Reviewer's report

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

Version: 2 Date: 27 November 2012

Reviewer: Nils Bömer

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Major compulsory revisions:

When rs9659030 (exon 3'UTR) does not reflect the AEI of rs1676486 (exon 62) due to differences in the stability of the RNA and its physical location, the negative results reported for the rs9659030 that potentially should reflecting AEI at rs2615977 (intron 31) cannot be considered conclusive as well? This phenomenon may be an important message to the readership of BMC Musculoskeletal Disorders not mentioned in the discussion. Please explain; would the authors hypothesize that it depend on the distance between the SNPs or the location with respect to for example the 3'UTR region? What about the production of cDNA that initiates from the 3'UTR region?

Introduction:
What was the signal of COL11A1 in the arOGEN stage 2 dataset?

Results:
Please mention the physical distance between the respective SNPs. Would that influence the lack of AEI detected by the rs9659030.

I agree to the authors that the genetic association with the LDH SNP rs1676486 is not convincing but merely based on the low OR then on the lack of significance (P-value). Strictly, when performing 1 test the P-value of 0.05 is considered significant and has nothing to do with the number of tests performed in the GWA’s. The fact that there are an enormous amount of cases and controls brings about that an OR of 1.069 appears significant. The relevance of such an OR to OA susceptibility may indeed by very small.

It is not clear to the reviewer how Figure 5 should be interpreted? Was there a significant interaction between the genotypes of the rs9659030 and the AEI of rs1676486. How robust should we consider results of N=2 samples of the homozygous GG subjects?

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 declare that I have no competing interests'