Reviewer’s report

Title: A tagging SNP in INSIG2 is associated with obesity-related phenotypes among Samoans

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Reviewer: Partha Majumder

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The manuscript has sought to confirm the finding of an earlier study that had found a significant association of rs7566605 in INSIG2 with obesity. The present study was conducted in Samoa. The sample size is adequate. The study selected 4 tagSNPs from the CHB database; rs7566605 turned out to be located on the extremal 5’ end. This, I think, is a major limitation of this study. The authors should have selected tSNPs from a region in and around the INSIG2 gene, such that rs7566605 was enveloped by tSNPs on both 5’ and 3’ ends. (Currently, there are no SNPs in the 5’ end of rs7566605.) The present study has found association with rs9308762, which is on the opposite end (3’ extremal end), in subsets of the total sample. I think the authors should select some SNPs from the region 5’ to rs7566605 and test for association.

On page 3 it is stated “the Samoans from both territories form a single socio-cultural unit with frequent exchange of mates and genetically they represent a single homogenous population.” I wonder whether the authors have actually tested for population substructuring. If so, this should be mentioned.

On page 3 it is further stated “This study sample was restricted to those 907 participants with a fasting glucose level of <=110mg/dL in order to reduce the confounding of hyperglycemia and type 2 diabetes on the obesity traits.” However it is not stated whether any of the 907 participants on anti-diabetic medication? This is important.

While the findings of this study are interesting, these are not exciting. I do not think that the findings of this study have provided clear confirmatory evidence of association of rs7566605 with obesity among Samoans. I suggest that the authors carry out some further work to increase the strength of this study.

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.

Declaration of competing interests:

I declare that I have no competing interests