Reviewer's report

Title: Effect of Nitric Oxide on Mitochondrial activity of Human Synovial Cells.

Version: 2 Date: 8 November 2010

Reviewer: Elizabeth Bradley

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In the manuscript titled “Effect on Nitric Oxide on Mitochondrial Activity of Human Synovial Cells” the authors examined the impact on NO production in synoviocyte apoptosis and ATP production. Previous work has demonstrated the NO production increases with development of osteoarthritis, and that increase NO production leads to mitochondrial-dependent apoptosis. The authors add to this body of knowledge by showing that ATP production and the activities of the mitochondrial respiratory chain are likewise affected by NO production. There are, however, a few suggestions the authors should consider to enhance this manuscript:

1. There are numerous spelling and grammatical errors within the text which significantly detract from the impact of this manuscript. The authors are encouraged to have a native English-speaking person thoroughly review this manuscript.

2. Much of the data presented in this manuscript has been previously reported in manuscripts referenced by the authors. The new data concerning ATP production and respiratory chain activity, however, are not complementary. This fact is acknowledged by the authors in their discussion. To enhance this manuscript, the authors are encouraged to evaluate expression of G3DPH in their study, and to determine if the decrease in ATP production is still observed when normalized to total mitochondrial mass. These two points are offered as possibilities within the discussion, but are not evaluated.

3. A description of the SNP and valinomycin treatment as well as vehicle treatments for each respective reagent used for basal measurements within the Methods section would be helpful.

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

Quality of written English: Not suitable for publication unless extensively edited

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