the methods appropriate and well described?
   not at all. The content (flavonoid and other compounds) of the extracts tested is poorly described in terms of quantity of bioactive molecules. What is the percentage of flavonoids? What are the other molecules present in the extracts? What is the variability of the bioactive content?

3. Are the data sound?
   Antiadipogenic activity by CG through the inhibition the expression of C/EBP#, C/EBP#, and PPAR# and the Akt signaling pathway in 3T3-L1 adipocytes remains speculative. In fact, the bioavailability of bioactive flavonoids was not taken into account, and the dose appeared high even the absence of toxicity. If orally taken, it is known that flavonoids are poorly absorbed and extensively metabolized leading to conjugates with sulfates and glucuronides. Thus to get a right evaluation of CG extract, it woul be relevant to test the circulating conjugates.

4. Does the manuscript adhere to the relevant standards for reporting and data deposition? Yes

5. Are the discussion and conclusions well balanced and adequately supported by the data? Yes

6. Are limitations of the work clearly stated? No, it is difficult to discriminate the role of the flavonoid structures reported in material and methods. To evaluate their role, the authors must test the same extract after removing flavonoids

7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished? Yes
8. Do the title and abstract accurately convey what has been found? Yes

9. Is the writing acceptable? Yes. Figure 1 part A and B must be removed, because of non significant results (the results in the text would be sufficient).

**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.