Reviewer's report

Title: Allelic expression analysis of the osteoarthritis susceptibility gene COL11A1 in human joint tissues

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Reviewer: Antonio Gonzalez

Reviewer's report:

The authors have addressed satisfactorily all my points of concern except for the major one where they have provided convincing justification for not testing alternative SNP, but there could still be a possibility of improvement. As already commented, the technical reliability of the assay for testing AEI with rs9659030 is questionable. Discrepancy between the findings with rs1676486 and with rs9659030 put results obtained with rs9659030 in question. Results with rs1676486 are not in question because they are supported by the Mori et al. paper. Once the authors have shown that alternative coding SNPs are not available, it would still be possible to repeat analysis of rs9659030 with a different test. That is, rs9659030 could be assessed with different primers and probes or with different technology (as single base extension, in which the authors have experience). Assessment of three or four discrepant samples with the new test will be enough to see if the results are confirmed or not.

Minor points:
- One of the revised sentences in page 13 seems incomplete: “However, the fact that AEI in mature cartilage as measured with rs1676486 is not an OA risk factor makes it hard to understand why the OA risk marked by rs2615977 would be operating via in this tissue”
- Two similar sentences in the abstract and discussion seem confusing: “These two diseases therefore share a common functional pathophysiology, namely AEI of COL11A1, but this appears to impact on disease risk only in LDH” and “Overall our study has identified that COL11A1 AEI is a common functional pathophysiology between LDH and OA, but that it is not a risk factor for OA when measured in cartilage from mature adults” Would it be more clear to say that the two tissues, spinal disc and articular cartilage, share AEI of COL11A1, but it is involved in disease risk only in LDH, not in OA?

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
I collaborate with Prof. Loughlin in the study of OA genetics