Reviewer's report

Title: Viscoelastic properties of bovine knee joint articular cartilage: dependency on thickness and loading frequency.

Version: 2 Date: 4 September 2013

Reviewer: Jessica Deneweth

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Overall, this is well-formulated and well-executed scientific study of viscoelastic properties of bovine knee cartilage. It adds significant and beneficial scientific insight to the current cartilage mechanics and knee osteoarthritis bodies of literature. Therefore, I highly recommend it for publication in BMC Musculoskeletal Disorders. I have a few revisions/comments:

Discretionary Revisions

1) Were any cartilage samples excluded for the presence of pre-existing surface lesions? I see in the Methods that an India ink test was used to detect lesions, but no mention was made as to the protocol for dealing with specimens with lesions. Were the specimens excluded entirely? Or, tested at a site near but not on the lesion? As the aim of the study is to analyze healthy, pre-osteoarthritis cartilage, clarifying this aspect would be beneficial to readers.

2) It is unclear to me why the lateral and medial meniscus-covered tibial plateau samples were pooled despite the authors identifying significant medial-lateral differences. Further clarification of this choice and/or a comment in the discussion as to how it might limit study interpretation is warranted.

3) In Tables 1-3, the meaning of “^” should be noted.

Minor Essential Revisions

1) Minor capitalization issues: “table 1” in first paragraph of Results, “figure 2” in last paragraph of p. 8, and consistent capitalization of “meniscus” in Table 2.

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

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