Reviewer’s report

Title: Effect of hyperbaric oxygen on mesenchymal stem cells for lumbar fusion in vivo

Version: 1 Date: 25 November 2009

Reviewer: David Monroe

Reviewer’s report:

This manuscript ("Effect of hyperbaric oxygen on mesenchymal stem cells for lumbar fusion in vivo") describes experiments designed to address whether hyperbaric oxygen (HBO) therapy has any effect on transplanted mesenchymal stem cells (MSCs) for bone formation. Overall, this is a nice study which concludes that HBO therapy does not significantly effect bone formation at the L4-L5 grafted area. However, the grafted MSCs do survive and probably contribute to bone formation, independent of HBO therapy. Although HBO therapy has no effect on bone formation, I believe this to be an important step to understanding how oxygen tension may contribute to bone formation, and worthy of publication.

Major Compulsory Revisions:
NONE

Minor Essential Revisions:
The figure and figure legends need to be more informative and relabeled. Especially with the multi-panel figures, it is difficult to understand what the reader is looking at.

Discretionary Revisions:
NONE

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