Reviewer's report

**Title:** Consumption of whole grains and legumes modulates the genetic effect of the APOA5 -1131C variant on changes in triglyceride and apolipoprotein A-V concentrations in patients with impaired fasting glucose or newly diagnosed type 2 diabetes: an open label randomized controlled intervention trial

**Version:** 2 Date: 12 September 2013

**Reviewer:** Martin O. Weickert

**Reviewer's report:**

Ryungwoo Kang and colleagues aimed to investigate whether a substitution of whole grains and legumes for refined rice in a high carbohydrate diet (about 65% of energy derived from carbohydrate) modifies the effect of an apolipoprotein A5 gene (APOA5) -1131T>C polymorphism on changes in apolipoprotein A-V (apoA-V) and triglyceride concentrations.

Major compulsory comments:

1. Effects of this relatively mild dietary intervention on all subjects and especially on carriers of the TT versus C allele were striking but might be related to chance.
   - Was power analysis performed prior to the study?
   - Dietary intake was based on self-reports obtained from weighed food. Despite this, effects of the dietary intervention on triglyceride levels were striking, with a 20% difference between groups in carriers with the TT allele, and this doubled to 40% in carriers of the C allele. Even independent of the genotype, these effects are remarkable; please discuss in the context of results of similar previous dietary intervention studies in other cohorts.

2. Clinical trials NCT01784952: Did authors intend to investigate this SNP only? No mention is made whether further SPNs were intended to be investigated. The earliest record from February 2013 states a title of “Consumption of Whole Grains and Legumes Modulates the Genetic Effect of the APOA5 -1131C Variant”. However, this record was filed 4 month after the completion of this study. Please comment

3. Ethics: solely due to the fact of being included in this study, the odds of a participant of having the high risk gene doubles from an expected ~ 0.3 to 0.59. This needs to be discussed. Did authors cover this aspect in the Ethics application?

**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