Reviewer's report

Title: Treatment outcome of chronic low back pain and radiographic lumbar disc degeneration are associated with inflammatory and matrix degrading gene variants: a prospective genetic association study.

Version: 1 Date: 5 November 2012

Reviewer: Lisbet Haglund

Reviewer's report:

This study investigates the relation between degeneration and pain in patients with chronic low back pain after surgical and cognitive management. It also compare purity and concentration of DNA isolated from blood and saliva. It is an interesting study but not very novel and there is a number of points that needs clarification.

1. Is the question posed by the authors well defined? Yes but the authors doesn’t answer all the questions asked
2. Are the methods appropriate and well described? yes
3. Are the data sound? yes
4. Does the manuscript adhere to the relevant standards for reporting and data deposition? yes
5. Are the discussion and conclusions well balanced and adequately supported by the data? yes
6. Are limitations of the work clearly stated? yes
7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished? yes
8. Do the title and abstract accurately convey what has been found? No
9. Is the writing acceptable? Yes

Mayor essential revisions:
It is unclear how the comparison of DNA purification from blood and saliva is relevant to the study and cannot be presented as a result?

The authors should simple state in what case the analyses were performed on blood and saliva respectively.

How can IL1 directly activate enzymes? To my knowledge, IL1 activates the production of cytokines and proteases leading to tissue destruction and pain but doesn’t have the capacity to by itself activate the pro form of the proteases. Please clarify.

It is stated that the novelty of the study is that it highlights the influence of the studied genes in patent treated surgically or by cognitive interventions but not clear what the difference was if any between the two treatments and if there was
a link to a specific polymorphism? Please clarify
It is also unclear how patients were assigned to treatment option? Please clarify.

**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.