Reviewer's report

Title: Allograft inflammatory factor 1 (AIF-1) is a new human adipokine involved in adipose inflammation

Version: 3 Date: 30 April 2013

Reviewer: Lies Langouche

Reviewer's report:

Major compulsory revisions:
This study is certainly of interest, but the outline of the different studies is confusing. The different study populations used should be more clearly identified and this in the same order in which they are presented in the result section.

1. The first cohort of which results are presented, are the subjects from which adipose tissue biopsies were collected and AIF-1 secretion was determined with ELISA. These participants are not enlisted in the participant section of the M&M. You should add this cohort to the participants section and define this cohort as cohort 1.

2. In addition, the setup of the AIF-1 secretion from adipose tissue biopsies is not entirely clear. The methodology is very limited and referred to as described in ref 24 (M&M p7, l15) and ref 25 (p8, l4). Which reference is the correct one? Did the authors use previously collected samples? Is this a new experiment? Please add a short description of the setup of this experiment.

3. The next experiment described by the authors in the result section, is the expression levels of AIF-1 in the different cell fractions present in adipose tissue. The subjects from which adipose tissue was collected for this study is not identified as a separate cohort and is added at the end of the M&M participant section. This cohort should also be more clearly defined and identified as study cohort 2.

4. In the last cohort (71 females), subcutaneous abdominal WAT was obtained and AIF-1 expression was determined. In these patients also serum levels of adiponectin were quantified. If possible, it would be very interesting to use the same samples to quantify serum AIF-1. This would allow to correlate the expression in the adipose tissue with circulating levels.

4. In the discussion, the authors should make reference to the available literature on AIF-1 and the metabolic syndrome [Fukui et al, Metabolism. 2012; 61(7):1021-5 and Fukui et al, Diabetes Res Clin Prac 2012; 97(1): 146-150].

Minor essential issues:
1. P3, l22, the AIF-1 -/- mice are protected against diet induced obesity: the reference to which is referred, is not accessible to the public and is not included in the reference list.
2. P5, l7: The authors state ‘Unfortunately, it was not possible to recruit enough
male subjects to perform these clinical studies'. Indeed, only in the cohort of AIF-1 secretion, one male subject is included. This should be stated in the discussion, as a limitation of the study.

3. P6, l16: ‘adipocytes’ and ‘mature adipocytes’ are the same cells. So one of them should be removed from the list.

4. P8, l23: please specify that you are correlating AIF-1 mRNA with clinical parameters.

5. Figure legend of figure 2: Please explain what (n=5-6) means in the legend of figure 2?

6. Figure legend of figure 3: only panel C includes paired data. Please clarify the legend.

7. Table 1: the negative symbol is lacking for the r-value of KITT in the simple regression.

8. Figure 1: Please add an explanation for the missing 3-h sample point in one patient. On the graph, which patient is the male patient?

Discretionary revisions:
I suggest the addition of a table in which demographic data of all 5 studied cohorts are enlisted.

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