Reviewer’s report

Title: The Neck-Region Polymorphism of DC-SIGNR in Peri-Centenarian from Han Chinese Population

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Reviewer: Luis Barreiro

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The manuscript by Li et al. entitled “The neck-region polymorphism of DC-SIGNR in Peri-Centenarian from Han Chinese population” reports a classical case control study testing for an association between variable tandem repeats (VNTR) of the neck region of DC-SIGNR and longevity. Their study design involves a group of 361 peri-centerian individual and 342 ethnically matched Han Chinese controls. When considering the entire cohort the authors couldn’t find any association between the different genotypes or alleles in the neck-region of DC-SIGNR and longevity. However, when stratifying their cohort by sex they observed that the genotype 6/7 was significantly (though marginally; p=0.041) enriched in the group of centerian females. There are a few things that I believe the authors should clarify/correct before the manuscript is ready for publication.

1- In the Results and Discussion section it is not clear to me what do the authors mean by linkage disequilibrium between the 6/7 genotype and other functional loci. How can a specific genotype in this region be in linkage disequilibrium with another functional variant? What could happen is that the alleles 6 or 7 (or eventually both) could be linked with a functional variant what in that case should be revealed by an association between these alleles and longevity; not the genotype? I think there explanation of LD should be clarified.

2- In addition, I think their discussion should not be driven by the a priori hypothesis that there must be an association between the neck-region of DC-SIGNR and longevity. In page 10 the authors give multiple explanations why they couldn’t find an association without ever mentioning the most likely scenario; that there is actually no association between DC-SIGNR neck-region variation and longevity. In this sense, I believe that some parts of the discussion should be re-phrased (mainly pag 10).

Level of interest: An article of limited interest

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:
I declare that I have no competing interests' below