Reviewer's report

Title: Liver X receptor beta polymorphisms in type 2 diabetes mellitus and obesity in three cohort studies: HUNT 2 (Norway), MONICA (France) and HELENA (Europe)

Version: 1 Date: 17 June 2010

Reviewer: Kirsten Prufer

Reviewer's report:

The paper by Solaas et al. demonstrates a potential correlation between a single nucleotide polymorphism (SNP) in the human LXR# gene and the risk of type 2 diabetes mellitus (T2DM) and obesity. After identification of SNPs in a small study, the presence of these SNPs was correlated to T2DM and obesity in 3 separate cohort studies. My expertise in the evaluation and correlation with phenotypes of sequencing data obtained in cohort studies is limited. From this position, however, the presented data are convincing to me. The hypothesis that a specific transcription factor binding site created by the presence of a SNP plays a role in the higher prevalence of T2DM and obesity in subjects with this SNP is plausible; and despite being disproved, the data clearly indicate more potent transcription of LXR# in the presence of this SNP. The paper is mostly well written, the methods appropriate and well described, and the data well presented. The discussion and conclusions are supported by the data and limitations of the work are clearly stated.

Discretionary revisions:
1. The background would benefit from better organization. The review of LXR# functions should lead to a clearly defined question, objective, or hypothesis.
2. The title could better reflect the main finding of the paper.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:
I declare that I have no competing interests.