Reviewer's report

Title: Genes involved in muscle contractility and nutrient signaling pathways within celiac disease risk loci show differential mRNA expression

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Reviewer: Donatella Barisani

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The manuscript aims to identify the presence of differentially expressed genes in celiac disease risk loci analyzing large cohorts of controls and celiac disease patients (including potential ones).

The authors identified, through different approaches, 123 target genes whose expression was initially assessed in pilot experiments, and then focused on 11 of them that were further analyzed in the entire cohort both in intestinal biopsies as well as in peripheral blood. In the intestine seven genes were downregulated and four upregulated, data that were only partially confirmed when peripheral blood was analyzed. The authors associated the level of expression with the genotype or the related SNPs, detecting a decreased expression of the three gene in biopsies of celiac disease patients carrying the minor allele of the SNPs.

Although the paper addresses a very important issue and tries to correlate SNPs with functional differences, there are some points that need to be addressed:

Major compulsory revisions

- The authors report a variation in the expression of APPL2 and NCALD in blood, saying that the variation was in the same direction of that observed in biopsies. Did the expression levels correlated when analyzed per patient?

- The authors correctly comment on the patchiness of the histology. However, was the level of expression of the various analyzed genes affected by the degree of the lesion? Were all the celiac subjects Marsh 3C?

Discretionary revisions

- Do the authors have any data on targets/genes involved in the pathways described in the manuscript?

Level of interest: An article whose findings are important to those with closely related research interests

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

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